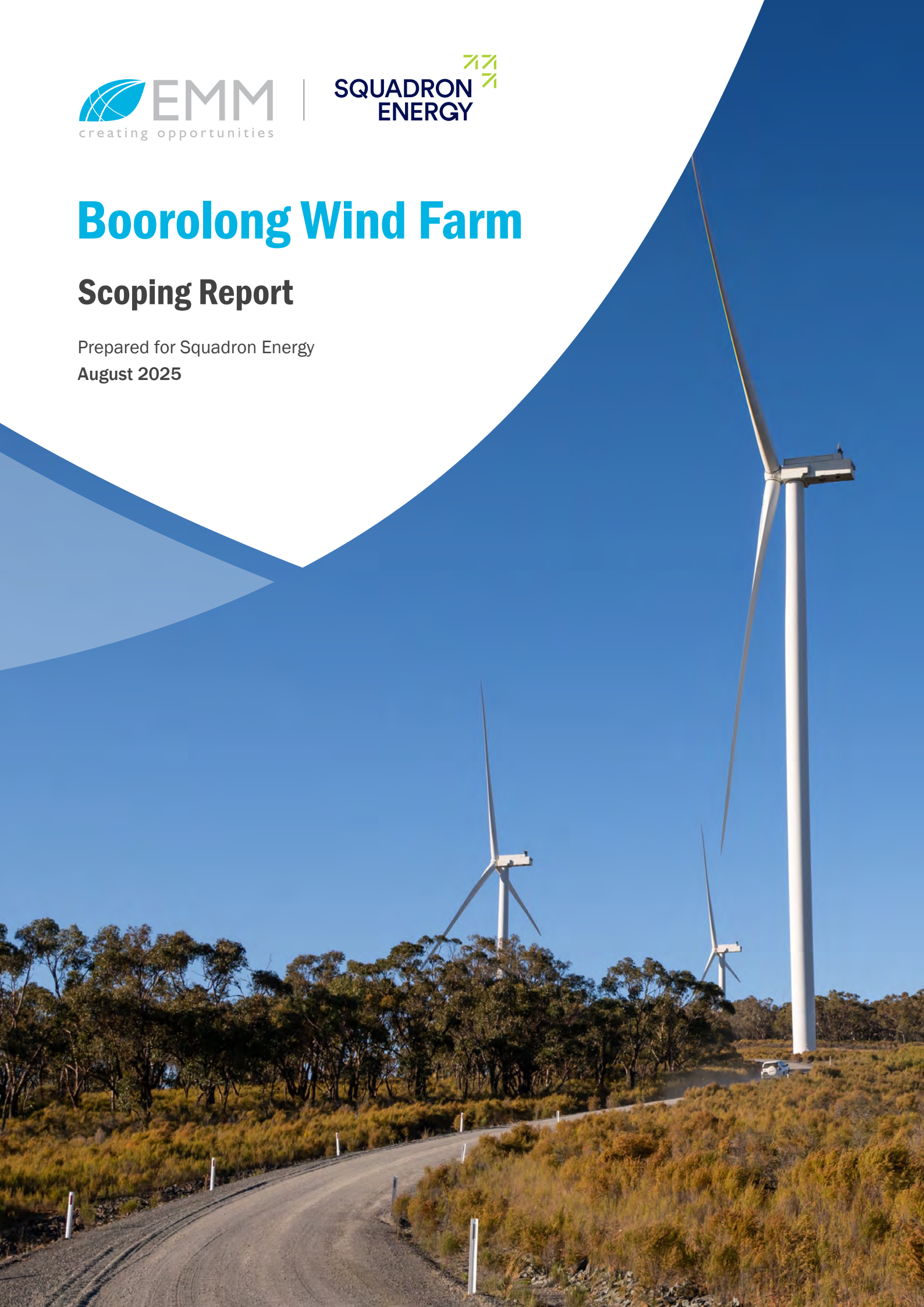
Boorolong Wind Farm

Scoping Report

Prepared for Squadron Energy

August 2025



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Squadron Energy

E250159 RP1

August 2025

Version	Date	Prepared by	Reviewed by	Comments
1	14 May 2025	R. Dodd N. Lane-Kirwan	P. Towler	Draft Chapters 1-5 for SQE review
2	3 June 2025	R. Dodd	P. Towler	Final Chapter 1-5 for SQE review Draft Chapter 6 for SQE review
3	24 June 2025	R. Dodd	P. Towler	Final
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Approved by

Dr Philip Towler
Associate Director
4 August 2025

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Glossary

The key terminology used throughout this report is summarised below.

Term	Meaning
Ancillary infrastructure	All infrastructure necessary for the construction, operation and decommissioning of the project with the exception of wind turbine generators and battery storage, including but not limited to: substations, switching stations, permanent offices and site compounds, underground and overhead electricity transmission lines, meteorological masts, communication cables (includes control cables and earthing), water storage tanks, hardstands and windfarm access tracks. Ancillary infrastructure includes permanent and temporary, onsite and offsite project infrastructure necessary for carrying out the construction, operation and or decommissioning of the project. For example, commodity sources, accommodation and public road upgrades.
Applicant	The Applicant, Boorolong Wind Farm Pty Ltd, is a wholly owned subsidiary of Squadron Energy Developments Pty Ltd (SQE).
Associated landholder	A private landholder who has an agreement in place with the Applicant.
Associated residence	A residence on privately-owned land, in respect of which the owner has reached an agreement with the Applicant in relation to the project and management of impacts. This includes rented residences that are owned by an associated landowner.
BESS	Battery Energy Storage System
Development corridor	The environmental impact statement (EIS) will assess a development corridor within the project site. The application will seek approval for surface disturbance anywhere within the development corridor to provide the flexibility for the detailed design of the project (i.e. micro-siting), while allowing a detailed environmental assessment process to be completed with relevant constraints avoided and setbacks applied. Meteorological masts may be located outside of the development corridor.
Disturbance footprint	The disturbance footprint will be the area within the development corridor in which the components of the project will be constructed following micro-siting of wind turbine generators, internal access tracks and ancillary infrastructure. The development footprint presented within the EIS will be the indicative extent of the project's actual ground disturbance.
Electrical plant compound	Area containing BESS and/or substations.
Energy hub	Energy hubs are a modern type of substation that act as connection points between renewable energy projects and the broader transmission network. Energy hubs collect electricity from solar, wind and storage projects and transfer it to the network so it can be distributed to the homes, businesses and essential services that need it.[1]
Non-associated residence	A residence on privately-owned land, in respect of which the owner has not reached an agreement with the Applicant in relation to the project.
Project	The proposed development, including the proposed wind turbine generators and all associated infrastructure and temporary facilities as described in Chapter 3.
Project site	The land required for the project (includes Crown land, Crown waterways, Crown roads and council roads). The land lot and DP details are detailed in Table 1.1. The project site (Figure 3.1) contains all project elements. It is approximately 9,475 hectares.
Renewable Energy Planning Framework	The Renewable Energy Planning Framework, particularly the *Wind Energy Guideline for State Significant Wind Energy Development* (DPHI 2024b) provides clarity and transparency for how renewable energy developments are assessed and managed.
Tip height	At the current scoping stage, the project has been designed to accommodate WTGs of up to 270 metres in height. Final numbers and power output will be dependent on the final geographic footprint as well as outcomes of the various engineering, detailed design and procurement, environmental and social studies and are subject to change.

[1] Source: https://www.energyco.nsw.gov.au/ne/frequently-asked-questions

Term	Meaning
Wind turbine generators (WTGs)	The WTG will have three blades with rotor and nacelle mounted on a tower with an internal ladder or lift. The WTGs will have slab gravity foundation and/or rock anchor foundation depending on the geotechnical conditions at each WTG site. A hardstand will be established next to each WTG. Electricity produced by each WTG will be transformed from low-voltage to medium-voltage (33 kilovolts or greater) by a transformer within the nacelle or adjacent to the WTG.

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1 Introduction

This Scoping Report has been prepared in accordance with the following guidelines and frameworks:

- *State Significant Development Guidelines – Preparing a Scoping Report* (DPIE 2022) (SSD Guideline), with a scoping checklist provided in Appendix A
- *Undertaking Engagement Guidelines for State Significant Projects* (DPHI 2024)
- *Social Impact Assessment Guideline for State Significant Projects* (DPIE 2023)
- *Standard Industry Secretary's Environmental Assessment Requirements* (SEARs)
- *Wind Energy Guideline* (DPHI 2024b)
- *Wind Energy Guideline – Technical Supplement for Landscape Character and Visual Impact Assessment* (DPHI 2024c)
- *Wind Energy Guideline – Technical Supplement for Noise Assessment* (DPHI 2024d).

1.1 The project

1.1.1 Overview

Boorolong Wind Farm Pty Ltd (BOWF), 'the Applicant', proposes to develop the Boorolong Wind Farm (the project) near Armidale, within the Armidale Regional Council and Uralla Shire Council local government areas (LGAs) (Figure 1.1). The project will connect into the national electricity market (NEM) via either a new Energy Corporation of NSW (EnergyCo) Energy hub constructed as part of the New England Renewable Energy Zone (REZ) Transmission Project, or alternatively via the Armidale to Dumaresq 330-kilovolt (kV) transmission line, which traverses the northern section of the project site.

The project is within the New England REZ, the location of which "was chosen following a detailed statewide geospatial mapping exercise undertaken by the NSW Government in 2018. This initial analysis sought to identify optimal locations to host renewable energy generation around the State, including areas with strong renewable energy resource potential, proximity to the existing electricity network, and consideration of potential interactions with existing land uses, including agricultural lands and biodiversity conservation."[2] The New England REZ was formally declared by the NSW Minister for Energy under section 19(1) of the *NSW Electricity Infrastructure Investment Act 2020*. The NSW Government intends that the New England REZ will have a network capacity of 8 gigawatts (GW).

The primary objective of the project is to deliver approximately 426 megawatts (MW) of renewable energy into the NSW electrical grid. In doing so, the project will play an important part in achieving the objectives of the New England REZ. It will also provide significant economic stimulus to the region through construction jobs and associated flow-on benefits.

The project is consistent with NSW government policy for development of electricity infrastructure. It will assist in meeting NSW's energy generation and storage requirements, as well as the NSW and Australian Government emissions reduction targets.

[2] EnergyCo New England Renewable Energy Zone website https://www.energyco.nsw.gov.au/ne-rez

The key elements of the project comprise:

- up to 71 wind turbine generators (WTGs) with a total height (tip height) of up to 270 metres (m)
- an installed generating capacity of approximately 426 MW, with the potential to power approximately 230,000 homes once fully operational
- electrical connections between the WTGs and substations – consisting of a combination of underground cables and overhead powerlines
- transmission infrastructure to connect the project to the New England Renewable Energy Zone (REZ) Transmission Project
- up to three substations (including a switching substation)
- battery energy storage system (BESS) with a capacity of approximately 150 MW and a storage duration of up to four hours
- other permanent ancillary infrastructure including private access roads and tracks, operations and maintenance buildings and facilities
- temporary ancillary infrastructure for activities required onsite (including laydown areas, concrete batching, rock crushing, etc.) and offsite (may include sites for gravel and water resources, accommodation, transport logistics, etc.) during construction, operation and decommissioning
- potential public road upgrades to facilitate safe site access, and targeted road network upgrades to facilitate delivery of wind turbine components to the site dependent on detailed traffic studies and the NSW Government strategic transport actions for the REZ access.

A comprehensive overview of the key project elements and a detailed project description is provided in Chapter 3.

This Scoping Report has been prepared in accordance with *State significant development guidelines – preparing a scoping report* (DPIE 2022b) to support a request for Secretary's Environmental Assessment Requirements (SEARs) for the project.

1.1.2 Location

The project is located on Anaiwan Country, approximately 15 kilometers (km) north-west of Armidale in the New England Region of NSW, within the Armidale Regional Council and Uralla Shire Council LGAs (Figure 1.1).

Major road access to the project site is via the New England Highway. Boorolong Road runs along the eastern border of the project site and then traverses the northern part of the project site. During construction, it is expected that WTGs and other large infrastructure components will be transported along the New England Highway from the Port of Newcastle using oversize over mass (OSOM) vehicles.

Construction materials such as cement, aggregate and water will also be transported to the site on State and local roads.

i Land tenure and lot details

The proposed project site intersects with ten freehold landholdings (held by nine landholders) in which there are multiple 'associated residences' and Crown land (including travelling stock reserves, paper roads and Crown waterways), over several lots (Figure 1.3). A land tenure summary is shown in Table 1.1.

ii Land use zones

Land is predominantly used for agriculture, such as for livestock grazing, by privately-owned farming businesses. The land use zones under the Local Environmental Plan are shown in Figure 1.3.

Table 1.1 Project site land tenure

Lot	DP	Tenure
1	232815	Freehold
1	835441	Freehold
1	127667	Freehold
1	740806	Freehold
1	563649	Freehold
1	1049535	Freehold
1	420153	Freehold
1	556913	Freehold
1	127782	Freehold
1	127883	Freehold
1	232815	Freehold
1	1087657	Freehold
1	177097	Freehold
1	1105131	Freehold
1	1173132	Freehold
1	1123325	Freehold
1	100047	Freehold
2	232815	Freehold
2	127667	Freehold
2	165658	Freehold
2	1123325	Freehold
2	1152338	Freehold
2	1195418	Freehold
2	232815	Freehold
2	587585	Freehold
2	755806	Freehold
2	1105131	Freehold
2	835441	Freehold
3	245279	Freehold
3	755806	Freehold
3	1105131	Freehold
4	755806	Freehold
4	593533	Freehold
4	791567	Freehold
4	755810	Freehold
5	1024040	Freehold
5	755806	Freehold
5	755842	Freehold
5	608268	Freehold
7	755810	Freehold
7	560082	Freehold
7	755806	Freehold
8	560082	Freehold
8	755806	Freehold
9	755806	Freehold
9	755810	Freehold
10	755806	Freehold
13	755806	Freehold
16	755818	Freehold
16	755842	Freehold
17	755806	Freehold
21	755806	Freehold
22	755806	Freehold
23	755806	Freehold
24	755806	Freehold
25	755806	Freehold
25	755810	Freehold
26	755810	Freehold

Lot	DP	Tenure
26	755806	Freehold
27	755806	Freehold
27	755810	Freehold
32	755810	Freehold
33	755818	Freehold
33	755810	Freehold
34	755818	Freehold
34	755806	Freehold
34	755810	Freehold
35	755818	Freehold
37	755821	Freehold
37	755818	Freehold
37	755810	Freehold
40	755810	Freehold
47	755810	Freehold
51	755810	Freehold
52	755806	Freehold
52	755810	Freehold
53	755810	Freehold
54	755806	Freehold
54	755810	Freehold
55	755821	Freehold
55	755806	Freehold
56	755821	Freehold
56	755806	Freehold
57	755821	Freehold
58	755821	Freehold
59	755821	Freehold
67	755818	Freehold
78	755810	Freehold
81	755821	Freehold

Lot	DP	Tenure
83	755821	Freehold
90	755818	Freehold
91	755818	Freehold
92	755818	Freehold
92	755810	Freehold
93	755818	Freehold
94	755818	Freehold
95	755818	Freehold
96	755818	Freehold
97	755818	Freehold
98	755818	Freehold
100	755818	Freehold
100	755810	Freehold
101	755821	Freehold
102	755821	Freehold
104	755821	Freehold
107	755821	Freehold
108	755821	Freehold
121	755818	Freehold
122	755818	Freehold
123	755818	Freehold
136	755842	Freehold
137	755818	Freehold
138	755818	Freehold
141	755821	Freehold
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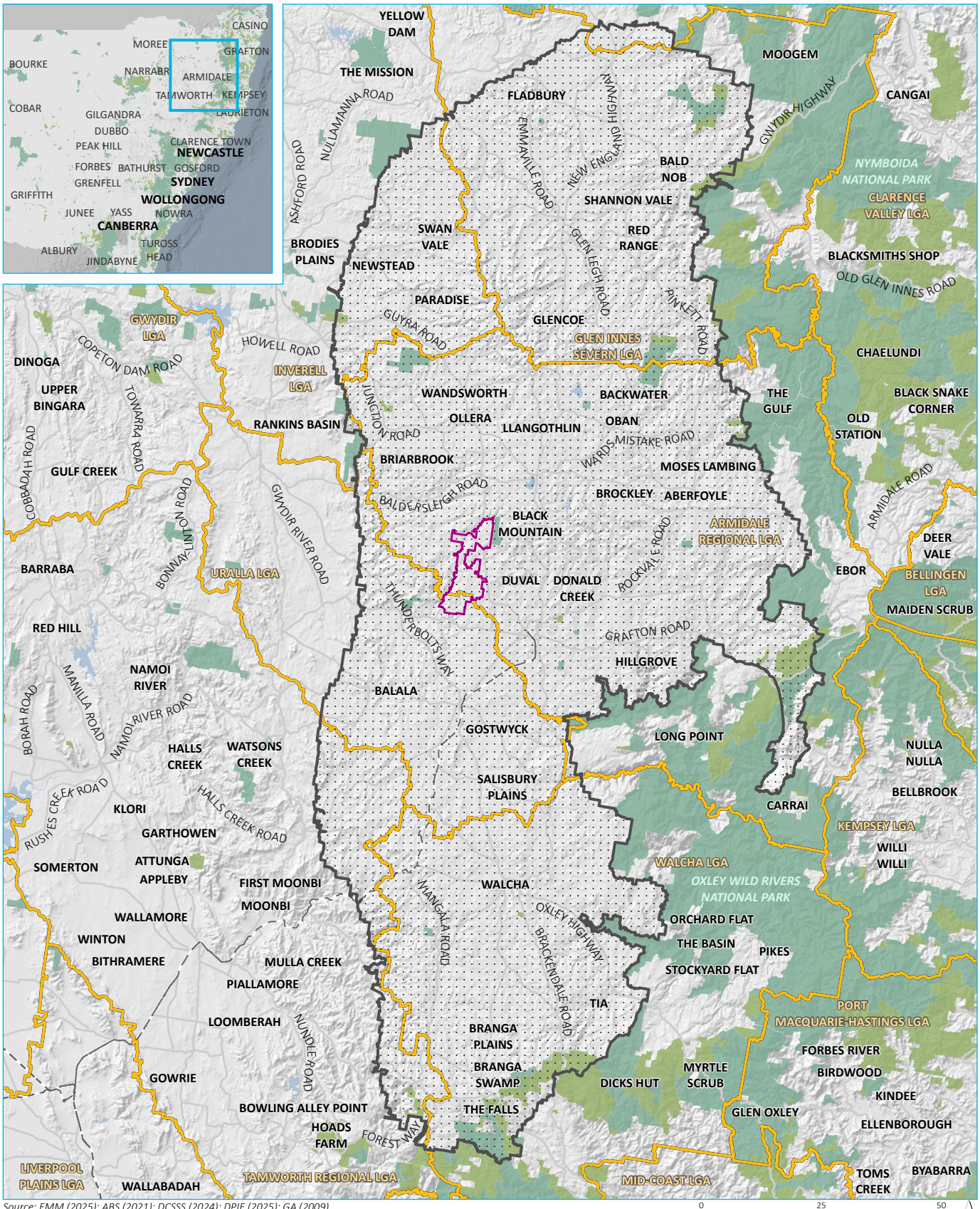

Source: EMM (2025); ABS (2021); DCSSS (2024); DPIE (2025); GA (2009)

0 25 50 km

GDA2020 MGA Zone 56

N

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KEY

- Project site

Existing environment

- Rail line
- Major road
- Named waterbody
- NPWS reserve
- State forest
- Local government area
- New England REZ

Regional context

Boorolong Wind Farm
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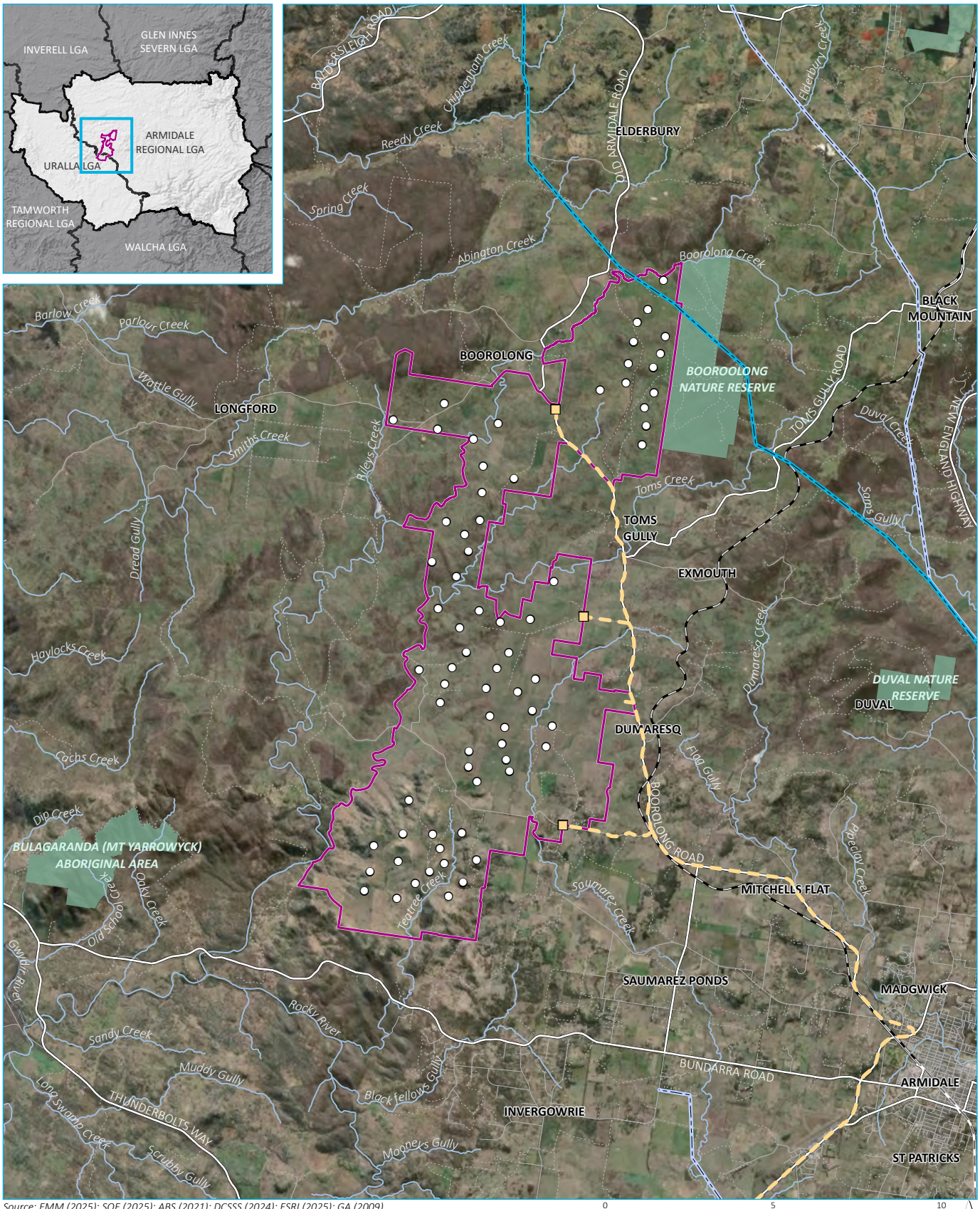
Figure 1.1

EMM
creating opportunities



Source: EMM (2025); SQE (2025); ABS (2021); DCSSS (2024); ESRI (2025); GA (2009)

0 5 10 km

GDA2020 MGA Zone 56

N

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KEY

- Project site
- Indicative wind turbine generator location
- Indicative site access point
- Traffic access route

Electricity transmission line (voltage)

- 132 kV
- 330 kV

Existing environment

- Rail line
- Rail line- disused
- Major road
- Minor road
- Vehicular track
- Named watercourse
- NPWS reserve

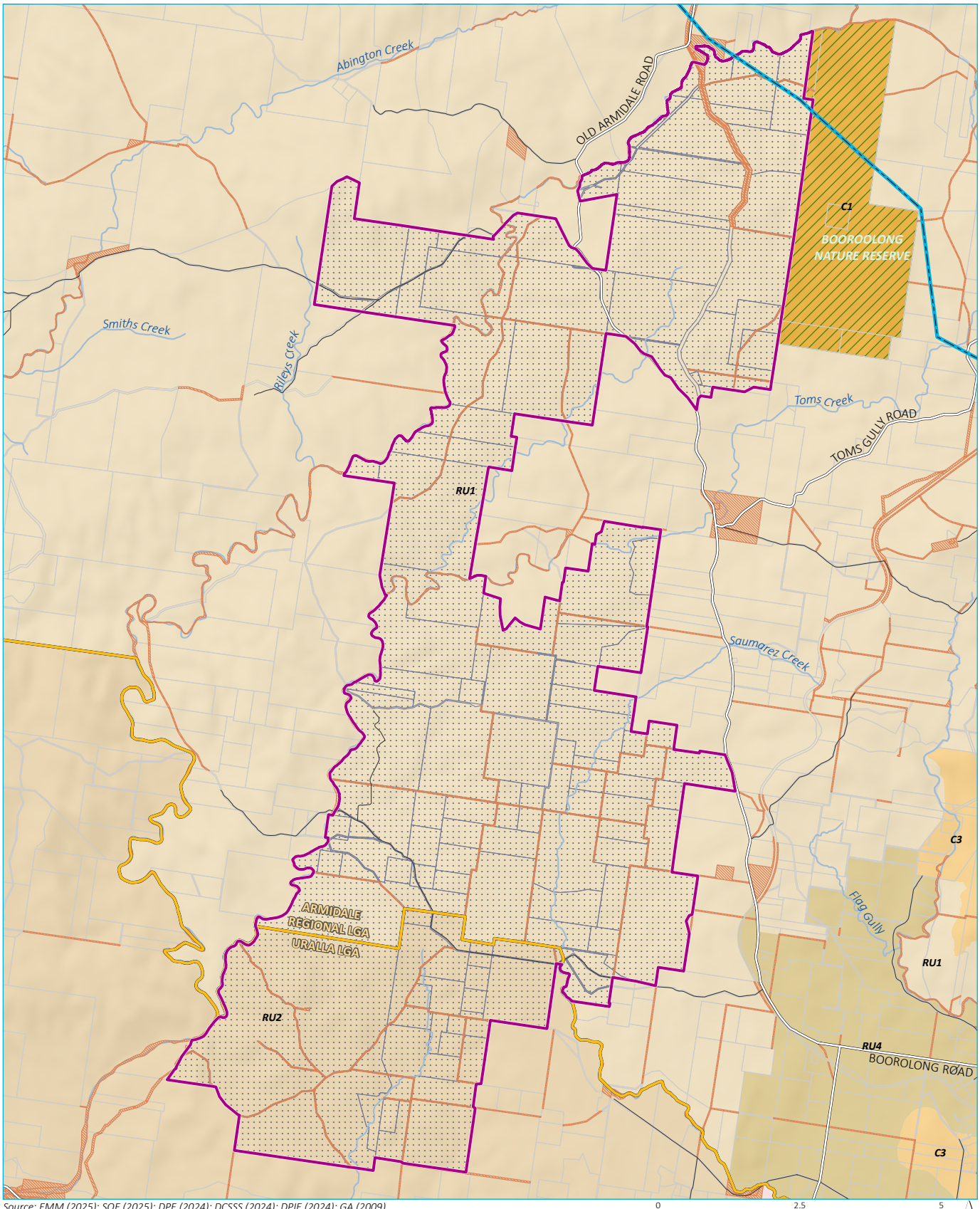
INSET KEY

- Local government area

Local context

Boorolong Wind Farm
Scoping Report
Figure 1.2

EMM creating opportunities



Source: EMM (2025); SQE (2025); DPE (2024); DCSSS (2024); DPIE (2024); GA (2009)

0 2.5 5 km

GDA2020 MGA Zone 56

N

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KEY

- Project site
- Crown land
- Private land owned by 9 landowners within the project site

Land zone

- C1 | National Parks and Nature Reserves
- C2 | Environmental conservation
- C3 | Environmental management
- R5 | Large lot residential
- RU1 | Primary production
- RU2 | Rural landscape
- RU4 | Primary production small lots

Electricity transmission line (voltage)

- 330 kV

Existing environment

- Major road
- Minor road
- Named watercourse
- Surrounding cadastral boundary
- NPWS reserve
- Local government area

Project site land tenure

Boorolong Wind Farm
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Figure 1.3

EMM creating opportunities

1.2 Background

1.2.1 History of the project

Initial engagement with landholders for the project commenced in 2020. The region north-west of Armidale, extending north and west of Guyra, offered favourable conditions for wind farm development, including strong wind resources, cleared farmland, grid connectivity, and cooperative landholders. Wind monitoring on-site began in 2020, and early project layouts developed in 2021 indicated the potential for over 300 WTGs.

In late 2021, the investigation area was reduced to the current project footprint (project site) following feedback from landholders. The project was formally announced to the public in September 2022, with a proposed capacity of up to 70 WTGs. A briefing letter (reference PDA-46075711) was submitted to DPHI (formerly Department of Planning and Environment) prior to a scoping meeting in September 2022.

As part of the project initiation, BOWF held community information drop-in-sessions on 20 and 21 September 2022, with the aim to provide the community with an overview of the project and to seek community input.

In July 2023, Origin Energy purchased "Warrane", a 7,500-hectare (ha) property directly adjacent to the western boundary of the project site, for the purpose of developing a wind farm.

During 2023 and early 2024, the project was temporarily paused due to anticipated changes to NSW wind farm development guidelines and uncertainty surrounding the progress of the New England REZ. To understand the potential impacts more fully and refine the layout, detailed investigation of the visual impacts from neighbouring dwellings was completed using the draft Renewable Energy Planning Framework (DPE 2023e).

Two key developments occurred in 2024. First, in July, EnergyCo submitted the New England REZ Transmission Project Scoping Report, which included detailed timelines and a proposal to locate the north hub within the project site. Then, in November, DPHI released the Renewable Energy Planning Framework (DPHI 2024b). In response, the project layout was revised to incorporate community feedback and align with the new guidelines (refer to Section 3.4.3), and the maximum WTG tip height was revised down from 300 m to 270 m.

In May 2025, EnergyCo announced that the north hub within the proposed New England Transmission Project would be relocated from the BOWF site to the adjacent Warrane property, north-west of the project site. Details of the location are yet to be released.

1.2.2 Key strategies to avoid and minimise the impacts of the project

The project design aims to avoid and minimise potential impacts as far as practicable. The project will be located within the New England REZ, which provides optimal conditions for the development of a wind farm and associated infrastructure as:

- the project site has a very good wind resource for wind energy generation
- the undulating (as opposed to steep) topography of the project site minimises the need for complex earthworks during construction
- the agricultural land use within and surrounding the project site is compatible with large-scale renewable wind energy generation and storage and will benefit from upgraded infrastructure such as internal access roads
- the proposed New England REZ Transmission Project (north hub) will be located to the north-west of the project site and a 330 kV electrical transmission line traverses the north of the project, both providing suitable connections to the electricity grid

- the project site is close to the New England Highway, with the local site access roads with minimal sections in built up areas
- the project site is accessible from local towns, including Armidale, Uralla and Guyra to provide accommodation and services for the project during its construction and operations.

In addition to the location of the project, iterative project design will follow the mitigation hierarchy and ensure project elements are optimised, whilst avoiding and minimising impacts where feasible. The design and positioning of project components will be further refined subject to information from environmental and social investigations undertaken in accordance with the SEARs.

Any biodiversity impacts that are unable to be avoided will be offset through a biodiversity offset strategy for the project.

The following principles will be adopted as part of ongoing design refinements:

- Take all reasonable measures to avoid the impacts of the project on biodiversity values.
- Maximise the use of previously disturbed land (i.e. land previously modified by agricultural operations, including cleared areas, established access tracks and local roads).
- Protect significant Aboriginal cultural and historical heritage values identified by the Aboriginal cultural and historical heritage assessments.
- Minimise direct and indirect impacts on neighbouring landholders, including locating infrastructure away from nearby residences and adjoining properties, where possible.
- Adopt a flexible design approach, responding to identified environmental impacts and constraints.

A community benefit sharing scheme will aim to mitigate negative social impacts and maximise benefits to the community.

1.3 Related development

1.3.1 Existing and approved development

There is no existing or approved development within the project site that would be incorporated into the project or operated in conjunction with the project.

1.3.2 Development subject to separate approval

The project will connect to the state electricity network via new infrastructure developed as part of the New England REZ Transmission Project (subject to separate assessment), or to the existing Armidale to Dumaresq 330 kV transmission line. Approvals will need to be sought by third parties for the development of any new electricity network and distribution infrastructure. If transmission infrastructure (including transmission lines) is required for the project to connect to the New England REZ Transmission Project, it will be assessed as part of the project.

1.4 The Applicant

The Applicant, Boorolong Wind Farm Pty Ltd, is a wholly owned subsidiary of Squadron Energy Developments Pty Ltd (SQE). SQE is an Australian-owned leading renewable energy company that develops, operates and owns renewables energy assets in Australia. Currently, SQE has 1.1 GW of renewable energy generation in operation and 900 MW under construction.

The details of the Applicant are provided in Table 1.2.

Table 1.2 Summary of Applicant details

Requirement	Details
Applicant name	Boorolong Wind Farm Pty Ltd
Postal address	171–173 Mounts Bay Road, Perth WA 6000
ABN	55 657 069 255

2 Strategic context

This chapter summarises the key strategic issues that are relevant to the justification and evaluation of the project, including:

- the justification of the project, including how the project is supported by key government strategies, including the regional and local planning context (Section 2.1)
- key features of the project site and surrounds that could affect or be affected by the project, including the local and regional community, important natural or built features, sensitive areas and key risks or hazards for the project (Section 2.3)
- whether the project is likely to generate cumulative impacts with other relevant future projects in the area (Section 2.4)
- identification of agreements that the proponent has entered into or is aiming to enter into with other parties to mitigate or offset the impacts of the project (Section 2.5).

2.1 Project justification and strategic support

An overview of relevant key polices, plans and strategies, and how the project aligns with each, provided in Table 2.1.

Table 2.1 Alignment with key strategic planning framework and policy context

Plan, policy or strategy	Description	Alignment with strategic framework
International context		
The Paris Agreement	The Paris Agreement is a legally binding international treaty on climate change adopted by 196 parties in 2015, which aims to limit global temperature increase to 1.5 °C above pre-industrial levels. As a signatory to the agreement, the Australian Government has committed to reduce GHG emissions by 43% below 2005 levels by 2030.	To achieve the reduction in the greenhouse gas emissions resulting in global warming, the development of renewable energy projects is critical. The project will contribute to meeting Australia's commitments under *the Paris Agreement* by providing an alternative energy source to energy sourced from fossil fuels, thereby reducing the NEM's annual greenhouse gas emissions.
National context		
Renewable Energy Act 2000	The Commonwealth *Renewable Energy Act 2000* encourages investment in large-scale renewable power by incentivising renewable energy through a Renewable Energy Certificate Market.	The project will contribute to both the increasing local and global need for such renewable projects, as well as aid in mitigating the issues of global warming and climate change.
Commonwealth *Climate Change Act 2022*	The Commonwealth *Climate Change Act 2022* sets out Australia's greenhouse gas emissions reduction targets, provide annual climate change statements, confer advisory functions on the Climate Change Authority, and other related purposes.	The project would contribute to the reduction of emissions generated in Australia required in this legislation by contributing zero emission electricity into the grid.

Plan, policy or strategy	Description	Alignment with strategic framework
Integrated System Plan 2024 (AEMO 2024) (2024 ISP)	The 2024 ISP highlights a need for urgent investment in generation, storage and transmission infrastructure to deliver secure, reliable and affordable electricity through the energy transition. The 2024 ISP's optimal development path sets out the needed generation, firming and transmission infrastructure to transition to net zero by 2050 through current policy settings. The NEM must almost triple its capacity to supply energy by 2050 to replace retiring coal capacity and to meet increased electricity consumption as other sectors decarbonise through electrification.	The project has the potential to meet these needs by supplying approximately 426 MW of firmed, reliable renewable energy, with the potential to power approximately 230,000 homes once fully operational. The project will include a BESS with a capacity of up to approximately 150 MW and will have a provision for up to approximately four hours of storage.
The Capacity Investment Scheme	The Capacity Investment Scheme (CIS) aims to build a "more reliable, affordable and resilient energy system for all Australians" (DCCEEW 2025), including 9 GW of clean dispatchable capacity. One of the key goals of the CIS is to integrate renewable energy sources into the grid while ensuring reliability. Once operational, the project would align with this aim and goal by the incorporation a BESS into the project will enable the storage of renewable energy to increase market efficiency and permit greater penetration of renewables in the electricity grid.	The CIS is designed to be technology-neutral, meaning it supports various types of energy capacity that can meet system needs. The project complements this approach by providing a reliable solution to energy storage and grid management while contributing to and complimenting the diverse mix of clean energy solutions required to meet future demand as coal-generation decreases then ceases.
State policy context		
NSW *Climate Change (Net Zero Future) Act 2023*	The NSW *Climate Change (Net zero future) Act 2023* provides NSW's targets to reduce GHG emissions by 50% by 2030 and 70 % by 2035 to achieve net zero greenhouse gas emissions by 2050.	The project would contribute to emission reductions required in this legislation through the generation of renewable electricity.
Net Zero Plan Stage 1: 2020–2030	The NSW government has legislated an emissions reduction target of 70 % below 2005 levels by 2035 and net zero by 2050 (*Climate Change (Net Zero Future) Act 2023*). The NSW greenhouse gas emissions targets can only be met by ensuring dispatchable capacity is filled by renewable sources, not high emissions technologies. This places an urgent need for new forms of renewable electricity generation and storage across the NEM. The project is ideally placed to help achieve these targets.	The project is within the New England REZ. The region has been identified as critical in replacing retiring coal fired generators in NSW. The region has also been identified as an ideal location to play a key role in a renewable energy future for NSW due to its good renewable energy resources and opportunity to utilise electricity network infrastructure. The project contributes to Priority 1 of the NSW Net Zero Plan "drive uptake of proven emissions reduction technologies that grown the economy, create new jobs or reduce the cost of living."
NSW Electricity Infrastructure Investment Act 2020 Electricity Infrastructure Roadmap (DPIE 2020)	The Electricity Infrastructure Roadmap (DPIE 2020) recognises that NSW has "some of the best renewable energy resources in the world" and provides a framework to deliver energy "infrastructure and secure NSW's future as an energy superpower." The Electricity Infrastructure Roadmap plans on capitalising on that opportunity by 'transforming the electricity system into one that is cheap, clean and reliable' (DPIE 2020). The implementation of the Electricity Infrastructure Roadmap sets the foundation for considerable investment and job creation in NSW while also addressing electricity affordability.	The project aligns with the Electricity Infrastructure Roadmap through the generation of cheap, clean and reliable electricity.

Plan, policy or strategy	Description	Alignment with strategic framework
NSW State Infrastructure Strategy 2022-2042 (Infrastructure NSW 2022)	Developed by Infrastructure NSW, the 20-year State Infrastructure Strategy is a plan to guide NSW Government investment decisions. The 'Staying Ahead' strategy for 2022–2042 "assesses infrastructure problems and solutions, and provides recommendations to best grow the State's economy, enhance productivity and improve living standards for [the] NSW community" (Infrastructure NSW 2022). The NSW Government is targeting a 50 % cut in emissions by 2030 with a goal of Net Zero emissions by 2050 and the State Infrastructure Strategy outlines a key objective to "achieve an orderly and efficient transition to Net Zero". This objective is supported by a series of recommendations, including the "Steadfast implementation of the NSW Electricity Infrastructure Roadmap in support of reliability and affordability" (Infrastructure NSW 2022). Wind farm and BESS projects play a key role in the energy transition, with the State Infrastructure Strategy identifying that "…the continued rapid shift to renewables will create a need to accelerate investment in replacement firming capacity – generally gas peaking generators, batteries and pumped hydro facilities" (Infrastructure NSW 2022).	The project aligns with the State Infrastructure Strategy by including 600 MWh of firming capacity.
NSW Electricity Strategy (DPIE 2019)	The *NSW Electricity Strategy* (DPIE 2019) is the NSW Government's plan for a reliable, affordable and sustainable electricity future that supports a growing economy and sets out an approach to respond to emerging energy security challenges. The Strategy recognises that where variable generators are unable to satisfy demand, other technologies that can provide electricity on demand (such as storage) are required. Principle 1 of the NSW Electricity Strategy acknowledges that renewable electricity generation is the cheapest form of reliable electricity generation and calls upon investment into these technologies to reduce electricity prices and ensure network reliability. The NSW Government's plan for a reliable, affordable, and sustainable electricity future. The purpose is to improve the efficiency and competitiveness of the NSW electricity market through an integrated approach to all demand and supply options. It encourages investment in lower cost generation and energy saving technologies and identifies "delivering more resilient electricity supplies' as a key action".	The project would increase supply of electricity to market and contribute to sustainable electricity outcomes (wind generation and battery storage).

Plan, policy or strategy	Description	Alignment with strategic framework
NSW Energy Security Target and Safeguard (DPIE 2020)	The objective of the *NSW Energy Security Target and Safeguard* (DPIE 2020) is to give the market certainty on the amount of new electricity generation and distribution capacity that is needed to deliver a reliable energy system over the medium to long term, in response to the retirement of several large coal-fired generators. The NSW Energy Security Target and Safeguard is established under the NSW *Electricity Infrastructure Investment Act 2020* and is equivalent to the maximum demand experienced in NSW every 10 years, plus a reserve margin. AEMO has been appointed as the Energy Security Target Monitor and its first report released in December 2021 (AEMO 2021) predicts a target breach over the 2029–30 period (i.e. that there will be insufficient infrastructure to meet the Energy Security Target). This signals the urgent need for new generation and transmission infrastructure to ensure energy security for NSW consumers.	The project will contribute additional electricity generation to the NEM and will assist in ensuring energy security for NSW consumers.
Wind Energy Guideline (DPHI 2024b)	The *Wind Energy Guideline* (DPHI 2024b) provides the community, industry and regulators with guidance on the planning framework for the assessment of large-scale wind energy development proposals that are SSD and identifies the key planning considerations relevant to wind energy development in NSW.	Site selection and impact assessment considerations detailed in the guideline have been used to inform the project and preliminary noise and visual impact assessments undertaken as part of this scoping report.
Local strategic plans		
New England North West Regional Plan 2041 (DPIE 2022c)	The *New England North West Regional Plan 2041* (DPIE 2022c) guides land use planning priorities and decision making in the New England region for the next two decades. Part 3 (sustainable and resilient) of the Regional Plan includes: • Objective 8: "adapt to climate change and natural hazards and increase climate resilience" • Objective 9: "lead renewable energy technology and investment".	The project directly contributes to Part 3 of the *New England North West Regional Plan*, particularly objectives 8 and 9.
Armidale Regional Council Local Strategic Planning Statement (Armidale Regional Council 2020)	The *Armidale Regional Council Local Strategic Planning Statement* (Armidale Regional Council 2020) sets out the 20-year vision for land use in the Armidale area, to meet social, economic and environmental needs. The statement identifies planning priorities including "investigate potential opportunities for development of renewable energy production facilities".	The project is an opportunity to develop renewable energy production facilities within the Armidale LGA.
Uralla Shire Local Strategic Planning Statement (Uralla Shire Council 2021)	The *Uralla Shire Local Strategic Planning Statement* (Uralla Shire Council 2021) sets out the economic, social and environmental land use needs over the next 20 years. The NSW Government has recognised Uralla Shire for renewable energy development. It is noted in the *Local Strategic Planning Statement* that Uralla has been chosen as a case study by the Zero Net Energy Town (Z-Net) initiative, to be Australia's first 100% renewable community and is supported by the NSW Government. Action 7.2.3 of the *Local Strategic Planning Statement* includes "support the development of small to large scale renewable energy project in appropriate locations"	The project is an opportunity to develop renewable energy production facilities within the Uralla LGA.

2.2 Project justification

2.2.1 Need for the project

In recent years, there has been a steady increase in the number of renewable projects that are generating electricity for the NEM, while more of the older traditional coal fired power stations have been retired and decommissioned. This transition from fossil fuel electricity generation to renewable generation will continue.

The Commonwealth, State and local governments have put in place plans, strategies and roadmaps, to progress and optimise consumer benefits through a transition of the energy market. The project aligns with these objectives (Section 2.1). In particular, the NSW Government is leading the development of REZs across NSW. Five REZs have been announced and EnergyCo has been appointed as the Infrastructure Planner for the New England REZ. The New England REZ is expected to deliver up to $24 billion in private sector and expected to support 2,000 operational jobs and 6,000 construction jobs.

2.3 Project site and surrounds

2.3.1 Local and regional community

i Local and regional community

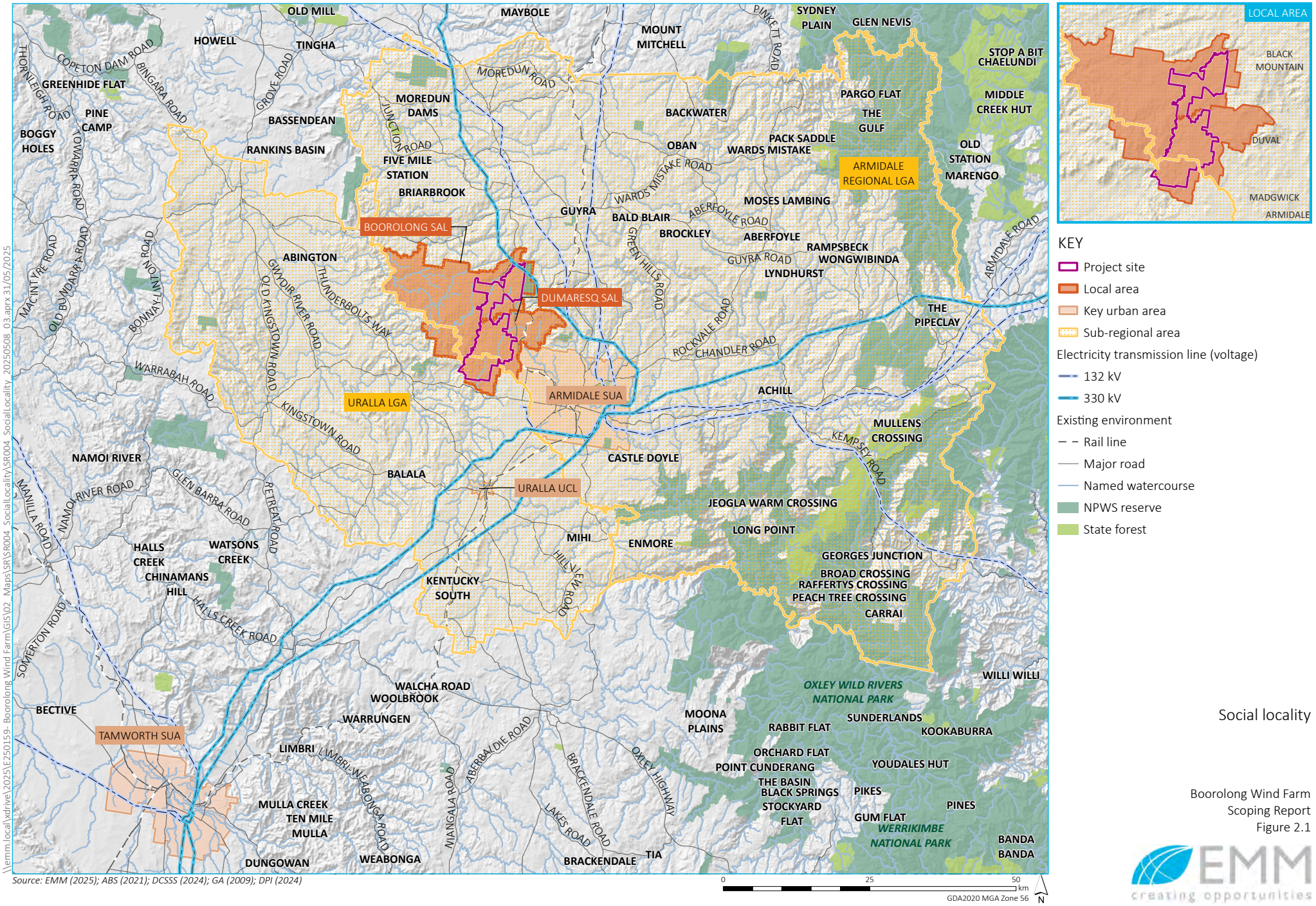
The project site is located in the rural and sparsely populated areas of Dumaresq and Boorolong. The nearest large urban centre to the project site is the township of Armidale, about 15 km to the south-east. The localities of Invergowrie and Saumarez Ponds are 5 km south and 8 km south-east, respectively. Urban centres of Uralla and Guyra are located about 26 km south and 24 km north of the project site respectively.

The project's social locality area considers local communities proximal to the project site, as well as those communities located within a broader, regional area (Figure 2.1). The project's social locality and community profile is further discussed in Section 6.7.1.

The region retains a rural character and is served by townships along major roadways.

There are several dwellings scattered within the project site. There are about 615 non-associated residences within approximately 7.8 km (visual study area) of a WTG, 13 associated residences between 1.7 km and 7.8 km (visual study area) from a WTG and eight associated residences within approximately 1.7 km (visual setback) of a WTG. Note, it is anticipated that the number of associated residences may increase during the environmental impact statement (EIS) phase. The visual study area and visual set back are further discussed in Section 6.5.3.

The project site is within the Aboriginal language group boundary of the Nganyaywana; also known as the Anaiwan and the Armidale Local Aboriginal Land Council area.



Source: EMM (2025); ABS (2021); DCSSS (2024); GA (2009); DPI (2024)

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Social locality

Boorolong Wind Farm
Scoping Report
Figure 2.1

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2.3.2 Natural and built features

i Natural environment

The project site is primarily comprised of agricultural land with extensive patches of remnant vegetation throughout and adjacent to the project site. A travelling stock reserve traverses the northern part of the project site. These reserves are areas of Crown land that have been set aside for the purpose of providing feed and water for travelling stock.

a National Parks

The nearest National parks, nature reserves and State forest areas are (Figure 1.1):

- Boorolong Nature Reserve, which borders a portion of the project site to the north-east
- Duval Nature Reserve, approximately 9 km east of the project site
- Bulagaranda Aboriginal Area (also known as Mount Yarrowyck Nature Reserve), approximately 3 km south-west of the project site.

b Culturally important landscapes

The project site contains a number of potentially culturally sensitive landforms that may have intangible (sacred sites) and/or tangible (archaeological) heritage. These include:

- creeks that may have been suitable for habitation (such as Boorolong Creek)
- rocky ridges and outcrops suitable for quarries, and rock shelters
- areas of remnant vegetation where scarred and carved trees may exist.

While extensive archaeological research has been conducted in the broader areas surrounding the project site, very little archaeological research has focused on the Boorolong region, including the project site. Research to date has been focused on the Boorolong Homestead, Boorolong Creek and areas to the south of the homestead where two carved trees with burials were known to exist in the nineteenth century.

The Aboriginal Heritage Information Management System (AHIMS) contains records of registered Aboriginal archaeological sites (Aboriginal objects) and declared Aboriginal places, as defined under the *National Parks and Wildlife Act 1974*. There are eight Aboriginal archaeological records in the northern half of the Project Site there are 10 Aboriginal archaeological records within proximity to the Project Site.

The Project Site is within proximity to the Gomeroi People Native Title Claim (NC2011/006) accepted for registration on 24 July 2023.

The Project Site is in proximity to areas of significance to Aboriginal People including Bulagaranda (Mount Yarrowyck) Aboriginal Area and cave painting site.

c Built environment

The project site is within agricultural landscapes used for livestock grazing, with scattered rural residences and agricultural structures.

The project site and surrounds contain built features including:

- electrical infrastructure

- road infrastructure
- residential properties
- agricultural infrastructure
- heritage items (refer to Section 6.10).

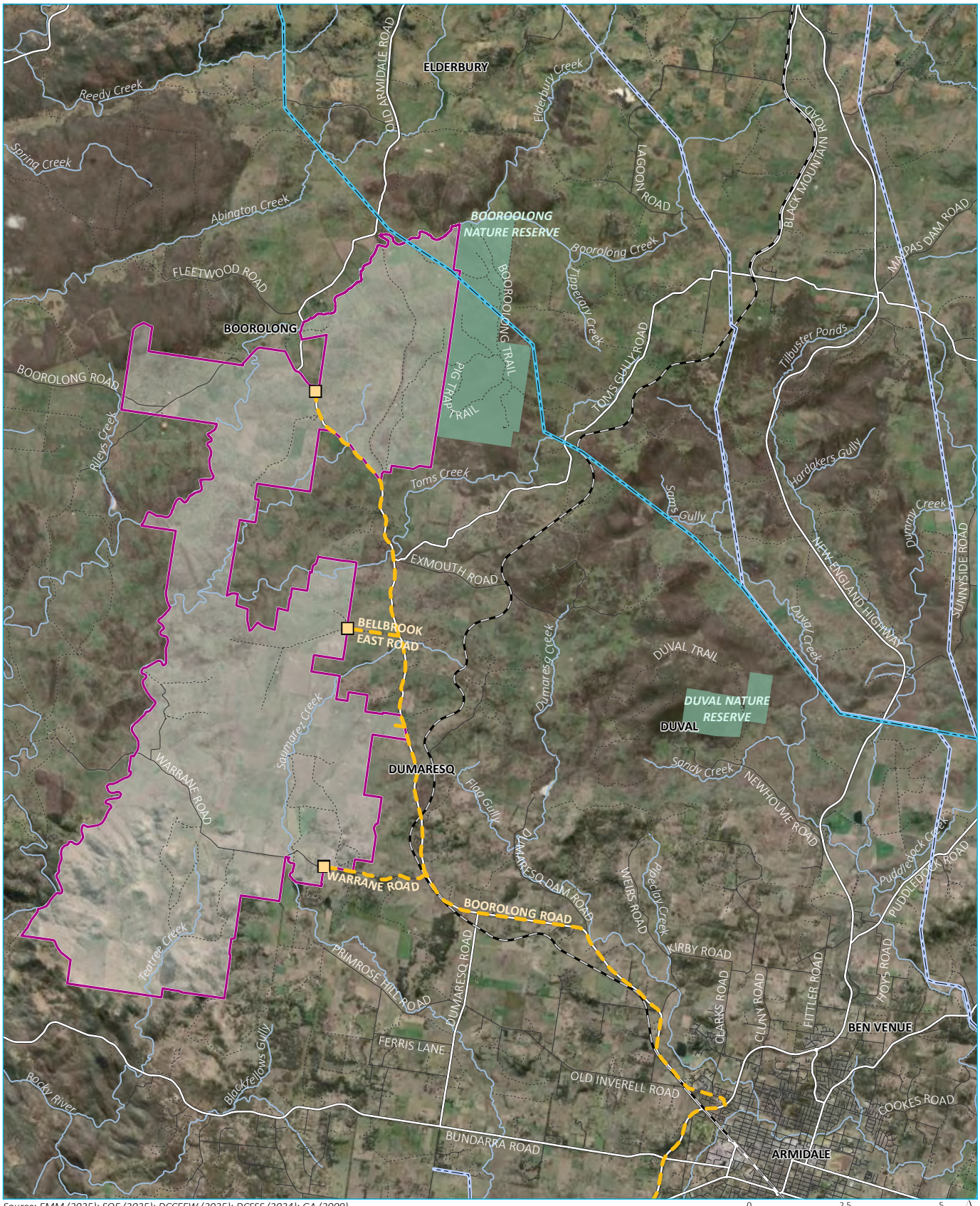
d Electrical infrastructure

The existing Armidale to Dumaresq 330-kV transmission line traverses the northern section of the project site.

e Road infrastructure

Existing road infrastructure surrounding the project site, which may be used to access the project site includes (Figure 2.2):

- New England Highway (A15)
- Boorolong Road
- Warrane Road
- Belbrook East Road.



Source: EMM (2025); SQE (2025); DCCEEW (2025); DCSSS (2024); GA (2009)

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KEY

- Project site
- Indicative site access point
- Traffic access route

Electricity transmission line (voltage)

- 132 kV
- 330 kV

Existing environment

- Rail line
- Rail line- disused
- Major road
- Minor road
- Vehicular track
- Named watercourse
- NPWS reserve

Project transport and access routes

Boorolong Wind Farm
Scoping Report
Figure 2.2

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2.4 Future projects and cumulative impacts

Relevant future projects within a radius of 50 km in accordance with the *Cumulative Impact Assessment Guidelines for State Significant Projects* (DPIE 2022d) are provided in Table 2.2 and Figure 2.3.

The 'relevant future projects' in Table 2.2 are State significant development (SSD), State significant infrastructure (SSI), designated development , likely to significantly impact the environment, EPBC Act controlled actions, and/or a major greenfield urban renewal development.

There are a number of operating, approved and proposed renewable energy developments, and infrastructure in the region to facilitate development of the REZ.

Cumulative impacts may include visual, traffic, social (including workforce and accommodation capacity), biodiversity and Aboriginal heritage impacts at a regional context. However, there may also be a cumulative benefit to local communities from the project and other developments in the region through the generation of jobs.

The EIS will carry out a cumulative impact assessment (CIA) in accordance with the CIA Guideline.

The scoping summary table (Appendix C) outlines the matters for which a CIA would be undertaken, and a CIA scoping table against identified relevant future projects is provided in Appendix H.

Table 2.2 Relevant future projects

Map reference number	Relevant future project	Project status[1]	Distance from project site (approximate, measured from closest points)
1	Armidale Battery Energy Storage System	Under assessment[2]	27 km SE
2	Armidale East Battery Energy Storage System	Prepare EIS[2]	30 km SE
3	Eastern Hub Firming Battery	Prepare EIS[2]	30 km S
4	Eathorpe Battery Energy Storage System	Prepare EIS[2]	20 km SE
5	Gara Battery Energy Storage System	Prepare EIS[2]	24 km SE
6	Armidale Solar Farm	Approved[3]	25 km SE
7	Olive Grove Solar Farm	Approved[3]	31 km SE
8	Oxley Solar Farm	Approved[2]	33 km S
9	Stringy Bark Solar Farm	Under construction[4]	33 km SE
10	Thunderbolt Community Solar Farm	Approved[3]	40 km S
11	Tilbuster Solar Farm	EIS approved[2] Mod 1 under assessment[2]	7 km E
12	Deeargee Solar Farm	Prepare EIS[2]	34 km S
13	Hillview Solar Farm	Prepare EIS[2]	45 km S
14	Salisbury Solar Farm (Walcha Energy Project)	Investigation Area	43 km S
15	Tilbuster 2 Solar Farm	Prepare EIS[2]	13 km E
16	Guyra Solar Farm	Under construction[3]	37 km NE

Map reference number	Relevant future project	Project status[1]	Distance from project site (approximate, measured from closest points)
17	Metz Solar Farm	Approved[2]	42 km SE
18	UNE Solar Farm	Operational[3]	9 km SE
19	New England Solar Farm (include mod 1 and mod 2)	EIS, Mod 1 & Mod 2 Approved[2]	17 km S
20	Thunderbolt Wind Farm	Approved[2]	32 km SW
21	Rangoon Wind Farm	In planning[3]	40 km NE
22	Armidale Regional Landfill	Mod 3 Approved[2]	25 km SE
23	UNE New Wright Block	Approved[2]	7 km SE
24	Hillgrove Mine	EIS approved[2] Mod 5 in planning[2]	38 km SE
25	Hillview Wind Farm	Prepare EIS[2]	45 km S
26	Uralla Energy Park	Investigation area[3]	30 km SW
27	Yarrowyck Wind Farm	Investigation area[3]	12 km W
28	Northern Tablelands Wind Farm	Investigation area[3]	5 km W (adjacent to the project site)
29	New England REZ Transmission Project	Prepare EIS[2]	NW (adjacent to the project site)
30	New England Highway Upgrade	Approved[2]	15 km E (main access)

Notes:

1. Status as of April 2025
2. Project status obtained from the NSW Major Planning Portal (Major Projects | Planning Portal - Department of Planning and Environment)
3. Project status from Energy Co's interactive map (EnergyCo's Interactive Map | Energy Corporation of NSW)
4. https://www.planningportal.nsw.gov.au/planning-panel/299mw-solar-farm

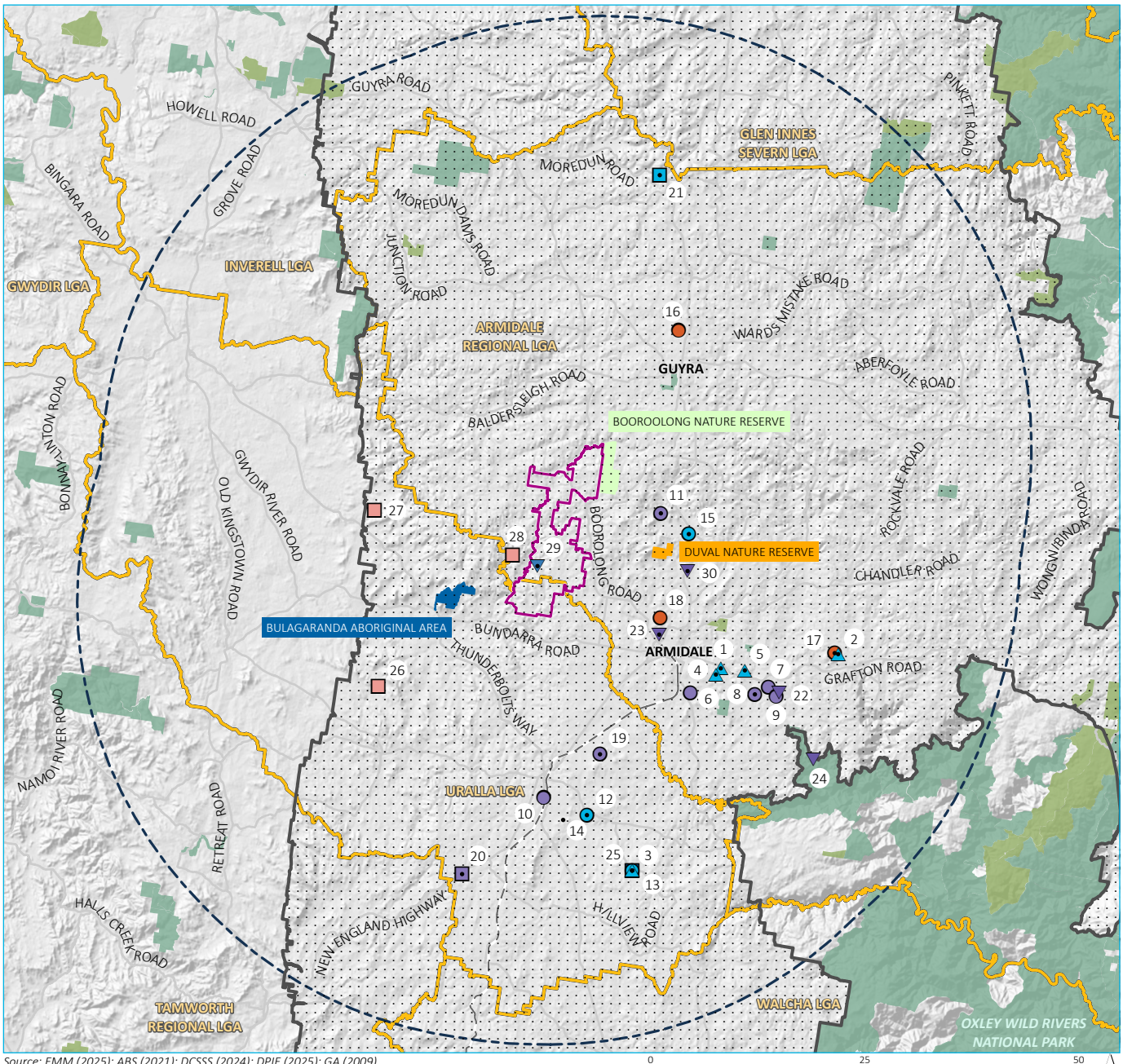
2.5 Agreements

The Applicant has entered neighbour agreements with a number of landholders to offset visual amenity, noise, traffic and other potential impacts caused by construction, operation and decommissioning of the project.

The Applicant has commenced discussions with the relevant stakeholders, and intends to enter further agreements with landholders and local councils to mitigate and offset the impacts of the development.

ID	Project	Project fuel source	Planning category
1	Armidale Battery Energy Storage System	Battery Storage	SSD
2	Armidale East BESS	Battery Storage	SSD
3	Eastern Hub Firming BESS	Battery Storage	SSD
4	Eathorpe BESS	Battery Storage	SSD
5	Gara BESS	Battery Storage	SSD
6	Armidale Solar Farm	Solar	DA
7	Olive Grove Solar Farm	Solar	DA
8	Oxley Solar Farm	Solar	SSD
9	StringyBark Solar Farm	Solar	DA
10	Thunderbolt Community Solar Farm	Solar	DA
11	Tilbuster Solar Farm	Solar	SSD
12	Deeargee Solar Farm	Solar	SSD
13	Hillview Solar Farm	Solar	SSD
14	Salisbury Solar Farm (Walcha Energy Project)	Solar	SSD
15	Tilbuster 2 Solar Farm	Solar	SSD

ID	Project	Project fuel source	Planning category
16	Guyra Solar Farm	Solar	DA
17	Metz Solar Farm	Solar	SSD
18	UNE Solar Farm	Solar	DA
19	New England Solar Farm EIS, MOD1 & MOD2	Solar	SSD
20	Thunderbolt Wind Farm	Wind	SSD
21	Rangoon Wind Farm	Wind	SSD
22	Armidale Regional Landfill	Other	DA
23	UNE New Wright Block	Other	SSD
24	Hillgrove Mine	Other	DA
25	Hillview Wind Farm	Wind	SSD
26	Uralla Energy Park	Wind, Solar, BESS	Investigation area
27	Yarrowyck Wind Farm	Wind	Investigation area
28	Northern Tablelands Wind Farm	Wind	Investigation area
29	New England REZ Transmission Project	Other	SSD
30	New England Highway Upgrade	Other	SSD



Source: EMM (2025); ABS (2021); DCSSS (2024); DPIE (2025); GA (2009)

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KEY

- Project site
- Project buffer- 50 km
- Booroolong Nature Reserve
- Duval Nature Reserve
- Bulagaranda Aboriginal Area
- State significant development

Wind infrastructure
- Prepare EIS
- In planning
- Approved

- Investigation area

Solar infrastructure
- In planning
- Approved
- Under construction
- Operational

Battery storage infrastructure
- In planning

Other
- Prepare EIS
- Approved
- Under construction

Existing environment
- Rail line
- Major road
- NPWS reserve
- State forest
- Local government area
- New England REZ

Nearby relevant future projects

Boorolong Wind Farm
Scoping Report
Figure 2.3

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3 Project description

3.1 Overview

The project includes the installation, operation, maintenance and decommissioning of up to 71 WTGs, BESS, up to three substations (including a switching substation) and associated ancillary and temporary infrastructure. The project will have a capacity to generate approximately 426 MW of electricity and BESS of approximately 150 MW for four hours (600 MWh).

The preliminary layout for all WTG, BESS, substations and grid connection locations is shown in Figure 3.1.

Note, the background to the project including the history of the project is discussed in Section 1.2.1.

3.1.1 Key project elements

A project summary based on preliminary design is provided in Table 3.1, with further details provided in Section 3.1.2 to Section 3.2.

Table 3.1 Project summary

Project element	Approximate dimensions/capacity	Quantity
WTGs		Up to 71
WTG height	Up to 270 m	
Rotor diameter	Up to 200 m	
Lowermost blade tip height above ground	48 m	
Tower (hub) height	148 m to 170 m	
WTG foundations (excavation size)	25 m diameter	Up to 71
BESS		1
Electrical plant compound area	Approximately 6 ha + 25 m Asset Protection Zone	
Capacity	150 MW for four hours (600 MWh)	
Ancillary Infrastructure		
WTG hardstands (adjacent to each WTG including blade laydown and component storage areas)	80 m x 50 m	Up to 71
Substation/switching station		
Electrical plant compound area	200 m x 100 m	Up to 3
Transmission lines (overhead/underground)		
Overhead (including potential connection to New England REZ Transmission Project)		Approximately 22 km
Underground		Approximately 81 km
Wind farm access tracks	9.5 m wide (6 m unsealed private roads plus up to 3.5 m drainage)	Approximately 100 km
Operations and maintenance compound	100 m x 100 m	Up to 2

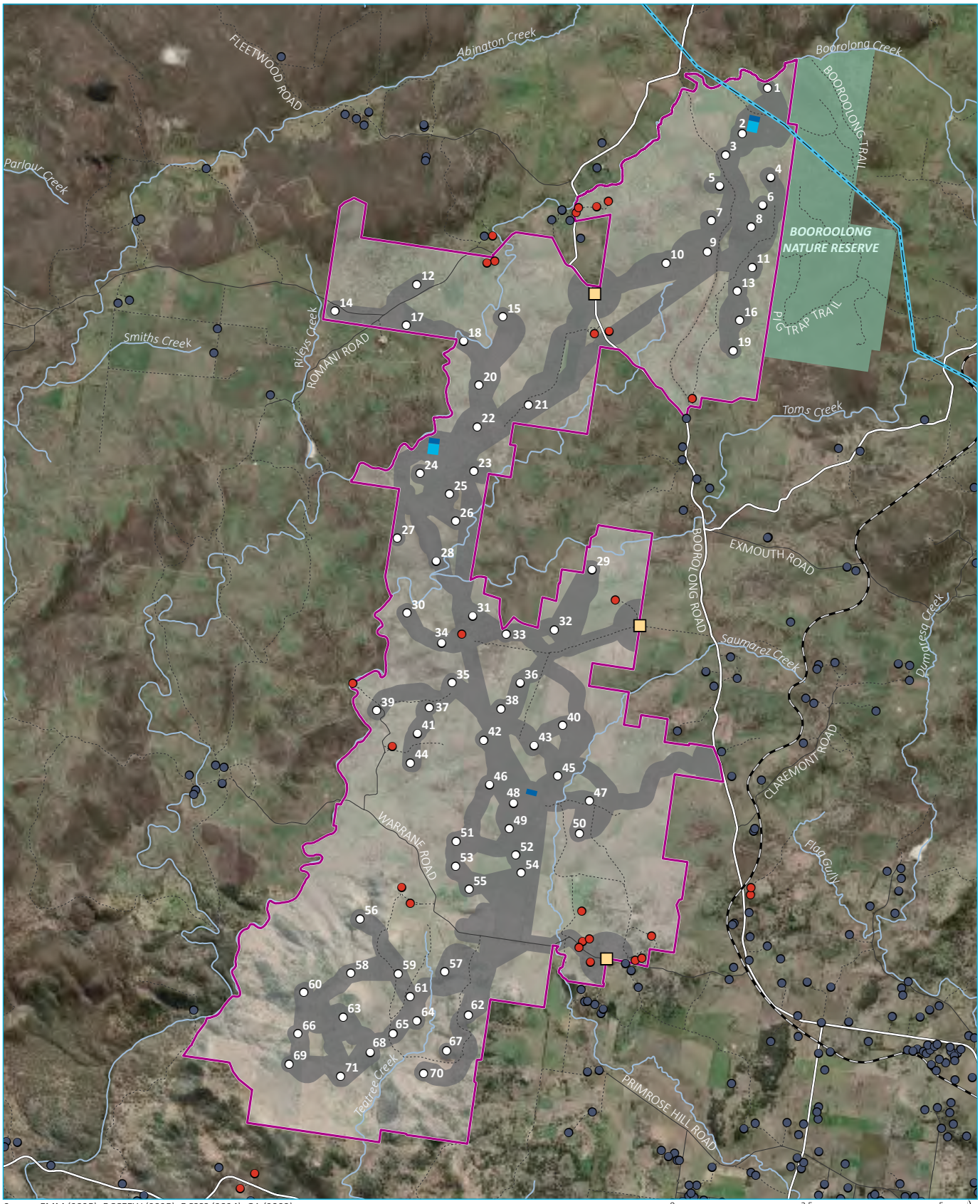
Project element	Approximate dimensions/capacity	Quantity
Permanent meteorological masts	Up to 170 m (height)	Up to 6
Telecommunication facilities, utility services and external road upgrades	Subject to detailed design	
Temporary facilities		
Site compound and office	300 m x 200 m	1
Concrete (or asphalt) batching plants	200 m x 100 m	Up to 2
Satellite construction compounds	50 m x 50 m	Up to 4
Stockpiles and materials storage compounds	Subject to design	-
Temporary laydown areas	Subject to design	-
Temporary meteorological masts	Subject to pre-operations assessment requirements	3
Temporary worker accommodation	Subject to detailed design	To be determined
Temporary water and quarry material sources and supply requirements	Subject to detailed design	To be determined

3.1.2 Project site

The project site (Figure 3.1) contains all project elements and Ancillary Infrastructure. It is approximately 9,475 ha. The project site is a conservative area for scoping assessments and contains a broad buffer around key elements of the project, including options for some project components.

The EIS will assess a development corridor within the project site. The application will seek approval for surface disturbance anywhere within the development corridor to provide the flexibility for the detailed design of the project (i.e. micro-siting), while allowing a detailed environmental assessment process to be completed with relevant constraints avoided and setbacks applied. Temporary and permanent meteorological masts may be located outside of the development corridor. Based on the current layout, the development corridor is approximately 3,486 ha.

The disturbance footprint will be the area within the development corridor in which the components of the project will be constructed following micro-siting of WTGs, internal access tracks and ancillary infrastructure. The development footprint presented within the EIS will be the indicative extent of the project's actual ground disturbance. It is estimated that the disturbance footprint will be approximately 750 ha.



Source: EMM (2025); DCCEEW (2025); DCSSS (2024); GA (2009)

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KEY

- Project site
- Development corridor
- Battery energy storage system (BESS)
- Substation
- Indicative wind turbine generator location
- Indicative site access point
- Associated receiver
- Non-associated receiver

Electricity transmission line (voltage)

- 330 kV

Existing environment

- Rail line- disused
- Major road
- Minor road
- Vehicular track
- Named watercourse
- NPWS reserve

Project site

Boorolong Wind Farm
Scoping Report
Figure 3.1

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3.1.3 Project phases and timing

The completion of technical designs and planning development activities, including approval for the project are expected to take approximately three years concluding in 2028 (2025–2028). There will be a period of approximately six months' pre-construction activities. Construction is expected to take approximately 24 to 36 months (2029–2032), with operation starting in 2032, timed to align with the grid connection availability. It is currently anticipated that the project will be constructed in one stage.

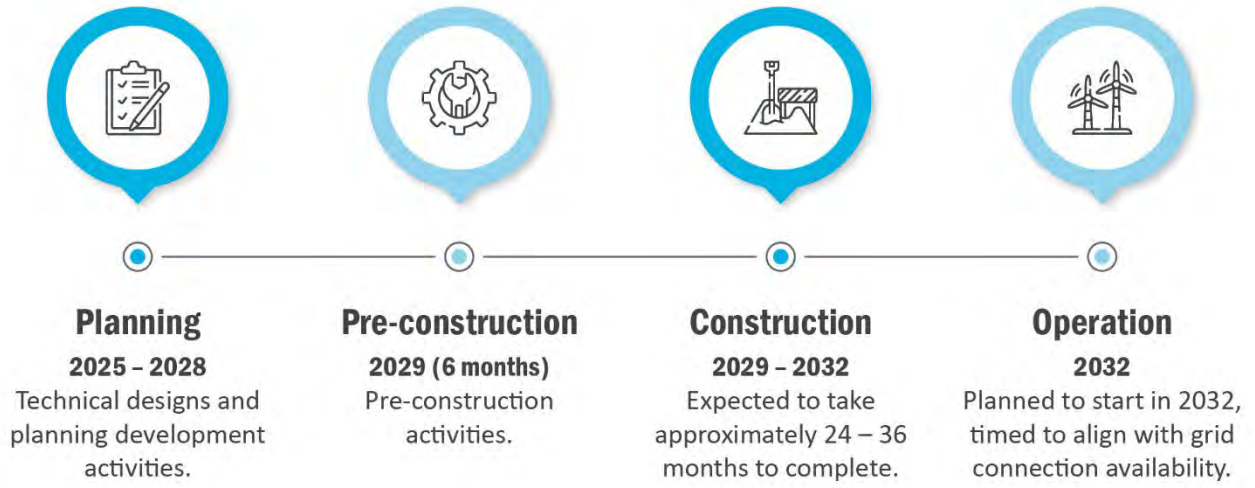


Figure 3.2 Indicative project timeline

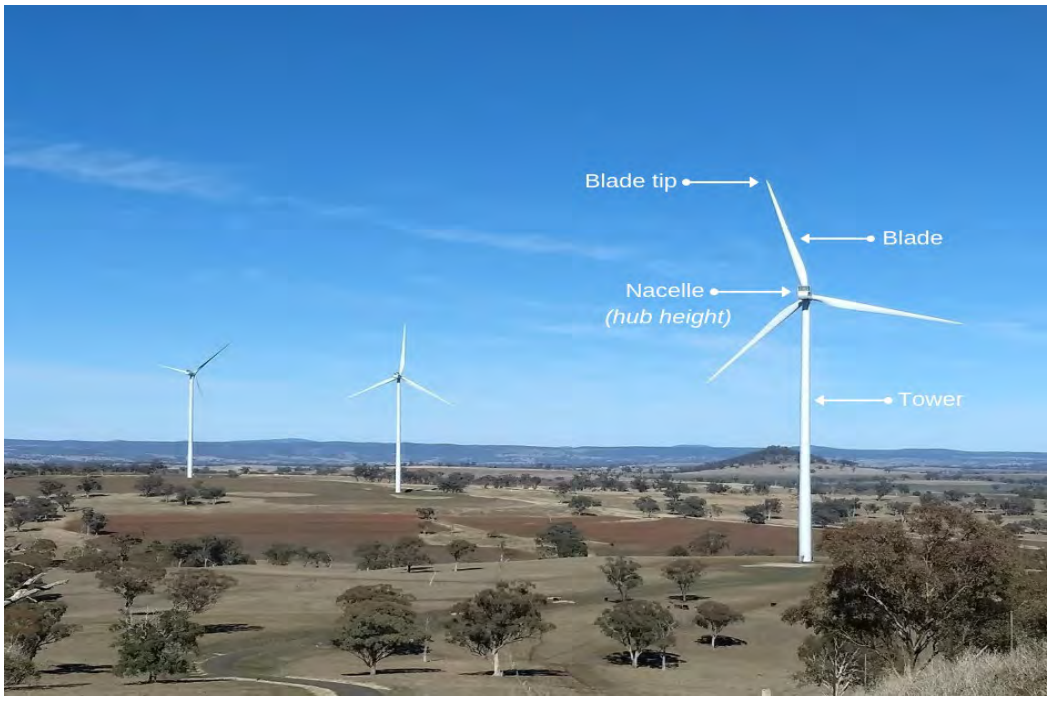
3.1.4 Wind turbine generators

The project will consist of up to 71 WTGs positioned to maximise the use of the available wind resource. Indicative dimensions of the WTGs and associated infrastructure are provided in Table 3.1. WTGs will be installed within the development corridor at final locations determined in accordance with the micro-siting restrictions identified in the EIS. The final locations will consider a range of factors including WTG technology, available grid capacity, landholder agreements, economies of scale, grid connection and environmental constraints. WTG components are described in Table 3.2 and illustrated in Photograph 3.1.

Table 3.2 Wind turbine generator components and description

WTG component	Description
Tip height	At the current scoping stage, the project has been designed to accommodate WTGs of up to 270 m in height. Final numbers and power output will be dependent on the final geographic footprint as well as outcomes of the various engineering, detailed design and procurement, environmental and social studies and are subject to change.
Foundation	Two types of foundation for the WTG may be required for the project based on the geotechnical ground conditions: slab (gravity) foundation or rock anchor foundation.
Towers	The supporting tower structure of a WTG is typically comprised of a reducing cylindrical tower made from either a welded steel shell, concrete, or a concrete steel hybrid, fitted with an internal ladder and lift.
Nacelle	The nacelle is the housing constructed of steel and fibreglass that is mounted on top of the tower and is typically around 15 to 18 m long, 4.5 m high and 4.5 m wide (depending on the WTG model). It typically encloses the gearbox, generator, transformers, motors, brakes, electronic components, wiring and hydraulic and lubricating oil systems. Weather monitoring equipment on top of the nacelle provides data on wind speed and direction for the automatic operation of the WTG. Obstacle hazard lighting is installed to the top of the nacelle if required.

WTG component	Description
Rotor	The WTG rotor drives the generator within the nacelle producing electrical output. In general, a larger rotor enables greater generation capacity, however site-specific wind conditions influence the rotor selected for installation at any given wind farm.
Blades	WTG blades are typically made from glass fibre reinforced with epoxy or plastic attached to a steel hub and include lightning protection inside the blade.
Generator transformer	WTGs produce electricity at lower voltage, which is then stepped up to medium voltage (33 kV or greater) by a transformer located in either the nacelle, within the base of the tower or adjacent to the base of the tower on a concrete pad.



Photograph 3.1 WTG components (Sapphire Wind Farm)

3.1.5 Battery energy storage system

Fluctuations in wind speed mean that wind energy generation is intermittent. A BESS mitigates these fluctuations by storing electricity when generated and discharging it when required, including during times of peak demand. BESS provides firming capacity to the NEM and assists grid stability by providing frequency control ancillary services, improving security of supply. The project BESS will have a capacity of up to approximately 150 MW and will have provision for up to four hours of storage (600 MWh).

A range of technologies will be considered for the BESS including lithium-ion battery, flow battery (vanadium, iron chloride or zinc) and air energy storage (compressed or liquified). The BESS technology (or technologies) will be determined and assessed during the preparation of the EIS. The final detailed design will be determined post-approval. The BESS will include inverters. These are bi-directional to convert between DC current and AC current (when exporting/exporting electricity).

The BESS will be located in a compound and comprised of gravel hardstand or concrete slab, buildings, shipping containers and other infrastructure to contain the chosen technology and to connect the BESS, WTG, and substations via underground and or overhead cables. The BESS compound may be a stand-alone facility or as a combined facility co-located with other project compounds. An indicative BESS location is shown in Figure 3.1.

3.1.6 Ancillary infrastructure

The project's ancillary infrastructure is summarised in Table 3.3.

Table 3.3 Proposed ancillary infrastructure

Ancillary infrastructure	Description
Permanent	
WTG hardstands	Hardstands are required adjacent to each WTG location for the assembly, erection, maintenance, repowering and/or decommissioning activities. Hardstands will be surfaced with gravel pavement material and maintained throughout the construction and operational life of the project.
Wind farm access tracks and drainage	Wind farm access tracks will be established within the development corridor for the construction, operation, repowering and/or decommissioning of the project. These will connect the public road access locations, WTGs, the BESS, substations, and other permanent and temporary facilities. Wind farm access tracks are planned to follow existing farm tracks where practicable.
Electrical plant compounds	Area containing either or both of battery storage and substation.
Electricity transmission lines	Underground and overhead.
Public road upgrades	Public road upgrades may be required based on the over-size over-mass (OSOM) transport requirements of large components, including blades. The need for upgrades will be determined and assessed during preparation of the EIS.
Operation and maintenance (O&M) compound	One or more permanent O&M compounds will be established for the day-to-day operation of the project. Each O&M compound may include lay down areas, site operations facilities and services buildings, workshop, storage, parking, and other facilities for operations staff.
Permanent meteorological masts	Meteorological masts, up to approximately 170 m tall, will be installed as part of monitoring WTGs performance.
Telecommunications	Telecommunications facilities will be installed as stand-alone components (e.g. masts) or on project infrastructure such as meteorological monitoring masts. Independent telephone communications facilities (optic fibre and microwave) will be installed between the substations.
Utility Services	The project proposes to connect to Transgrid's transmission network, and when not generating, will draw a small amount of electricity from the grid. Backup and emergency power at the substations may be supplied by a local 11-kV distribution line, on-site batteries and/or a standalone diesel generator. Water and sewer facilities will be designed as part of occupancy areas.
Signage	Traffic signage required as part of traffic safety for the project will be installed in compliance with relevant regulations and in accordance with any permits obtained for traffic management.
Temporary	
Worker accommodation	An accommodation strategy will be developed as part of the EIS.
Site compounds and offices, including amenities	The construction phase will require temporary infrastructure such as portable offices, toilet facilities and parking bays within temporary site compound or co-located with substations or other permanent infrastructure. Temporary construction compounds will be typical of that used at construction sites. (Similar infrastructure may be required during major maintenance activities during operations and during decommissioning.)

Ancillary infrastructure	Description
Laydown areas (including areas for equipment, stockpile and material storage)	Laydown areas will be arranged to maximise construction efficiency and minimise waste generation. These areas will most likely be co-located with permanent and ancillary infrastructure. Laydown areas will generally be used for: • material and equipment storage • stockpiling excess soils for reuse, steel or timber for tower or pole construction, vegetation matter or resource requirements • work areas to construct watercourse crossings for wind farm access tracks/cabling.
Construction resources	Water and quarry materials will be required for construction. These will be sourced from within the project site, in combination with off-site sources, based on availability and consultation with stakeholders.
Concrete (asphalt) batching plants with rock crushing facilities	Temporary rock crushing, and concrete or asphalt batching plants, will be used to produce material for WTG foundations and ancillary infrastructure.
Wind farm access tracks	Temporary wind farm access tracks used to access construction areas, WTGs, and infrastructure.
Other	Security fencing, lighting, signs and temporary meteorological masts will be required.

i Accommodation camp

Currently there is very limited availability of workers accommodation in the Armidale and Uralla LGAs. Accommodation options are essential to support every stage of the project, including during early construction works, with the greatest requirements during the main construction phase. A detailed accommodation strategy will be developed as part of the EIS that reviews existing availability in the context of the project's construction phases. This will include consideration of:

- fly camp (for site establishment activities)
- on-site a) lease or b) purchased land
- off-site a) lease or b) purchased land
- off-site updates of existing facilities and
- off-site local real estate and other commercial accommodation.

Based on the proposed construction workforce of approximately 350 FTE peak, and travel distances to the nearest regional hub, the current preference is for temporary short-term workers accommodation on the project site. Engagement with potential hosts and land acquisition planning is ongoing.

It is acknowledged that off-site accommodation may be preferred based on future stakeholder engagement. If this option is pursued, the EIS will assess the potential impacts arising from the off-site location.

ii Water and quarry materials sources

The project will seek to mitigate impacts to existing supply chains and reduce off-site haulage by using on-site water and quarry materials sources. This will be based on project construction water and quarry material demands derived from design, and will be subject to feasibility investigations including:

- an assessment of the infrastructure, capacity, suitability and access, for surface water and groundwater to source water on site
- a geotechnical investigation on the capacity, quality specifications and access, to source quarry materials on site.

There may be one or more water supply points within the project site. A water supply point will likely include an access track and turnaround, fill point (bore for groundwater or pump for surface water), with a standpipe. Temporary storage (tanks or ponds) or existing on-site storages may be used, facilitated by a network of pipes and pumps. A containerised water treatment may be installed if required based on the suitability of the water for the end use.

The requirements for quarry materials will be based on cut and fill earthwork calculations, pavement and foundations designs. It is likely that these materials will be sourced from one or more excavations or cuts ('borrow pits'). The borrow pit(s) will include a crushing and screening plant, stockpiling, testing facility and a drainage system.

The preferred water and quarry material sources (on-site and/or off-site) will be determined based on feasibility investigations and stakeholder engagement relating to potential on-site and off-site sources. The EIS will describe the preferred sources of water and quarry materials, and assess the potential positive and negative impacts of extraction and use of these resources.

3.1.7 Site access

Project components and construction materials will need to be delivered to the site using public roads. These components and materials will be transported from a port (most likely Port of Newcastle or the Port of Brisbane), local sites, and other parts of NSW. Construction workers will also need to use public roads to access the project site. Public road upgrades may be required to allow OSOM deliveries.

It is anticipated that access to the project site may be via one or some of the following roads from the New England Highway (A15):

- Boorolong Road (including Handel Street, Queen Elizbeth Drive and Martin Street)
- Warrane Road
- Bellbrooke East Road.

Access to the project site is expected to be from at least one of the access points shown in Figure 2.2.

The project site will continue to be accessed during operations and decommissioning. The transport routes and impacts to traffic will be determined during the preparation of the EIS.

3.2 Temporary activities and uses

The key temporary facilities and activities that may be required during construction, operation and/or decommissioning are described in Table 3.4.

Table 3.4 Temporary construction facilities

Key construction facilities	Description
Site compounds and offices, including amenities	The construction phase will require temporary infrastructure such as portable offices, toilet facilities and parking bays within temporary site compound or co-located with substations or other permanent infrastructure. Temporary construction compounds will be typical of that used at construction sites. (Similar, infrastructure may be required during major maintenance activities during operations and during decommissioning.)
Laydown areas (including areas for equipment, stockpile and material storage)	Laydowns areas will be arranged to maximise construction efficiency and minimise waste generation. These areas will most likely be co-located with permanent and ancillary infrastructure. Laydown areas will generally be used for: • material and equipment storage • stockpiling excess soils for reuse, steel or timber for tower or pole construction, vegetation matter or resource requirements • work areas to construct watercourse crossings for wind farm access tracks/cabling • temporary rock crushing, and concrete or asphalt batching plants.
Concrete (asphalt) batching plants with rock crushing facilities	Temporary rock crushing, and concrete or asphalt batching plants, will be used to produce material for WTG and ancillary infrastructure foundations and for use on wind farm access tracks.
Wind farm access tracks	Temporary wind farm access tracks used to access construction areas, WTGs, and infrastructure.
Accommodation facilities	Temporary worker accommodation is required with the general layout provided in Figure 3.1.
Other	Security fencing, lighting, signs and temporary meteorological masts will be required.

3.3 Rehabilitation and decommissioning

Each WTG is expected to have an operational life of 25 to 30 years. At this point, the project will be extended, 're-powered' or decommissioned. Before this time, BOWF may consider re-permit and repower, or decommission the project based on equipment performance, equipment condition and commercial viability.

If the project is repowered, redundant WTGs would be replaced with new WTG with updated technology. Additional assessment approvals, assessment and consultation are expected to be required if the project is to be re-powered.

3.4 Alternatives considered

3.4.1 'Do nothing' scenario

The 'do nothing' scenario would see the continued use of the project site for agricultural production (as will occur if the project is developed). Project impacts within the project site and surrounds would be avoided. However, the project would not deliver the benefits listed in Section 2.2, which include contributions to the development of the New England REZ and supporting Australia's and the State's transition towards clean and renewable sources of energy.

The local area and broader region would not realise the economic benefits to local and regional communities provided by direct employment opportunities, benefit sharing opportunities and flow-on effects.

3.4.2 Alternative location

The New England REZ has been identified by the NSW government as a priority area for renewable energy projects.

Alternatives to the project site, including other potential sites in NSW, were considered as part of the site identification process. As identified in Section 1.2.2, specific consideration was given to:

- estimated wind resource (speed and direction), marginal loss factors and grid connectivity
- commercial viability, including consideration of constructability and operability
- applicable Commonwealth, State and local legislation and guidelines to identify the relevant regulatory and permitting requirement
- environmental and planning constraints that would influence the design and development of the proposed layout, including siting of WTGs, access tracks and other project elements
- the social acceptability of the wind farm by the local community and stakeholders.

The primary constraint in considering locations elsewhere in NSW, including outside of the REZs, is the distance from the transmission network – both existing and planned. Alternatives which are further away from the existing 330-kV transmission line that traverses the north of the project site, need long transmission lines and easements to connect into the network, which come with additional environmental and social impacts.

3.4.3 Preferred option and alternative layouts

The project layout has gone through many changes since the project's inception, as described in Section 1.2.1. Environmental, civil constructability and social constraints have, and will continue to be key considerations during the refinement of the project. The current project layout has been the subject of an iterative design process that has been informed by landholder consultation, constraints and opportunities. The steps involved to reach the current layout are listed below:

1. Created an inclusion area within the project site, that takes into account all known constraints including (but not limited to) biodiversity, setback distances communication links, and terrain.
2. WTG layout for energy production has been optimised. This is calculated by inputting the known wind resource and wind turbine spacing into a computer model and running iterative calculations to maximise the capacity of the wind farm to produce energy within the inclusion area. This produced a layout with 88 x 270-m tip height WTGs.

3. Consideration of each WTG location with respect to impacts to non-associated residences, vegetation and/or terrain. WTGs were moved or removed, and 75 WTGs remained in this layout.

4. In consideration of feedback received on impacts to residences, detailed visual analysis was undertaken for some nearby residences. Based on height impact of WTGs, four WTGs were removed to reduce visual impacts to non-associated residences. As a result, four more WTGs were removed, and 71 WTGs remained in this layout.

While the total number of WTGs has increased from 70 to 71 since September 2022, the tip height of the WTG has also reduced from 300 m to 270 m. In addition and in consultation with the owner of the communications link that runs through the middle of the project site, the link has been removed as a constraint. Noise and visual impacts to non-associated residences have reduced significantly.

The project site and surrounds are highly suitable for renewable energy developments, aligning with the project objectives in Section 2.1. The underpinning selection factors for the project site included:

- positioning within the New England REZ
- landowner appetite for hosting project infrastructure
- a good wind resource
- generally flat topography and land area available to microsite infrastructure and avoid constraints (subject to further assessment)
- proximity to existing and proposed transmission infrastructure
- distance from sensitive receivers.

As described in Section 3.1.2, the final development corridor and disturbance footprint will be defined as part of the preparation of the EIS and will be informed by the outcomes of the key EIS technical assessments and stakeholder engagement. Key principals that will be adopted to continue avoid, minimise or offset the impacts of the project are identified in Section 1.2.

4 Statutory context

The key relevant statutory requirements for the project, having regard to the *Environmental Planning and Assessment Act 1979* (EP&A Act), other NSW and Commonwealth legislation, and environmental planning instruments are summarised in Table 4.1. This table has been set out in accordance with the *SSD Scoping Report Guidelines* and *State Significant Development – Preparing an Environmental Impact Statement* (DPIE 2022e).

Detailed consideration of relevant statutory requirements will be provided in the EIS.

Table 4.1 Statutory context of the project

Category	Relevance to the project
Power to grant approval	
EP&A Act and Planning Systems SEPP	Part 4 of the EP&A Act relates to development assessment and consent; Part 4, Division 4.7 relates to the assessment of development deemed to be significant to the State (or SSD). Section 4.36(2) of the EP&A Act states that a: ...State environmental planning policy may declare any development, or any class or description of development, to be State significant development. The Planning Systems SEPP identifies development that is SSD. Section 2.6(1) of the Planning Systems SEPP states: (1) Development is declared to be State significant development for the purposes of the Act if: (a) the development on the land concerned is, by the operation of an environmental planning instrument, not permissible without development consent under Part 4 of the Act, and (b) the development is specified in Schedule 1 or 2. The project meets both these requirements; it requires development consent, and is a development specified in Schedule 1 of the Planning Systems SEPP. Schedule 1 of the Planning Systems SEPP defines the following as SSD: Electricity generating works and heat or co-generation Development for the purpose of electricity generating works or heat or their co-generation (using any energy source, including gas, coal, biofuel, waste, hydro, wave, solar or wind power) that: (a) has an estimated development cost of more than $30 million. The project is development for the purpose of electricity generation and will have an estimated development cost of more than $30 million. Consequently, the project is SSD. The Minister for Planning and Public Spaces is the consent authority for the project. However, as per section 4.5(a) of the EP&A Act and section 2.7 of the Planning Systems SEPP, the Independent Planning Commission (IPC) may be the consent authority for the project if relevant criteria are met.
Permissibility	
State Environmental Planning Policy (Transport and Infrastructure) 2021	Under section 2.36(1) of State Environmental Planning Policy (Transport and Infrastructure) 2021, development for the purpose of electricity generating works, such as the project, may be carried out by any person with consent on any land in a prescribed rural, industrial or special use zone. The project study area is within two rural land use zones, RU1 Primary Production and RU2 Rural Landscape. Development for the purpose of electricity generating works is therefore permissible with consent.
Consistent approvals	
Overview	Section 4.42 of the EP&A Act outlines that the approvals listed below cannot be refused if necessary for carrying out an approved SSD, and which are to be consistent with the terms of the development consent for the SSD.

Category	Relevance to the project
An environment protection licence under Part 3 of the NSW *Protection of the Environment Operations Act 1997* (POEO Act)	The POEO Act regulates pollution to the environment and requires licences for environment protection including waste, air, water and noise pollution control. Section 48 of the POEO Act requires an environment protection licence (EPL) to undertake scheduled activities at any premises. Scheduled activities are defined in Schedule 1 of the POEO Act and include wind farms. An EPL will be sought in relation to the construction and operation of the project.
An approval under Section 138 of the NSW *Roads Act 1993*	Under section 138 of Part 9, Division 3 of the *Roads Act 1993*, a person must not undertake any works that impact on a road, including connecting a road (whether public or private) to a classified road, without approval of the relevant authority, being either Transport for NSW or the local council, depending upon the classification of the road. The interaction of the project with the local and regional road network will be addressed in the EIS. Should road upgrades or works within a designated road corridor be required, approval will be sought from the relevant authority.
Commonwealth approvals	
Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act)	The EPBC Act aims to protect matters of national environmental significance (MNES). If an action will, or is likely to, have a significant impact on any MNES, it is deemed to be a 'controlled action' and requires approval from the Commonwealth Environment Minister or the Minister's delegate. A search of the Commonwealth Protected Matters Search Tool indicates that there are no World Heritage Properties or National heritage places within the vicinity of the project investigation area. There is potential for Commonwealth listed threatened ecological communities, threatened species and migratory species to occur within the project site. Field surveys will be undertaken to determine whether the plant community types (PCTs) identified within the project site are representative of threatened ecological communities listed under the EPBC Act and whether threatened species habitat is present. The outcomes of these survey will be used to determine whether a referral to the Commonwealth Department of Climate Change, Energy, the Environment and Water is required.
Native Title Act 1993	The *Commonwealth Native Title Act 1993* recognises and protects native title rights in Australia. It allows a native title determination application (native title claim) to be made for land or waters where native title has not been validly extinguished, for example, extinguished by the grant of freehold title to land. Claimants whose native title claims have been registered have the right to negotiate about some future acts, such as mining or granting of a lease over the land covered by their native title claim. Where a native title claim is not registered, a development can proceed through mediation and determination processes, though claimants will not be able to participate in future act negotiations. There are no current native title claims relevant to the project site.
Civil Aviation Regulation 1988	Reporting of tall structures is required under the Civil Aviation Regulation 1988. A detailed assessment in accordance with the regulations, and consultation with the relevant agencies (including the Civil Aviation Safety Authority and Air Services Australia), will be undertaken as part of the preparation of the EIS.
Heavy Vehicle National Law	Approvals will be required for the transport of WTGs and associated infrastructure by OSOM vehicles. The OSOM transport requirements will be assessed via a route analysis as part of the EIS.
Approvals not required	
Overview	Section 4.41 of the EP&A outlines the following approvals, permits, etc. are not required for an approved SSD.
Fisheries Management Act 1994	A permit under the *Fisheries Management Act 1994* to block fish passage or dredge or carry out reclamation work on water land will not be required pursuant to section 4.41 of the EP&A Act.

Category	Relevance to the project
	The project will require work in water land to facilitate the upgrade of road watercourse crossings and/or to establish new crossings. These works will be undertaken in accordance with NSW DPI *Policies and Guidelines on Fish-Friendly Waterway Crossings* (undated)*, Policy and Guidelines for Fish Habitat Conservation and Management* (DPI 2013).
NSW Heritage Act 1977	An approval under Part 4, or an excavation permit under section 139 of *the Heritage Act 1977* will not be required pursuant to section 4.41 of the EP&A Act. Notwithstanding, there are no listed heritage items within the development corridor.
NSW National Parks and Wildlife Act 1979	An Aboriginal heritage impact permit under section 90 of the *National Parks and Wildlife Act 1974* will not be required pursuant to section 4.41 of the EP&A Act. There is potential for Aboriginal sites to occur within the development corridor. Any Aboriginal heritage sites will be avoided as far as practicable through the design process.
NSW Rural Fires Act 1997	A bushfire safety authority under section 100B of the *Rural Fires Act 1997* will not be required pursuant to section 4.41 of the EP&A Act. A bushfire assessment will be prepared in accordance with NSW Rural Fire Service (2019) *Planning for Bushfire Protection* as part of the EIS.
NSW Water Management Act 2000	A water use approval under Section 89, a water management work approval under section 90 or a controlled activity approval (other than an aquifer interference approval) under section 91 of the *Water Management Act 2000* pursuant to section 4.41 of the EP&A Act will not be required pursuant to section 4.41 of the EP&A Act. Construction work near or within watercourses within the development area will be required. These works will be carried out in accordance with the NSW *Guidelines for Controlled Activities*.
Pre-condition to exercising the power to grant approval	
Overview	An EIS will be prepared in accordance with relevant legislative requirements and guidelines. No pre-conditions to exercising the power to grant consent for the project are currently envisaged.
Mandatory matters for consideration – EP&A Act and Regulation	
Section 4.15 of the EP&A Act	Pursuant to section 4.15 of the EP&A Act, the consent authority must consider the following relevant matters for consideration: • relevant environmental planning instruments for the project including: – *State Environmental Planning Policy (Biodiversity and Conservation) 2021* – *State Environmental Planning Policy (Resilience and Hazards) 2021* – *State Environmental Planning Policy (Transport and Infrastructure) 2021* – other local environmental planning instruments • relevant development control plans • 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 • the public interest. The above will be considered in the EIS.
Mandatory considerations – Considerations under other legislation	
Biodiversity Conservation Act 2016 (BC Act)	The impact of the project on biodiversity values will be assessed in a biodiversity development assessment report (BDAR).

Category	Relevance to the project
Mandatory matters for consideration – State Environmental Planning Policies	
State Environmental Planning Policy (Resilience and Hazards) 2021 – Section 3.7	The EIS will consider the following relevant departmental guidelines: • Applying State Environmental Planning Policy No. 33 Hazardous and Offensive Development • Hazardous Industry Planning Advisory Papers (HIPAP) No. 3 – Risk Assessment and HIPAP No. 12 – Hazards.
State Environmental Planning Policy (Resilience and Hazards) 2021 – Section 4.6	The EIS will consider the potential for the project to impact on contaminated land.
Armidale Dumaresq Local Environmental Plan (LEP) 2012	Armidale Regional Council LGA is included in the Armidale Dumaresq LEP 2012. The EIS will consider: • the relevant objectives and land uses for RU1 zone • Clause 6.3 Earthworks.
Uralla Shire LEP 2012	The EIS will consider: • the relevant objectives and land uses for RU1 and RU2 zone • Clause 6.1 Earthworks.
Mandatory matters for consideration Development control plans	
Armidale Dumaresq Development Control Plan 2012	The EIS will consider: • section 2 Site Analysis and General Controls • section 5 Commercial and Industrial Development.
Uralla Shire Council Development Control Plan	The EIS will consider: • Part 4 Rural Development • Part 18 Large Scale Renewable Energy Development.

5 Engagement

5.1 Introduction

This chapter explains the engagement to date for the project; provides an early indication of community views of the project and describes what community engagement will be carried out during the preparation of the EIS.

SQE is committed to undertaking genuine and meaningful community and stakeholder engagement and consultation for the project. The communication and engagement objectives for the project are to:

- engage with the local community to seek feedback on the proposed project, to be integrated into project planning and design as far as practicable
- maintain communication to inform the community about potential impacts and benefits in a continuous, accurate and timely manner
- identify key stakeholders early for further engagement and provide various opportunities and mechanisms for SQE to meaningfully engage with all stakeholders
- develop a sound understanding of the potential social impacts of the project to assist in developing and implementing mitigation measures
- ensure the development team has a deep understanding of the local context of the project, including any local impacts that it may have or opportunities that the project could provide
- build and maintain BOWF's social licence within the community and among all stakeholders.

BOWF's approach to community and stakeholder engagement is multi-faceted, to ensure comprehensive engagement across all groups, utilising the skills of our various teams. Landholders and hosts engage directly with project teams. Broader stakeholder groups may be engaging with a wider group of staff with expertise, including First Nations engagement, government relations, media and communications and stakeholder engagement.

The first step in developing this relationship is to undertake robust stakeholder mapping and analysis to understand the needs of the community and to begin building early relationships. By consistently building on these relationships, BOWF maintains open and transparent communication with stakeholders throughout the project lifecycle to ensure community needs are considered.

BOWF has developed a Stakeholder Engagement Plan for the project. It outlines BOWF's understanding of the communities surrounding the project and our approach to community and stakeholder engagement. The plan also outlines the project's potential impacts and provides examples of opportunities that could be developed in consultation with local partners and communities depending on need.

The Stakeholder Engagement Plan for Boorolong Wind Farm can be found at: https://squadron-assets.spicyweb.net.au/main/BOWF/PDFs/BOWF-01-PLN-External-Stakeholder-Engagement-Plan-LIVE.pdf

BOWF has identified a range of key community stakeholders for the project which are outlined in Table 5 of the Boorolong Wind Farm Stakeholder Engagement Plan.

5.2 Engagement carried out

BOWF has been engaging with a broad range of stakeholders regarding the project since 2022. The project team has completed a variety of engagement activities with host landholders, surrounding neighbours, community interest groups, registered Aboriginal parties (RAPs), Council and relevant State and Commonwealth government members and agencies. The engagement undertaken to date is summarised in Table 5.1.

5.2.1 Project stakeholder engagement

Engagement activities for the identified stakeholders in Section 5 that have been undertaken have occurred in a variety of forms, including:

- six project newsletters (distributed via email, letterbox drop and posted on the website)
- 809 emails and 467 phone calls
- 257 face to face meetings
- two briefing letters to DPHI
- project announcements via website, letterbox drop and social media
- opportunities for stakeholders to visit Sapphire Wind Farm (operating), taken up by several members of the local community
- advertising and media for events and sponsorships
- BOWF website available since July 2022
- community information stalls at local events including the Armidale Show, Farming Futures Expo and the New England Renewable Energy Careers Expo
- two community survey questionnaires published in 2022 and April to May 2025
- three community drop-in days.

i Local residents and businesses

An overview of some of the engagement activities carried out with local residents and businesses is provided in Table 5.1.

Table 5.1 Engagement with local residents and businesses

Date	Engagement activity
Since September 2020	Host landowner engagement including group and individual meetings, emails and phone calls
July 2022	Project website launch
Since June 2022	Neighbour meetings
July 2022	Community survey (2 months)
Since June 2022	Six Community newsletters (as found on the BOWF website)
September 2022	Community drop-in sessions over two days Boorolong Local Area Committee
March to July 2022	Host landholders visit Sapphire Wind Farm (operational SQE wind site)
Since January 2023	Community sponsorship program
February 2023	Stall at the Armidale & New England Show

Date	Engagement activity
February to May 2023	Cultural Values Mapping exercise with 17 participants including RAPs and identified Elders (as described in Section 0)
Since February 2023	Engagement with Batting for Boorolong (B4B) (refer to Appendix B)
November 2023	Neighbours and community members visit Sapphire Wind Farm
July 2024	Stall at the Farming Futures Expo
August 2024	Introduction of new Project Manager
September 2024	Meeting with Batting 4 Boorolong committee and First Nations engagement
February 2025	Group meeting with host landholders
March 2025	Second community survey (2.5 months) New England Renewable Energy Careers Expo
June 2025	Third community information session

ii Council and government agencies

An overview of engagement activities carried out with the Council and government agencies is provided in Table 5.2.

Table 5.2 Engagement with Council and government agencies

Activity	Description		Stakeholders
Briefing letters	September 2022	To provide an overview of the project, process and timeline	Councils State MP Federal MP
Briefing letter		Outlining the project and requesting a scoping meeting	DPHI
Media release		Announcing the project and community open day	All
Website launch		Maintained and regularly updated on the Squadron Energy website	All
Meeting		Initial Scoping meeting with DPE (now DPHI) to introduce the project	DPHI
Meetings	Project introduction meeting discussed project description, environmental context, preliminary results, risks/concerns, future consultation – May 2022 Discussed methodology and preliminary land cat mapping issued to BCD for review and comment – August 2022		Conservation Programs, Heritage and Regulation Group (CPHR) (former BCD)
Meeting	Attended Boorolong LAC meeting – 13 August 2022		Boorolong Local Area Committee
Meeting	Initial meeting with DCCEW to introduce the Project – 7 March 2023		Department of Climate Change, Energy and Water (DCCEW)
Meetings Data sharing	Engagement via regular meetings, email and Ansarada data platform since April 2023		EnergyCo
Meeting	11 February 2025 – re-introduction of the project & discussion of NE REZ		Uralla Shire Council Mayor and staff
Meeting	14 March 2025 – re-introduction of the Project & discussion of NE REZ		Armidale Regional Council Mayor

Activity	Description		Stakeholders
Briefing letters	June 2025	Invitation to community drop-in session and to offer a briefing	Councils State MP Federal MP
Briefing letter		Outlining the revised project and requesting a scoping meeting	DPHI
Media release		Announcing community drop-in session	All
Meeting		18 June 2025 – scoping meeting	DHPI
Phone	August 2025	4 August 2025 – discussion on the BOWF project, vicinity of wind monitoring masts and proposed WTGs to Boorolong Nature Reserve.	National Parks and Wildlife Service (NPWS)
Email		4 August 2025 – email to arrange a meeting in Armidale on 19 August 2025	NPWS

BOWF has applied the advice from National Parks and Wildlife Service that WTGs should be sited more than 200 m plus blade length from the edge of the closest National Park. BOWF has made arrangements for further engagement with the National Parks and Wildlife Service Armidale branch relating to the WTG layout, impacts to the Boorolong Nature Reserve and proposed mitigations during the EIS phase.

5.2.2 Aboriginal community consultation

Initial consultation with First Nations stakeholders for the project was undertaken in early 2023 as per the NSW *Aboriginal Cultural Heritage Consultation Requirements for Proponents* (DECCW 2010). This included:

- contact of regulatory bodies and other organisations with contact details of relevant First Nations stakeholders for the wider region
- placement of a notification in the Armidale Express newspaper on 13 January 2023
- provision of invitation to register to all identified Aboriginal Parties (46 parties were identified)
- registration of Aboriginal parties declaring an interest in the Project (12 parties declared an interest)
- initial engagement with local First Nations community as part of the development of a Cultural Values Mapping assessment for the project and the wider region (Clarke 2023) (17 participants including RAPs and identified Elders).

The First Nations participants in the cultural values mapping component of the project included members of RAPs who had expressed an interest in finding out more about the project, in addition to senior Anaiwan knowledge-holders who had long experience with being consulted on heritage site projects within the New England region. The cultural values mapping involved workshops, oral interviews and fieldtrips to locations relevant to the project.

Fieldwork entailed a bus excursion for all participants to visit identified locations with Aboriginal heritage values. This stage was also intended to provide the First Nations participants with an overview of the project's extent. Following the fieldtrip, interviews were conducted with senior Anaiwan knowledge-holders connected to the Armidale region.

Nēwara Aboriginal Corporation, a non-profit Aboriginal community organisation committed to the reclamation and revival of Anaiwan language, culture, history, and traditional practices, is a nearby neighbour to the project. Engagement has begun on identifying how we can work together in relation to this project and their goals.

BOWF has recently begun refreshed consultation given development of the project was temporarily paused during 2023 to early 2024 as explained in Section 1.2.1. The following Aboriginal stakeholders have been consulted with in 2024–2025:

- Armidale Aboriginal Land Council
- The Coalition of Registered Aboriginal Parties (RAPs)
- Newara Corporation
- Armidale Aboriginal Medical Services
- Murrawin Consultancy.

5.3 Feedback received

5.3.1 Summary of community feedback received

A summary of the feedback received from the consultation and engagement undertaken to date is summarised in Table 5.3.

In February 2023, a community group "Batting for Boorolong" (B4B) was formed. Details of engagement carried out with B4B is provided in Appendix B.

Table 5.3 Stakeholder key topics raised during engagement to date

Stakeholder type	Key theme/issue raised during engagement to date	Stakeholder view category (grouped per SSD guidelines)
Host landholders	• Visual & noise impacts • Biodiversity • Community attitudes • Biosecurity • Project layout/design • Avoidance where possible of local roads • Decommissioning/repowering • Transmission • Bushfire risk management • Legal/agreement negotiation • Land use	• Strategic context • Alternatives considered • Key matters to be assessed during preparation of the EIS
Neighbours and community	• Visual & noise impacts • Project layout/design • Biodiversity • Choice of project location • Decommissioning/repowering • Use of local roads • Transmission • Bushfire risk management • Property values • Legal • Stakeholder engagement approach • Land use • Legal/agreement negotiation • Impacts of REZ	• Strategic context • Alternatives considered • Community engagement during preparation of the EIS • Key matters to be assessed during preparation of the EIS • Issues beyond the scope of the project or not relevant

Stakeholder type	Key theme/issue raised during engagement to date	Stakeholder view category (grouped per SSD guidelines)
Council	• Impacts of REZ • Workforce accommodation • Biodiversity • Community benefits • Skills training • Use of local roads and resources • Biodiversity • Waste management	• Cumulative impacts • Statutory issues • Key matters to be assessed during preparation of the EIS
First Nations Stakeholders	• Employment • Skills/training • Land management • Biodiversity offset credits • Heritage • Noise and visual • Benefits of renewable energy	• Community engagement during the preparation of the EIS • Key matters to be assessed during preparation of the EIS
Mr Brendan Moylan, State MP	• Social and economic outcomes	• Community engagement during the preparation of the EIS
Mr Barnaby Joyce, Federal MP	• No feedback received	-
Local business	• Skills/training • Workforce accommodation • Business opportunities • REZ cumulative impacts • General update	• Strategic context • Community engagement during the preparation of the EIS
Community groups	• Community sponsorship • Noise and visual • Stakeholder engagement approach • Land use • Biodiversity • Traffic and access • Heritage • Benefits of renewable energy	• Community engagement during the preparation of the EIS • Key matters to be assessed during preparation of the EIS
Wider community (residents of Armidale and Guyra)	• Noise and visual • Stakeholder engagement approach • Land use • Biodiversity • Traffic and access • Legal • Project design	• Community engagement during the preparation of the EIS • Key matters to be assessed during preparation of the EIS

Stakeholder type	Key theme/issue raised during engagement to date	Stakeholder view category (grouped per SSD guidelines)
Other Agencies: • Transport for NSW • Transgrid • Conservation Programs, Heritage and Regulation Group (CPHR)	• Noise and visual • Stakeholder engagement approach • Land use • Biodiversity • Traffic and access • Heritage • Benefits of renewable energy • Community benefits • Economy • Project design	• Community engagement during the preparation of the EIS • Strategic context • Key matters to be assessed during preparation of the EIS

5.3.2 Community values survey

A community values survey was open between 18 July and 3 October 2022. The purpose of the survey was to gain an understanding from the broader community of the potential social impacts and benefits of the project. The survey was advertised through SQE website and social media platforms. The survey received 179 responses, with 93.7% identifying as a resident of the region and 26.4% as a business owner. Of the respondents, 55.4% resided in Armidale, 9.7% in Boorolong, 7.4% in Dumaresq and 6.3% in Invergowrie, with the remainder spread across other localities in the region including Guyra, Kelly's Plains and Uralla.

In addition, a community values survey was advertised in 2025 for the broader community to provide feedback between 8 April 2025 and 12 June 2025 (https://www.surveymonkey.com/r/KJRFBY6). A range of promotion methods were used, including an online link available at in-person locations, the SQE project website and social media platforms. The survey was also available at in-person community information session on 12 June 2025. The survey received 69 responses of which 51 were completed online and an additional 18 hard copy responses completed at the in-person community information session. There were 64% of respondents who were residents of the region and 9% identified as business owners. Respondents were asked to provide their postcode. Of the respondents, 61% resided in 2350 (Armidale, Dumaresq, Invergowrie, Boorolong), with the remainder spread across other localities in the region including Guyra, Kelly's Plains and Uralla.

The following sub-sections summarise the feedback received from the community values survey in 2025.

i Project support

The 2025 survey requested respondents to indicate whether they were supportive or opposed to the project and the reasons why they held that opinion. Overall, 27.5% of respondents stated that they were supportive or strongly supportive of the project whilst 43.5% identified that they were opposed or strongly opposed, with 5.8% stating they were neutral. Approximately 23% of respondents did not indicate their views on the project.

Reasons provided for project support included:

- contribution to renewable energy production
- economic benefits
- cumulative benefit to climate change and the environment
- improved reliability for the electricity grid
- generation of employment
- minimal impact on wildlife, pollution and the landscape in comparison to other technologies
- investment in the local community and regional area.

Reasons for project opposition included:

- amenity concerns relating to noise and visual impacts
- proximity of the project to residences
- impacts on wildlife and the natural environment
- WTG height (specifically relating to visual impacts)
- lack of consultation.

ii Perceived impacts and benefits

The 2025 survey provided respondents with a list of potential concerns and benefits typically associated with large energy projects and requested they select topics that apply to their concerns, and what benefits they perceive could be generated by the project.

Potential impacts which had the highest number of responses included:

- effects on flora and fauna
- waste production and management
- traffic
- noise
- visual amenity.

Potential benefits which had the highest number of responses included:

- clean energy
- road upgrades
- investment in the local community.

iii Comparison between 2022 and 2025 feedback

Overall, there was a change in sentiment between the community survey in 2022 and in 2025. The 2022 survey identified 41.4% of respondents were supportive or strongly supportive of the project whilst 49.7% of respondents were opposed or strongly opposed, with 8.9% stating they were neutral. In comparison to community survey feedback in 2025, support for the project in 2025 dropped to 27.5%, whilst 43.5% of respondents were opposed or strongly opposed.

In 2022, respondents were primarily concerned about traffic, noise and visual amenity impacts. These concerns were still reflected in the 2025 responses. In addition to these concerns, respondents in 2025 identified concerns around waste management and social licence. A number of respondents in 2025 noted in the open response questions that they felt as though they have not been appropriately consulted about the project.

The most common theme from both the 2022 and 2025 surveys were potential impacts relating to wildlife and the environment, with over half of respondents in 2025 indicating concerns for flora and fauna. These concerns were centred around potential impacts to local wildlife including koalas, and bird strike. Concerns were also commonly centred around visual amenity, attributed to the existing pristine landscape and the proximity of turbines to houses.

This data provides opportunities for community concerns to be addressed in the next phase of engagement.

5.4 Engagement to be carried out

BOWF will continue to engage and consult with all identified stakeholders throughout the EIS process. This ongoing consultation will be guided by the project's Stakeholder Engagement Plan (SEP) and in accordance with relevant legislation and guidelines (listed in section 1.6 of the SEP). Of note, BOWF has committed to the voluntary establishment of a Community Consultative Committee (CCC) under the standard conditions specified by DPHI.

The SEP can be found on the project's website (www.boorolongwindfarm.com.au). The feedback and participation from engagement and consultation activities will be used to further inform the environmental and social impact assessments for the project. Key issues identified in Chapter 5 and the associated technical reports will help to inform targeted engagement and consultation. Proposed engagement is included in Section 3.5 of the project's SEP.

6 Proposed assessment of impacts

This chapter identifies the matters requiring further assessment in the EIS and the proposed approach to assessing each of these matters.

6.1 Preliminary environmental assessment

The following factors were considered when identifying the matters requiring further assessment in the EIS:

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

The scoping summary table in Appendix C.1 categorises the matters requiring further assessment in the EIS by the level of assessment required (detailed or standard) in accordance with the *State Significant Development Guideline – Preparing a Scoping Report* (DPIE 2022). Definitions for levels of assessment and the type of assessment proposed for each matter is summarised in Table 6.1. The matters requiring no further assessment in the EIS have been listed in Table 6.1 and an explanation of why no further assessment is necessary is detailed in Appendix C.2.

For environmental matters with residual impacts remaining post avoidance and minimisation measures being implemented during design, draft management plans will be prepared as part of the EIS to protect environmental values.

Table 6.1 Level of assessment required

Level of Assessment	Definition	Environmental/social matter
Detailed	These environmental aspects have been identified as requiring detailed studies and investigations carried out by technical specialists as the potential impact may be significant or involve uncertainties.	• Biodiversity (native vegetation, fauna, and aquatic ecology) • Aboriginal heritage • Amenity (noise and vibration) • Amenity (visual and landscape) • Traffic and transport (property access and road network) • Social (health, safety, housing availability and community benefits)
Standard	These environmental aspects will also require assessment by a technical specialist; however, are unlikely to result in significant impacts, generally well understood, easy to predict and capable of being compliant to relevant standards via mitigation measures.	• Economic (natural resource use, livelihood, opportunity cost and economic benefits) • Water • Aquatic ecology • Historical heritage • Air quality (particulate matter, gases and atmospheric emissions) • Land and soils (stability, topography, geology and land capability) • Hazards and risks (aviation safety, bushfire, health, telecommunications, blade throw) • Waste (resource use and waste management)

Level of Assessment	Definition	Environmental/social matter
Matters requiring no further assessment	These matters have been identified as not requiring any further detailed or standard assessment due to no or minimal impact.	• Amenity (odour) • Hazards and risks (hazardous and offensive development) • Hazards and risks (coastal hazards)

6.2 Biodiversity

6.2.1 Existing environment

The project site is located within the New England Tablelands Bioregion, within the Moredun Volcanics, Bundarra Downs and Armidale Plateau sub regions (Interim Biographic Regionalisation for Australia). The New England Tablelands Bioregion is characterised by stepped plateaus of hills and plains.

The Moredun Volcanics sub region is characteristic of an undulating plateau sitting at 1,100 m Australian Height Datum (AHD), with a steep western slope and rugged hills. The Bundarra Downs sub region is characterised by undulating to low hilly country with dendritic drainage patterns. The Armidale Plateau sub region is characterised by undulating hilly plateau, and a stepped landscape across basalt flows, broad valleys, that steepen to the east.

The project site is primarily comprised of agricultural land with extensive patches of remnant vegetation throughout and adjacent to the project site.

Information regarding vegetation communities, flora and fauna species was obtained from publicly available sources. These investigations informed the preliminary design of the project and have been used to determine the required level of biodiversity assessment in the EIS.

There are 35 threatened fauna species and 12 threatened flora species (under the BC Act and/or EPBC Act) predicted to occur within 10 km of the project site.

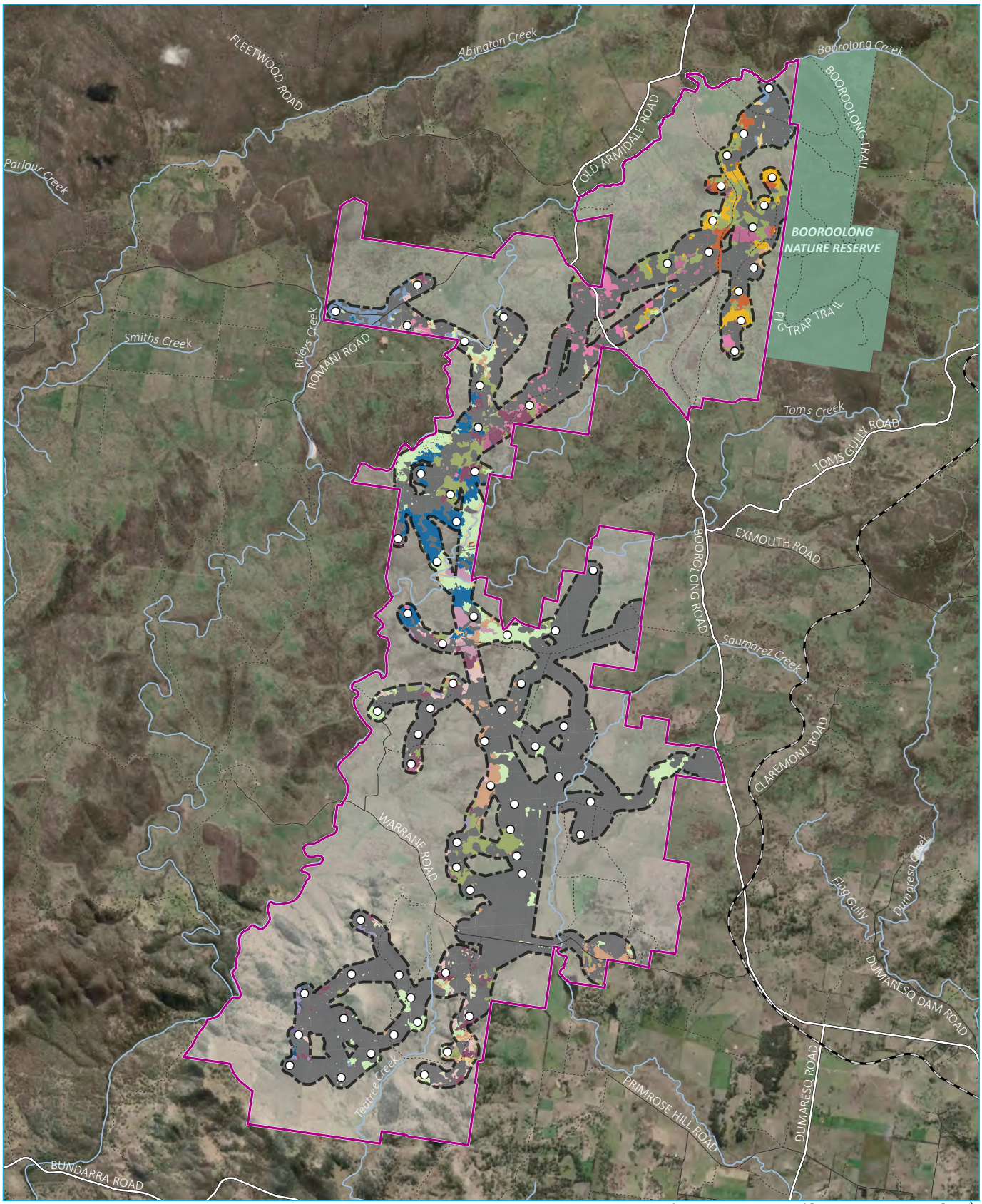
i Plant community types

The desktop biodiversity assessment, based on the State Vegetation Type Mapping (SVTM) (DCCEEW 2024), identified vegetation communities potentially occurring within the project site. This identified 17 plant community types (PCTs) (Table 6.2 and Figure 6.1). Of these PCTs, there is potential for threatened ecological communities to occur in five of the 17 PCTs. The area of each PCT mapped within the development corridor is listed in Table 6.2.

Table 6.2 PCTs in the project development corridor

PCT*	Development corridor (ha)
PCT 0 – Non-native vegetation	2,370.04
PCT 3339 – Guyra Basalt Snow Gum Woodland	33.16
PCT 3344 – New England Ribbon Gum Grassy Forest	79.32
PCT 3351 – Armidale Creekflat Snow Gum Woodland-Scrub	45.00
PCT 3352 – Armidale Quartz Hills Stringybark Forest	62.23
PCT 3353 - Guyra Silvertop Stringybark Moist Forest	220.91
PCT 3359 – New England Hills Stringybark-Box Woodland	225.33
PCT 3363 – Western New England Blakelys Red Gum-Box Grassy Forest	35.60
PCT 3702 – Northwest New England Ranges Caleys Ironbark Woodland	120.77
PCT 3710 – Western New England Hills Orange Gum-Ironbark Forest	1.05
PCT 3722 – Western New England Box-Tumbledown Gum Grassy Forest	17.75
PCT 3723 – Western New England Panic-Wiregrass Grassland	0.97
PCT 3725 – Western New England Ranges Orange Gum-Blackbutt Forest	53.45
PCT 3727 – Western New England Silvertop Stringybark Forest	26.29
PCT 3728 - Western New England Hills Blackbutt-Stringybark Forest	59.00
PCT 3729 - Western New England Youmans Stringybark Shrub Forest	25.90
PCT 3855 - Western New England Rocky Granite Low Woodland	106.25
PCT 4142 - New England Hills Red Gum-Stringybark Shrub Forest	2.75
Total (ha)	**3,485.74**

Note: * Map unit as per Vegetation of Guyra 1:100,000 VISID_561 (DPIE 2010)



Source: EMM (2025); DCCEEW (2025); DCSSS (2024); GA (2009)

0 2.5 5 km

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KEY

- Project site
- Development corridor
- Indicative wind turbine generator location

Plant community type (NSW statewide mapping)

- 3339 | Guyra Basalt Snow Gum Woodland
- 3344 | New England Ribbon Gum Grassy Forest
- 3351 | Armidale Creekflat Snow Gum Woodland-Scrub
- 3352 | Armidale Quartz Hills Stringybark Forest
- 3353 | Guyra Silvertop Stringybark Moist Forest
- 3359 | New England Hills Stringybark-Box Woodland
- 3363 | Western New England Blakelys Red Gum-Box Grassy Forest
- 3702 | Northwest New England Ranges Caleys Ironbark Woodland
- 3710 | Western New England Hills Orange Gum-Ironbark Forest
- 3722 | Western New England Box-Tumbledown Gum Grassy Forest
- 3723 | Western New England Panic-Wiregrass Grassland
- 3725 | Western New England Ranges Orange Gum-Blackbutt Forest
- 3727 | Western New England Silvertop Stringybark Forest
- 3728 | Western New England Hills Blackbutt-Stringybark Forest
- 3729 | Western New England Youmans Stringybark Shrub Forest
- 3855 | Western New England Rocky Granite Low Woodland
- 4142 | New England Hills Red Gum-Stringybark Shrub Forest
- Not native

Existing environment

- Rail line - disused
- Major road
- Minor road
- Vehicular track
- Named watercourse
- NPWS reserve

Plant community types

Boorolong Wind Farm
Scoping Report
Figure 6.1

EMM
creating opportunities

a Threatened flora and fauna

A search for threatened species using the Protected Matters Search Tool (PMST) and BioNet for the project site (with a 10 km buffer) and a literature review identified 12 threatened flora species and 35 threatened fauna species listed under the BC Act and/or the EPBC Act (Figure 6.2).

b Matters of National Environmental Significance

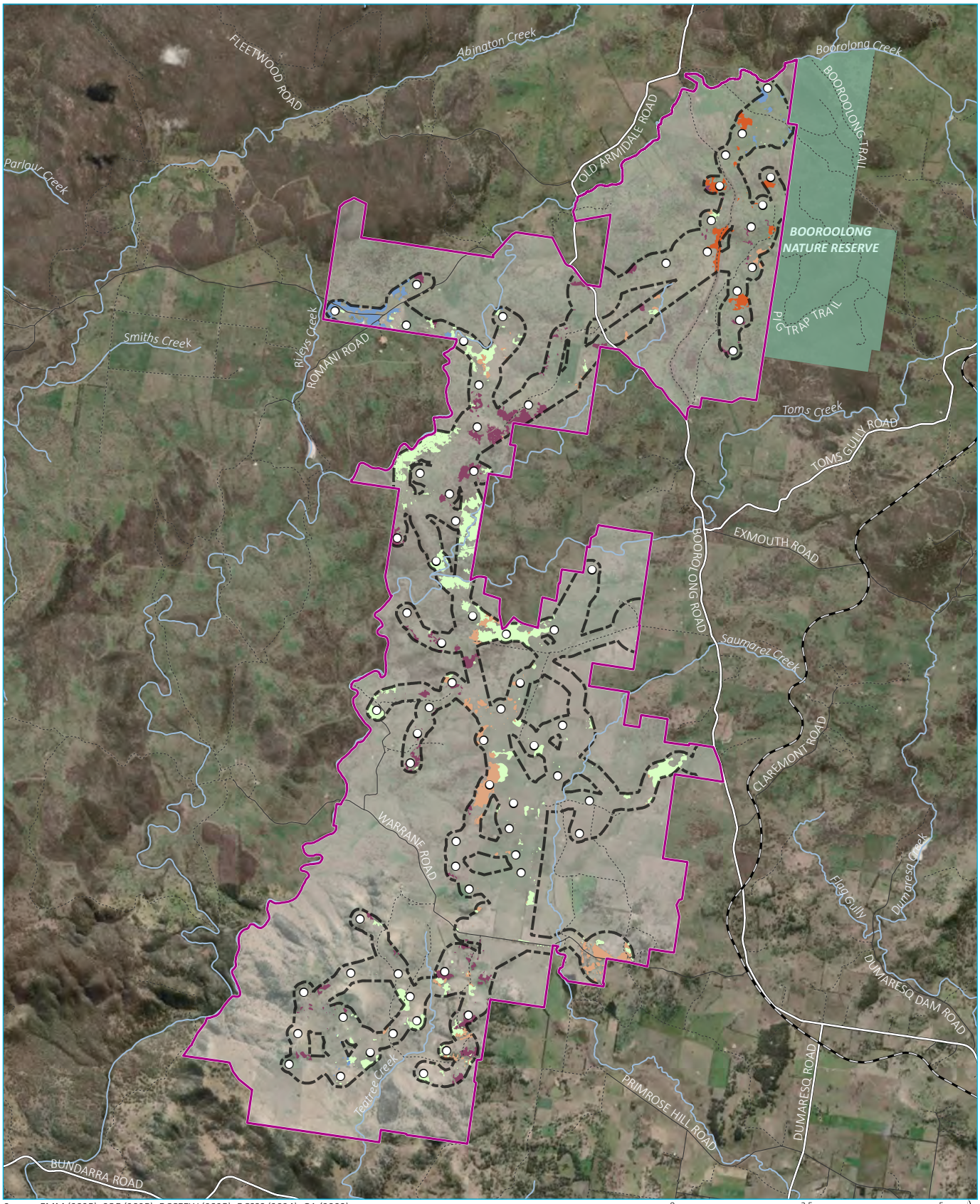
The results of the Commonwealth PMST search of the project site, with a 10 km buffer, are summarised in Table 6.3 and the PMST report is provided in Appendix D.

Table 6.3 Matters of national environmental significance

Scientific name	Common name	Status
Listed threatened ecological communities		
New England Peppermint (*Eucalyptus nova-anglica*) Grassy Woodlands)		Critically Endangered
Upland Wetlands of the New England Tablelands (New England Tableland Bioregion) and Monaro Plateau (South Eastern Highlands Bioregion)		Endangered
White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland		Critically Endangered
Listed Threatened Species		
Anthochaera Phrygia	Regent Honeyeater	Critically Endangered
Aphelocephala leucopsis	Southern Whiteface	Vulnerable
Botaurus poiciloptilus	Australasian Bittern	Endangered
Calidris acuminata	Sharp-tailed Sandpiper	Vulnerable
Calidris ferruginea	Curlew Sandpiper	Critically Endangered
Calyptorhynchus lathami lathami	South-eastern Glossy Black-Cockatoo	Vulnerable
Climacteris picumnus victoriae	Brown Treecreeper (south-eastern)	Vulnerable
Erythrotriorchis radiatus	Red Goshawk	Endangered
Falco hypoleucos	Grey Falcon	Vulnerable
Gallinago hardwickii	Latham's Snipe	Vulnerable
Grantiella picta	Painted Honeyeater	Vulnerable
Hirundapus caudacutus	White-throated Needletail	Vulnerable
Lathamus discolor	Swift Parrot	Critically Endangered
Melanodryas cucullata cucullata	South-eastern Hooded Robin	Endangered
Neophema chrysostoma	Blue-winged Parrot	Vulnerable
Polytelis swainsonii	Superb Parrot	Vulnerable
Rostratula australis	Australian Painted Snipe	Endangered
Stagonopleura guttata	Diamond Firetail	Vulnerable
Tringa nebularia	Common Greenshank	Endangered

Scientific name	Common name	Status
Euastacus simplex	Simple Crayfish	Endangered
Bidyanus bidyanus	Silver Perch	Endangered
Maccullochella peelii	Murray Cod	Vulnerable
Litoria castanea	Yellow-spotted Tree Frog	Critically Endangered
Litoria piperata	Peppered Tree Frog	Vulnerable
Litoria subglandulosa	New England Tree Frog	Vulnerable
Chalinolobus dwyeri	Large-eared Pied Bat	Endangered
Dasyurus maculatus maculatus (SE mainland population)	Spot-tailed Quoll	Endangered
Nyctophilus corbeni	Corben's Long-eared Bat	Vulnerable
Petauroides volans	Greater Glider (southern and central)	Endangered
Petaurus australis australis	Yellow-bellied Glider (south-eastern)	Vulnerable
Petrogale penicillata	Brush-tailed Rock-wallaby	Vulnerable
Phascolarctos cinereus (combined populations of QLD, NSW and the ACT)	Koala	Endangered
Potorous tridactylus tridactylus	Long-nosed Potoroo (northern)	Vulnerable
Pseudomys novaehollandiae	New Holland Mouse	Vulnerable
Pteropus poliocephalus	Grey-headed Flying-fox	Vulnerable
Anomalopus mackayi	Five-clawed Worm-skink	Vulnerable
Aprasia parapulchella	Pink-tailed Worm-lizard	Vulnerable
Myuchelys belli	Western Sawshelled Turtle	Endangered
Uvidicolus sphyrurus	Border Thick-tailed Gecko	Vulnerable
Flora		
Acacia pubifolia	Velvet Wattle	Vulnerable
Arthraxon hispidus	Hairy-joint Grass	Vulnerable
Berty asp. Clouds Creek (M.Fatemi 4)	-	Endangered
Boronia granitica	Granite Boronia	Endangered
Cadellia pentastylis	Ooline	Vulnerable
Caladenia Amnicola	-	Endangered
Callistemon pungens	-	Vulnerable
Dichanthium setosum	Bluegrass	Vulnerable
Diuris eborensis	-	Endangered
Diuris pedunculata	Small Snake Orchid	Endangered
Eucalyptus caleyi subsp. ovendenii	Ovenden's Ironbark	Vulnerable

Scientific name	Common name	Status
Eucalyptus mckieana	McKie's Stringybark	Vulnerable
Eucalyptus nicholii	Narrow-leaved Peppermint	Vulnerable
Eucalyptus rubida subsp. barbigerorum	Blackbutt Candlebark	Vulnerable
Euphrasia arguta	-	Critically Endangered
Haloragis exalata subsp. velutina	Tall Velvet Sea-berry	Vulnerable
Lepidium hyssopifolium	Basalt Pepper-cress	Endangered
Picris evae	Hawkweed	Vulnerable
Prasophyllum sp. Wybong (C. Phelps ORG 5269)	A leek-orchid	Critically Endangered
Pterostylis metcalfei	Metcalfe's Greenhood	Endangered
Swainsona murrayana	Slender Darling-pea	Vulnerable
Thesium australe	Austral Toadflax	Vulnerable
Vincetoxicum forsteri listed as *Tylophora Linearis*	-	Endangered
Listed Migratory Species		
Apus pacificus	Fork-tailed Swift	Migratory
Motacilla flava	Yellow Wagtail	Migratory
Actitis hypoleucos	Common Sandpiper	Migratory
Calidris melanotos	Pectoral Sandpiper	Migratory
Listed Marine Species		
Bubulcus ibis as *Ardea ibis*	Cattle Egret	Marine
Chalcites osculans as *Chrysococcyx asculans*	Black-eared Cuckoo	Marine
Haliaeetus leucogaster	White-bellied Sea-Eagle	Marine
Merops ornatus	Rainbow Bee-eater	Marine
Monarcha melanopsis	Black-faced Monarch	Marine
Myiagra cyanoleuca	Satin Flycatcher	Marine
Pterodroma cervicalis	White-necked Petrel	Marine
Rhipidura rufifrons	Rufous Fantail	Marine



Source: EMM (2025); SQE (2025); DCCEEW (2025); DCSSS (2024); GA (2009)

0 2.5 5 km

GDA2020 MGA Zone 56

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KEY

- Project site
- Development corridor
- Indicative wind turbine generator location

Threatened ecological community

- 3339 | Guyra Basalt Snow Gum Woodland
- 3344 | New England Ribbon Gum Grassy Forest
- 3359 | New England Hills Stringybark-Box Woodland
- 3363 | Western New England Blakelys Red Gum-Box Grassy Forest
- 3855 | Western New England Rocky Granite Low Woodland

Existing environment

- Rail line - disused
- Major road
- Minor road
- Vehicular track
- Named watercourse
- NPWS reserve

Threatened ecological communities

Boorolong Wind Farm
Scoping Report
Figure 6.2

EMM creating opportunities

6.2.2 Potential impacts

Direct and indirect impacts of the project to biodiversity values may include vegetation clearing, sedimentation, dust deposition, erosion, weed introduction and/or spread, vehicle/machinery strike, bird and bat turbine collision, light and noise impacting foraging, refuge and breeding. Impacts during the operational phase (including impacts associated with maintenance) of the project may include a continuation of indirect impacts associated with weed spread, and bird and bat WTG strike.

The potential biodiversity impacts and the receptors of these impacts are summarised in Table 6.4. The key receptors are nearby ecosystems, vegetation communities and native flora and fauna.

Table 6.4 Potential biodiversity impacts because of the project

Project phase	Potential Impact	Receptor(s)	Does the impact need assessment in the EIS?	Consultation required
Construction	Project construction will require vegetation clearing and some reshaping of the topography and landscape. These activities will result in a direct and long-term impact on the occurrence, extent and coverage of native vegetation, including threatened species and their habitats as well as ecological communities.	Native vegetation communities, flora and fauna habitat	Yes	CPHR, Commonwealth DCCEEW and community
	There may be indirect impacts to native species including the loss of feeding, refuge and breeding habitat; habitat fragmentation; noise, dust, light spill and shading; the transportation of weeds or pathogens to site; and on-site vehicle strikes.	Native fauna	Yes	CPHR, Commonwealth DCCEEW and community
	Intersection/road upgrades and increased vehicles movements along the transport routes may cause impacts, such as loss of habitat and weed invasion, particularly in areas with roadside native vegetation.	Native vegetation communities and flora	Yes	CPHR, Commonwealth DCCEEW and community
Operations (including maintenance)	Potential operational impacts will be primarily associated with the risk of turbine collision and barrier effects to threatened and protected bird and bat species. Collision risk can be minimised during project design by avoiding areas of highest risk and including setbacks and buffers from nature reserves, and PCTs likely to contain habitat for microbats. During operations, there may be major maintenance activities, which will be similar, although less widespread, than from the equivalent construction activities e.g. replacement of WTG parts. These may have impacts similar to impacts during the construction phase e.g. weed spread.	Native fauna	Yes	CPHR, Commonwealth DCCEEW and community

Project phase	Potential Impact	Receptor(s)	Does the impact need assessment in the EIS?	Consultation required
	Increased risk to migratory species as restricting movement through the operational wind farm may have a local population-level impact on the species. Generally, most woodland birds and bats forage and move within canopies and lower than the proposed turbine height, so the risk of impacts are lower.	Native fauna	Yes	CPHR, Commonwealth DCCEEW and community

6.2.3 EIS assessment approach

Field surveys will map PCTs within the disturbance footprint in accordance with the biodiversity assessment method (BAM).

A detailed biodiversity development assessment report (BDAR) will be prepared in accordance with the BAM requirements. This will assess direct impacts, indirect impacts, prescribed impacts, and serious and irreversible impacts (SAII) during project construction and operations. Prescribed and indirect impacts will be assessed on host landholders' property and adjacent land in accordance with the BAM methodology. This assessment will identify any sensitivity associated with the Boorolong Nature Reservice.

A land category assessment (LCA) will be prepared that identifies native vegetation management, land use regime and, where applicable, the potential for land to be mapped as Category 1 exempt land. Land mapped or determined as Category 1 exempt can be excluded from the BAM and is not required to be assessed, with exception to prescribed impacts. The LCA does not remove the requirement to address matters under the EPBC Act.

Bird and bat utilisation surveys (BBUS), operational risk assessments and collision risk modelling (CRM) will be completed to inform potential operational risk of the wind farm and to support ecological assessments required under the BC Act, inclusive of section 8.3.5 of the BAM and the EPBC Act. This information will be used to inform a Bird and Bat Adaptive Management Plan (BBAMP) that will likely be required as a condition of approval. This will provide a strategy for managing and mitigating any significant bird and bat strikes from operation of the project.

6.3 Aboriginal heritage

6.3.1 Existing environment

The Aboriginal Heritage Information Management System (AHIMS) contains records of registered Aboriginal archaeological sites (Aboriginal objects) and declared Aboriginal places, as defined under the *National Parks and Wildlife Act 1974*. An AHIMS search for the project site was conducted on 29 April 2025 (AHIMS Client Service ID: 998956).

The search returned eight Aboriginal archaeological records in the northern half of the project site. A review of the archaeological site cards identified that the registered locations of some sites are incorrectly mapped. Following correction, all sites are now located in the north-east corner of the project site (Table 6.5 and Figure 6.3).

Table 6.5 AHIMS registered sites within the project site

AHIMS ID	Site name	Site type	Description
21-1-0004	"Boorolong"	Carved trees likely associated with a burial	Two carved trees. The first tree is described as being on the crest of Fosters Hill on Boorolong Station. The second tree is described as being on the next slope to the west. Both trees were removed in 1962 to the University of New England. They are now housed in the Armidale Folk Museum. Remapping of these two sites based on the original 1962 recorded details has identified that one tree (ARM 003) was located approximately 37 m within the project site, while the other tree (ARM 002) and associated burial (AHIMS #21-1-0003) was located 10 m outside of the project site.
21-1-0123	ARM 003	Reinspection of AHIMS #21-1-0003 and 21-1-0004	An attempt to relocate and update the site card details of both sites was undertaken by Armidale Dumaresq Council in 2008. The site was not accessible at the time of inspection but additional details were provided regarding the site's history, noting that the site is of high value to the local Aboriginal community. See above comment on AHIMS #21-1-0004 and Table 6.6 for comment on AHIMS #21-1-0003. Note 21-1-0123 is a duplicate entry and includes AHIMS ID 21-1-0003 and 21-1-0004. AHIMS ID 21-1-0003 (descrbied as a burial) and part of AHIMS ID 21-1 0004 (site name ARM-002 scarred tree) are outside the project site. AHIMS ID 21-1-004 (site name ARM 003 scarred tree) are within the project site.
21-1-0140	R21/ISO1	Isolated artefact	Isolated artefact with evidence of retouch.
21-1-0141	R22/ISO2	Isolated artefact	Isolated quartz flake.
21-1-0142	R27/0S3*	Artefact scatter	Artefact scatter (n=8) of silcrete flakes and a core.
21-1-0143	R26/OS2	Artefact scatter	Artefact scatter (n=2) of silcrete flakes.
21-1-0149	R18/AB1	Isolated artefact	Axe blank.
21-1-0150	R2/OS1	Artefact scatter	Artefact scatter (n=10+) of silcrete and quartz flakes.

Note: * typo recorded in AHIMS of 0 instead of O.

In addition to registered sites within the project site, there are 10 registered heritage sites adjacent to, or within 2 km, of the project site boundary that are likely to have archaeological and intangible heritage values that extend into the project site (Table 6.6).

Table 6.6 AHIMS registered sites close to the project site

AHIMS ID	Site name	Site type	Description
21-1-0003	"Boorolong"	Burial – c 1860s	An historical Aboriginal burial on the crest of Fosters Hill, that was likely disinterred in the 1880s. Described as a shallow burial with sticks and stringybark used to cover the burial.
21-1-0004	"Boorolong"	Two carved trees likely associated with the burial	Two carved trees. The first tree (ARM 003) is described as being on the crest of Fosters Hill on Boorolong Station. The second tree (ARM 002) is described as being on the next slope to the west. Both trees were removed in 1962 to the University of New England. They are now housed in the Armidale Folk Museum (ARM 104). As detailed in Table 6.5, one tree (ARM 003) was located approximately 37 m within the project site, while the other tree (ARM 002) and associated burial (AHIMS #21-1-0003) was located 10 m outside of the project site.

AHIMS ID	Site name	Site type	Description
21-1-0123	ARM 002 ARM 104	Reinspection of AHIMS #21-1-0003 and 21-1-0004	An attempt to relocate and update the site card details of both sites was undertaken by Armidale Dumaresq Council in 2008. The site was not accessible at the time of inspection but additional details were provided regarding the site's history, noting that the site is of high value to the local Aboriginal community.
21-1-0130	OBH 1	Artefact scatter	Small artefact scatter located amongst buildings of Boorolong Station.
21-1-0144	R28/OS4	Artefact scatter	Small artefact scatter (n=5) located 90 m north of Boorolong Creek and the project site.
21-1-0392	Boorolong Creek OS-01	Artefact scatter	A low density surface artefact scatter (n=6) located in an significant erosional scald on the eastern side of Boorolong Road where it crosses Boorolong Creek immediately outside of the project site. This scatter most likely extends into the project site and is believed to be indicative of archaeological potential along Boorolong Creek.
21-1-0562	Fleetwood Road Daala (scar tree) 01	Culturally Modified Tree	Culturally modified tree located 300 m north of the project site at the intersection of Old Armidale Road and Fleetwood Road.
21-1-0576	Scarred tree – Booralong Road	Culturally Modified Tree	Culturally modified tree located 75 m east of the project site off Boorolong Road, near Wyndella.
21-1-0577	Canoe tree – Booralong Road	Culturally Modified Tree	Culturally modified tree located 1.6 km east of the project site off Boorolong Road, near Mt Valley Station.
21-1-0048	Saumarez JA1	Artefact scatter	A low-density artefact scatter (n=10) comprised of silcrete, quarztite and crystal quartz artefacts located on the banks of Saumarez Creek.

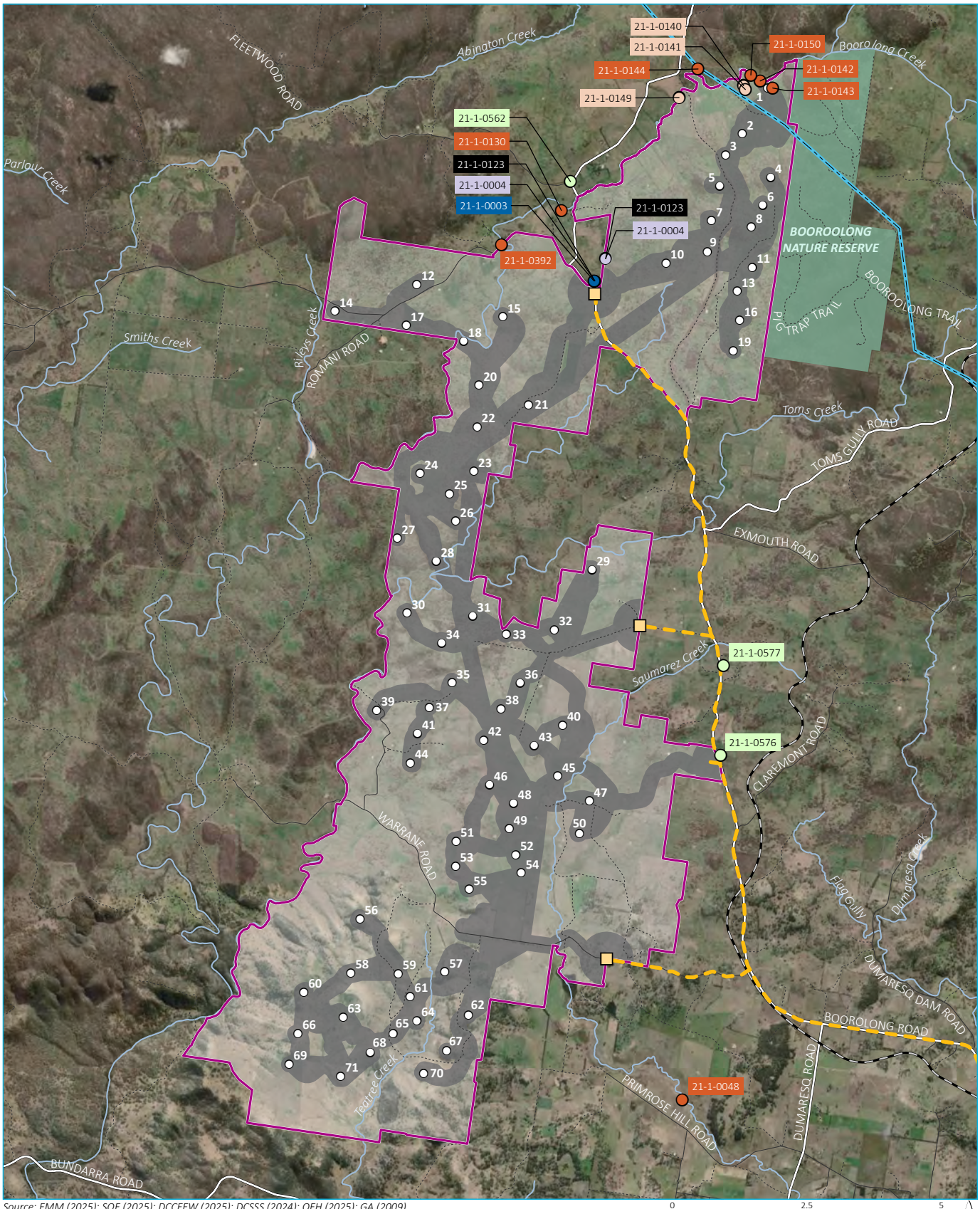
6.3.2 Potential impacts

Construction of the project has the potential to directly impact eight sites recorded in AHIMS, within the project boundary, being predominately located in the north-east of the project site and the potential to impact unidentified Aboriginal heritage sites associated with related culturally sensitive landforms.

Initial predictive modelling indicates Aboriginal heritage sites are most likely to occur in proximity to current or past waterways.

The potential for other archaeological site types and intangible cultural sites to occur within the project site will be determined through archaeological investigation and consultation with Aboriginal stakeholders. This consultation will also provide valuable information on the cultural heritage values of the project site and broader region.

Impacts to Aboriginal heritage sites will be avoided where possible through project design.



Source: EMM (2025); SQE (2025); DCCEEW (2025); DCSSS (2024); OEH (2025); GA (2009)

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KEY

- Project site
- Development corridor
- Indicative wind turbine generator location
- Indicative site access point
- Traffic access route

AHIMS (site type)

- Artefact Scatter
- Isolated Artefact
- Burial
- Culturally Modified Tree
- Culturally Modified Tree (Carved)
- Reinspection Duplicate

Electricity transmission line (voltage)

- 330 kV

Existing environment

- Rail line- disused
- Major road
- Minor road
- Vehicular track
- Named watercourse
- NPWS reserve

AHIMS sites within the project site and surrounds

Boorolong Wind Farm
Scoping Report
Figure 6.3

EMM creating opportunities

6.3.3 EIS assessment approach

EMM commenced desktop Aboriginal assessments for the project in August 2022. This included the following Stage 1 activities (notification and registration of Aboriginal parties) in accordance with the *Aboriginal Cultural Heritage Consultation Requirements for Proponents* (DECCW 2010):

- A letter was issued to government agencies on 10 January 2023 requesting advice on which Aboriginal parties to invite for consultation.
- A notification was placed in a local newspaper on 13 January 2023, detailing the project and a request for Aboriginal knowledge holders to register their interest in the project and Aboriginal parties identified by the government agencies were invited to register their interest in the project on 23 January 2023.

Stage 1 activities in accordance with the *Aboriginal Cultural Heritage Consultation Requirements for Proponents* (DECCW 2010) will be repeated during the EIS phase of the project, since there has been a period between when the project was temporarily paused and now.

EIS Aboriginal heritage assessments will involve:

- an assessment of the impact to any identified Aboriginal cultural heritage items (cultural and archaeological) in accordance with the *Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW* (OEH 2011) and the *Code of Practice for the Archaeological Investigation of Aboriginal Objects in NSW* (DECCW 2010b), including results of archaeological test excavations (if required)
- consultation with Aboriginal communities in determining and assessing impacts, developing options and selecting options and mitigation measures (including the final proposed measures), having regard to the *Aboriginal Cultural Heritage Consultation Requirements for Proponents* (DECCW 2010).

6.4 Amenity - noise and vibration

The Preliminary Noise Impact Assessment (PNIA) has been prepared (Appendix G) in accordance with:

- *Wind Energy Guideline* (DPHI 2024b) (the 'Wind Energy Guideline')
- *Wind Energy Guideline: Technical Supplement Noise (*2024d), (the 'Noise Technical Supplement').

Note, the PNIA has been carried out based on worst-case noise propagation conditions.

6.4.1 Existing environment

Given the project's rural setting, background noise at nearby sensitive receivers is expected to be low and characterised by agricultural equipment and machinery associated with agricultural production activities, vehicle movements along the local roads and natural sounds (livestock, birds, insects, etc).

The Noise Technical Supplement provides a baseline noise criterion of 35 dB(A) at non-associated residences. At associated residences, the Noise Technical Supplement allows an increase above the baseline noise criterion of 35 dB(A), subject to a formal agreement and ensuring that the landowner is appropriately informed and understands the agreed noise levels.

6.4.2 Potential impacts

Noise from construction of the project will include noise generated by earthworks, delivery and fabrication of the WTGs, construction of the BESS, substations and associated infrastructure, as well as trafficking noise from light and heavy vehicle use internally on tracks and externally on public roads.

Noise from project operations (including maintenance activities) will include noise generated by the operation of the WTGs, substations and the BESS.

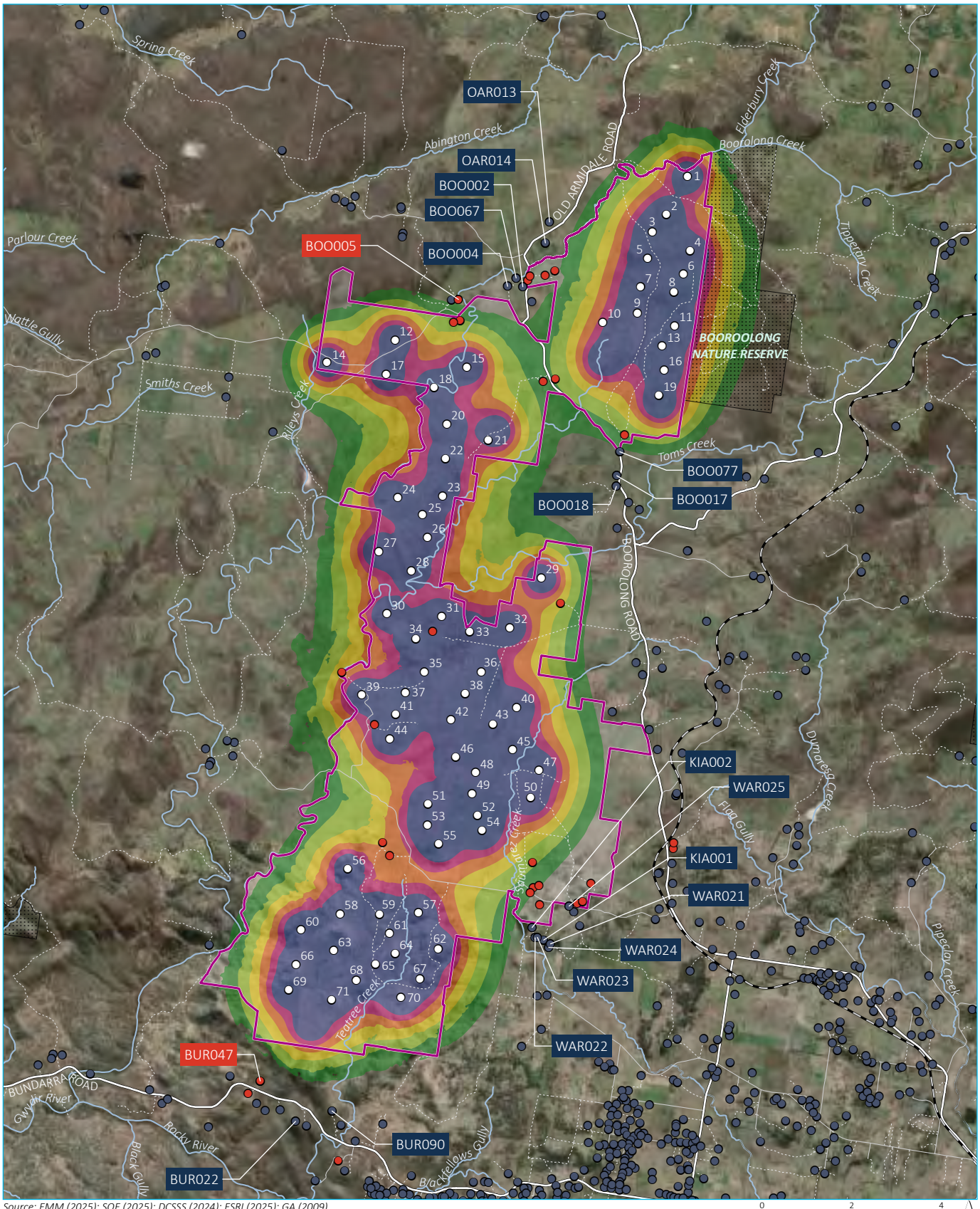
Noise prediction contours and predicted noise levels are provided in Figure 6.4 and Table 6.7, respectively for operational WTG noise.

Table 6.7 Predicted noise levels at selected non-associated residences

Receiver ID	Easting	Northing	Predicted operational noise level, dBA
BOO077	361134	6640914	33
BOO005	357533	6644295	33
KIA002	359176	6630306	32
BOO002	358970	6644589	31
OAR014	359480	6645577	31
BOO004	358634	6644590	31
WAR022	359243	6630079	31
BOO067	358821	6644784	31
WAR023	359294	6630086	31
OAR013	359564	6646035	31
BOO017	361066	6640368	30
KIA001	359434	6630029	30
BUR047	353120	6626887	30
WAR025	360001	6630782	30
BUR022	353901	6625985	30
WAR024	359547	6629859	30
BOO018	361057	6640134	30
BUR090	354715	6626220	30
WAR021	359586	6629942	30

The PNIA found that the 35 dB(A) baseline criterion can be achieved at all non-associated residences (Table 6.7). These predictions indicate that the project can be designed and operated in compliance with the Guideline. Predicted noise contours are presented in Figure 6.4.

Noise impacts to associated residences will be minimised through project design.



Source: EMM (2025); SQE (2025); DCSSS (2024); ESRI (2025); GA (2009)

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KEY

- Project site
- Indicative wind turbine generator location
- Associated receiver
- Non-associated receiver

Noise contours
$L_{Aeq\ 10}$

- 33- 35 dB
- 35- 37 dB
- 37- 39 dB
- 39- 41 dB
- 41- 43 dB
- >43 dB

Existing environment

- Rail line- disused
- Major road
- Minor road
- Vehicular track
- Named watercourse
- NPWS reserve

Noise contours- operations

Boorolong Wind Farm
Preliminary Noise Impact Assessment
Figure 4.1

EMM creating opportunities

6.4.3 EIS assessment approach

A detailed noise and vibration impact assessment (NVIA) will be prepared in accordance with the Noise Technical Supplement. It will consider noise impacts to residences and other receivers within the vicinity of the project, and cumulative impacts with surrounding developments.

The NVIA will include:

- construction noise assessment involving:
  - identification of construction noise sources
  - assessment against NSW construction noise and vibration policies (refer below)
  - noise mitigation strategies
  - a vibration assessment
  - road traffic noise
- operational noise assessment involving:
  - noise modelling for proposed WTG specifications
  - assessment against Noise Technical Supplement criteria
  - noise mitigation strategies
  - cumulative noise impacts from surrounding renewable energy projects.

The NVIA will consider the WTG specifications, WTG layout, sound power levels, and uncertainty margins, and any design changes that arise during the preparation of the EIS.

The NVIA will be prepared in accordance with the:

- *NSW Wind Energy Guideline: Technical Supplement for Noise Assessment* (DPHI 2024d)
- *Interim Construction Noise Guideline* (DECC 2009)
- *Noise Policy for Industry* (EPA 2017)
- *Road Noise Policy* (DECCW 2011)
- *Assessing Vibration: A Technical Guideline* (DEC 2006).

It is proposed to consult with surrounding landholders in relation to noise and vibration as part of the EIS stage.

6.5 Amenity - visual

The visual impact analysis (VIA) has been prepared in accordance with:

- *Wind Energy Guideline* (DPHI 2024b) (the 'Wind Energy Guideline')
- *Wind Energy Guideline: Technical Supplement for Landscape and Visual Impact Assessment* (DPHI 2024c), (the 'Visual Technical Supplement').

The assessment identifies visual setbacks, the visual study area, viewpoints, private receivers and public viewpoints, and provides a viewshed map, in accordance with section 4.1 of the Visual Technical Supplement.

6.5.1 Existing environment

The project is located within the New England Tablelands ridges and plateau region, west of the Great Dividing Range, near the eastern edge of the NSW North Coast River escarpments. The surrounding landscape is characterised by rolling hills, much of which have been cleared for livestock grazing, interspersed with densely vegetated hill areas.

The project site reflects this regional character, consisting predominantly of plateau terrain with several elevated ridgelines, particularly in the northern and western portions of the site. The elevation across the project site ranges from approximately 900 m to 1,300 m above sea level (AHD). This topographical profile is consistent with the broader New England Tableland landscape.

6.5.2 Potential impacts

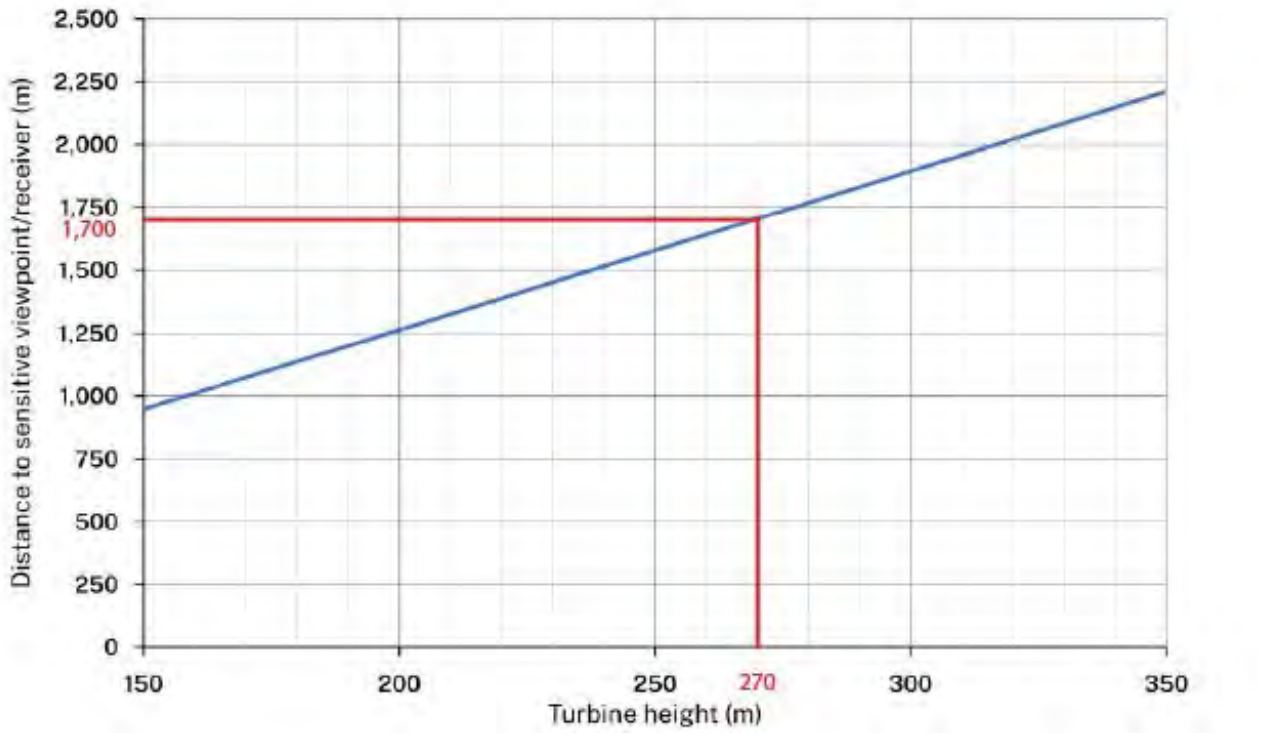
i Incorporation of visual setbacks in project layout

The project layout has considered the visual setback for each WTG. Setbacks for WTGs are determined to minimise visual intrusion on sensitive receptors. The visual setback represents the distance from a WTG at which it is likely to appear visually dominant within the surrounding landscape. Visual setbacks are described in section 3.1 of the Visual Technical Supplement:

> This setback applies from sensitive receivers and scales, depending on the height of the proposed turbines. If a sensitive receiver is within the setback distance, it will trigger a high visual impact unless topography or vegetation largely screens the turbines.

This distance is dependent on the height of the WTG and is determined using a linear graph provided in the Visual Technical Supplement, as shown in Figure 6.5.

For WTGs with a tip height of 270 m, the visual setback distance is 1.7 km from the WTGs. At this distance, a 'high visual impact' rating is typically triggered, as outlined in the Visual Technical Supplement. The Visual Technical Supplement recommends that WTGs are located outside of the defined setback area to mitigate potential visual impacts.



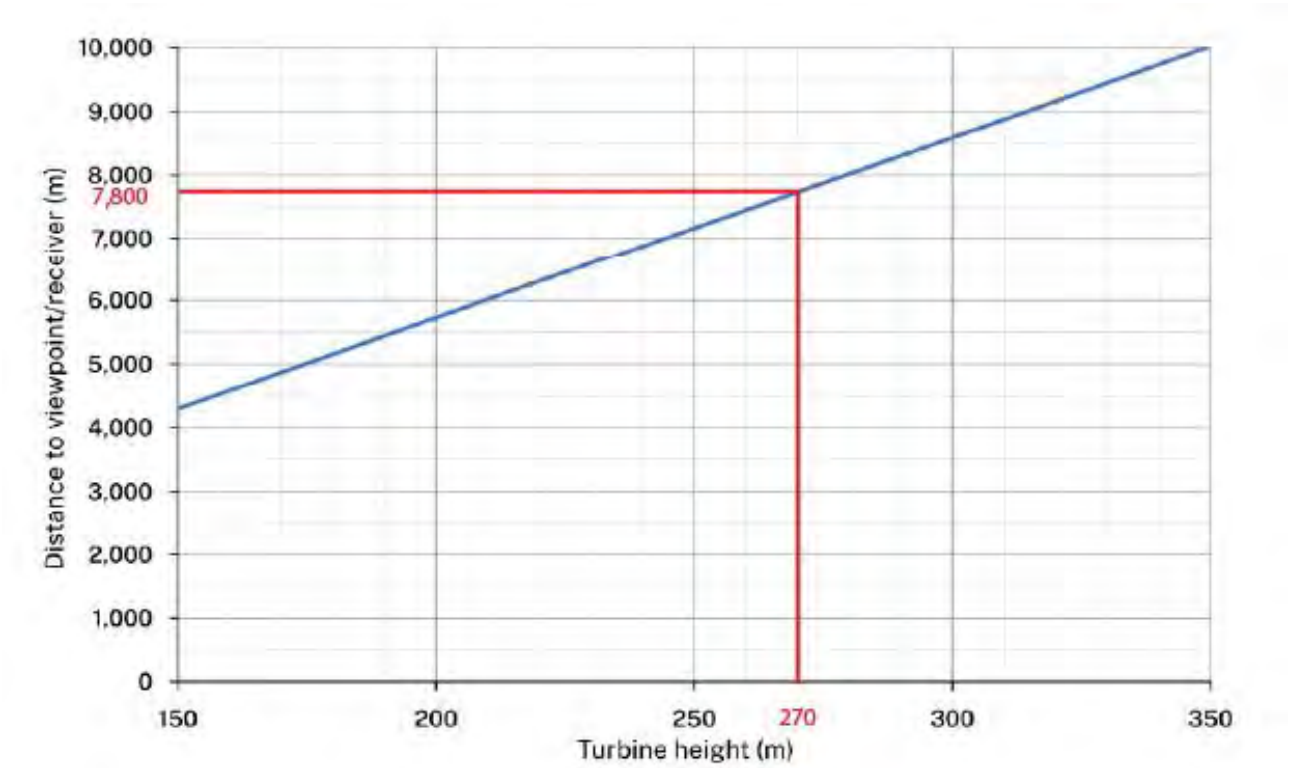
Source: Figure 2 in Wind Energy Guideline: Technical Supplement for Landscape and Visual Impact Assessment (DPHI 2024c).

Figure 6.5 Setback from sensitive receivers

ii Visual study area

The first stage in the visual impact analysis (VIA) is to define the visual study area in which the visual impacts of the project need to be evaluated. The visual study area is delineated based on the project layout and the height of the WTGs. Although elements of the project may be visible beyond these boundaries, the Visual Technical Supplement states that any visual impact becomes minimal and difficult to distinguish from the landscape at greater distances.

The extent of the visual study area is established using a linear graph provided in the Visual Technical Supplement, as shown in Figure 6.6. For WTGs with a height of 270 m, the visual study area extends 7.8 km from each turbine location.



Source: Figure 7 in Wind Energy Guideline: Technical Supplement for Landscape and Visual Impact Assessment (DPHI 2024c).

Figure 6.6 Extent of the visual study area

iii Viewshed mapping

Viewshed mapping determines the theoretical visibility of a project from the surrounding landscape, based on topography and a WTG model using a geographic information system (GIS). Viewshed mapping is used to identify locations with potential views to WTGs or associated ancillary infrastructure.

In accordance with the Visual Technical Supplement, the screening potential of vegetation and built structures is not considered in the mapping. This is important as viewpoints which are identified as having visibility of the project in this VIA but may in fact have no or obstructed views of WTGs due to intervening vegetation or buildings. As such, the viewshed map only shows where landforms obstruct views and represents a worst-case scenario in terms of project visibility and assists in determining where potential visual impacts could occur.

The scoping map for the project is presented in Figure 6.7. The following should be noted:

- The viewshed map does not account for the diminishing size of WTGs as the viewer moves further away and only indicates where WTGs will be visible from.
- The viewshed map uses coloured shading to indicate how many WTGs (within a range) may be visible from a particular location. It does not indicate specifically how many, or which turbines, will be visible from a particular location. Unshaded locations are predicted to have no views of WTGs.
- Where the viewshed map indicates WTGs may be visible, this should be considered a maximum possible number of WTGs that will be visible. Actual visibility could be lower or even nil depending on the screening effect of existing vegetation and structures between the viewpoint and the WTGs.

The viewshed map presented in Figure 6.7 indicates the following:

- Due to the elevated landforms within the project site, the majority of the WTGs are theoretically visible from most areas within the visual study area.

- Clusters of non-associated residences around the township of Invergowrie, in the south-west of the visual study area, may have reduced visibility of the WTGs due to dense existing vegetation and the topography between the receivers and the project.

- Road users travelling along Boorolong Road, Romani Road, Warrane Road and Bundara Road are likely to have close views of WTGs (within 200 m) from sections of these roads.

iv Viewpoint Identification

Viewpoints within the visual study area with a potential line-of-sight to the WTGs will be assessed during preparation of the landscape and visual impact assessment (LVIA), which will be prepared as part of the EIS phase. For the purposes of this VIA, two categories of viewpoints are considered:

- **Private receivers** – these are non-publicly accessible locations, primarily residential properties or businesses, that may have views towards the WTGs.

- **Public viewpoints** – these include publicly accessible locations such as roads, parks, trails, and tourist sites that may have views towards the WTGs.

Viewpoints have been selected by overlaying mapped residential and public locations with the viewshed map and are presented in Figure 6.7.

v Private receivers

Private receivers primarily consist of residences and privately owned land. Access to these locations is generally restricted, limiting the number of individuals directly affected by a proposed project. However, as these are places where people spend a significant portion of their time, the *duration* and *quality* of visual impacts are of particular importance.

Within the visual study area, there are 615 non-associated private receivers and 21 associated private receivers. According to the Visual Technical Supplement, only non-associated residences need to be assessed for visual impacts. The non-associated private receivers are evaluated in one of two ways, depending on their proximity to the WTGs and the anticipated level of visual impact:

- **Individual assessment** – private receivers near the project that are likely to experience significant visual impacts are assessed individually. These cases typically require a detailed assessment within the LVIA as part of the EIS phase (Section 6.5.3). Photographs will be taken from each residence, from locations that best represent views from key living spaces.

- **Representative viewpoints** – private receivers that are expected to experience low visual impacts due to distance from the WTGs, or with limited visibility, may be assessed collectively. In such cases, a representative viewpoint is selected to capture the view likely to represent the greatest potential impact for the group. Photographs for representative viewpoints are typically taken from public areas, such as roadways or shared driveways.

The assessment method (individual or representative viewpoint) for each non-associated private receiver will be determined as part of preparing the LVIA.

Given that most sensitive receivers are concentrated around the townships of Invergowrie and Red Hill, these areas will form the primary focus for assessing visual impacts. The representative viewpoints method will be employed in these townships illustrating the likely experience of a typical viewer within each community.

Private receivers outside of these townships will be assessed on an individual viewpoint basis by the LVIA, unless they occur in localised clusters, in which case representative viewpoints may be appropriate.

vi Public viewpoints

Public viewpoints encompass a wide variety of locations that serve recreational, observational, and community purposes. These include public gathering areas such as parks, sporting fields, and walking trails. They also cover roads, trails, scenic viewpoints, and campsites located within regional, state and national parks, as well as nature reserves and forests. In addition, this category includes notable tourist attractions, heritage sites, and publicly accessible buildings, which contribute to the area's cultural and civic identity.

- **Public viewpoints:** public areas that are expected to experience significant visual impacts are assessed individually. These cases typically require a detailed assessment within the LVIA as part of the EIS (Section 6.5.3). Photographs will be taken from publicly accessible locations that best represent typical views from location.

Potential sensitive receptors and viewpoints in the visual study area include:

- Boorolong Nature Reserve (not easily accessible)
- Mt Yarrowyck Nature Reserve (not easily accessible)
- Dumaresq Dam
- Boorolong Station
- Dumaresq Railway Station
- Bundarra Road
- Boorolong Road
- Old Armidale Road
- St Nicholas Anglican Church.

The VIA has identified 12 public viewpoints for assessment in the LVIA (Table 6.8). Only locations within the visual study area that are easily accessible will be represented by viewpoints.

Table 6.8 Selected public viewpoints

Viewpoint reference	Location	Visibility indicated on ZVI	Requires assessment in EIS
PV-01	Bundarra Road and Boorolong Creek	Yes	Yes
PV-02	Bundarra Road	Yes	Yes
PV-03	Bundarra Road and Invergowrie Road	Yes	Yes
PV-04	Bundarra Road and Marble Hill Road	Yes	Yes
PV-05	Ferris Lane and Lawson Road	Yes	Yes
PV-06	Primrose Hill Road and Dumaresq Road (Dumaresq Station)	Yes	Yes
PV-07	Boorolong Station	Yes	Yes
PV-08	Boorolong Road and Bellbrook E Road	Yes	Yes

Viewpoint reference	Location	Visibility indicated on ZVI	Requires assessment in EIS
PV-9	Boorolong Road and Toms Creek	Yes	Yes
PV-10	Tom's Gully Road and Toms Creek	Yes	Yes
PV-11	Old Armidale Road and Abington Creek	Yes	Yes
PV-12	St Nicholas Anglican Church	Yes	Yes

vii Conclusion

The LVIA identifies viewpoints that may experience visual impacts from WTGs. Within 7.8 km of the project site (the visual study area), there are 615 private receivers and 12 public viewpoints that will be assessed in detail by the LVIA (Table 6.9). There are 21 associated private receivers located within the visual study area of the project. Associated private receivers do not need to be assessed in the LVIA.

There are large concentrations of residences around the township of Invergowrie in the southeast corner of the study area with potential impacted views towards the project and should be the focus for consultation with landholders and the local community.

Table 6.9 Residences and public viewpoints

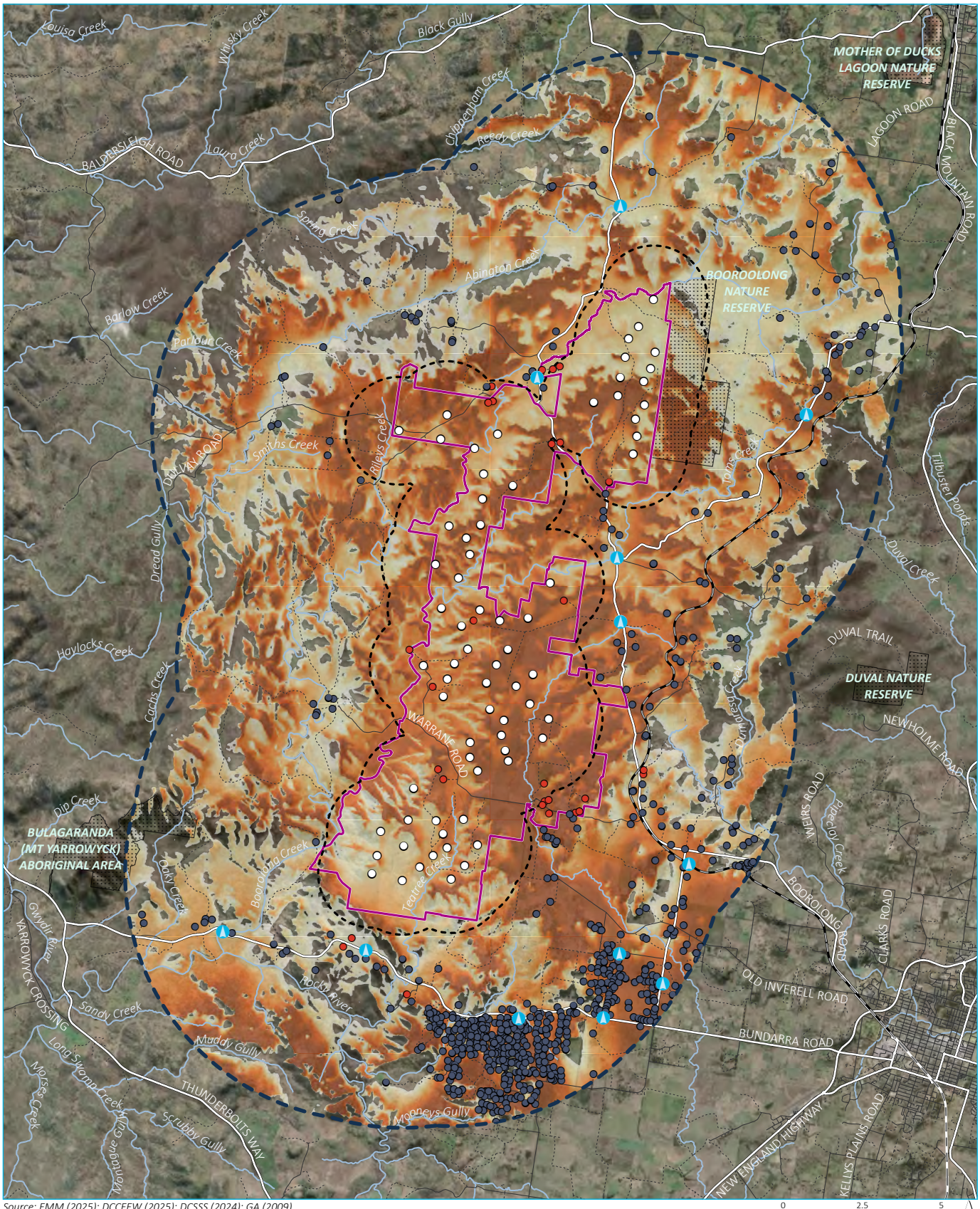
Distance	Associated residence	Non-associated residence	Public viewpoints
0–1.7 km (Visual Setback) from WTGs	8	0	0
1.7–7.8 km (Visual Study) from WTGs	13	615	12
TOTAL	**21**	**615**	**12**

While the WTGs will be visible within the landscape, the isolated, undulating hills and rural nature of the landscape interspersed with stands of native vegetation, together with other factors such as seasonal variations, vegetation cover and existing infrastructure, will likely reduce the number of WTGs visible from any single receiver and the overall visual impact of the project. During development of the project design and layout, the project will consider potential cumulative impacts for projects to the broader area.

6.5.3 EIS assessment approach

A LVIA will be prepared, in accordance with the requirements of the Wind Guideline and the Visual Technical Supplement. The LVIA will evaluate visual impacts to non-associated dwellings and public areas within the visual study area. The LVIA will include a baseline analysis, landscape character assessment, visual impact assessment, performance objectives and mitigation, shadow flicker assessment (separable document), and a cumulative impact assessment.

Local community engagement during the preparation of the LVIA will determine landscape values through a community questionnaire.



Source: EMM (2025); DCCEEW (2025); DCSSS (2024); GA (2009)

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KEY

- Project site
- Sensitive receiver buffer- 1.7 km
- Visual study area- 7.8 km
- Indicative wind turbine generator location
- Viewpoint
- Associated receptor
- Non-associated receptor

Visibility of the project

- Highly visible
- Not very visible

Existing environment

- Rail line
- Rail line- disused
- Major road
- Minor road
- Vehicular track
- Named watercourse
- NPWS reserve

Visual scoping map

Boorolong Wind Farm
Scoping Report
Figure 6.7

EMM creating opportunities

6.6 Traffic and transport

6.6.1 Existing environment

Access to the project site is expected to be via the following roads (Figure 2.2):

- New England Highway (A15): a State highway running generally north-south from Yarraman, north of Toowoomba, Queensland to Hexham, close to Newcastle. The New England Highway forms part of the inland route between Brisbane and Sydney.
- Boorolong Road: a sub-arterial two-laned sealed road, running north-west off the New England Highway at Armidale (the eastern-most 1-km-long section is named Handel Street, Queen Elizabeth Drive and Martin Street) towards the project site and carries on north to Boorolong.
- Warrane Road: a local one-lane unsealed road, running west off Boorolong Road.
- Belbrook East Road: a local road, running east of the project site, off Boorolong Road from Dumaresq.

6.6.2 Potential impacts

Large project components, including blades, tower sections and transformers, will generally be delivered to the site from the Port of Newcastle and/or the Port of Brisbane by over-size, over-mass (OSOM) vehicles. Upgrades to the local and regional road network will be required to allow these vehicles to reach the project site.

Construction materials (such as aggregates and cement) and equipment are expected to be sourced from within the region or from further afield and will require transport to the project site by heavy vehicles.

Vehicles carrying construction and operations workers will also need to access the site access points.

All OSOM vehicles, and the majority of all other vehicles, will travel on designated transport routes. The construction vehicles will generate traffic with the potential to impact the performance of the local and State road network.

Operations traffic generation will be minimal with some daily light vehicle movements for inspections, and heavy vehicle for maintenance and repairs deliveries. There will be far fewer daily operations-related vehicle movements than construction-related vehicle movements. The potential road upgrades may provide long-term benefits to road users, including local residents.

6.6.3 EIS assessment approach

A traffic impact assessment (TIA) will be prepared that includes:

- engagement with Transport for NSW (TfNSW) and local councils to identify any existing or potential road safety concerns
- assessment of the potential traffic impacts of the project on road network function, including intersection performance, site access arrangements, and road safety, including consideration of school bus routes
- assessment of the capacity and condition of the existing road network to accommodate the type and volume of traffic generated by the project (including OSOM vehicles and heavy vehicles) during construction, operations and decommissioning
- assessment of traffic impacts during construction, operations and decommissioning phases, including intersection performance, capacity, safety and site access

- development of measures to manage potential impacts, including any required road or intersection upgrades, a schedule of required road upgrades, road maintenance contributions, and other traffic control measures, developed in consultation with the relevant road authority
- assessment of potential cumulative transport impacts:
  - on local roads, including intersections with State roads
  - potential cumulative traffic on the New England Highway
  - cumulative OSOM impacts within Armidale LGA (unless included in strategic assessments undertaken by EnergyCo).

6.7 Social and economic

6.7.1 Existing environment

The local and regional community is discussed in Section 2.3.1. Additional information on the determination of the project's social locality is provided in Appendix E.

6.7.2 Potential impacts

A preliminary set of potential social impacts and benefits of the project has been identified based on engagement to date (including community surveys), and characterisation of the local community and the social locality area.

The initial identification and evaluation of social impacts is facilitated through completion of the social impact assessment (SIA) scoping worksheet (DPIE 2023), which is included in Appendix F. This decision support tool is used to determine how issues identified during the scoping phase inform the level assessment in the SIA prepared for the EIS (Section 6.7.3).

Potential negative impacts requiring further assessment and the likelihood of potential positive social impacts are summarised in Table 6.10.

Table 6.10 Identified potential social impact mapped to matters, positive and negative

Potential social impact	Social locality	Way of life	Community	Accessibility	Culture	Health and wellbeing	Surroundings	Livelihoods	Decision-making systems
Negative impacts									
Reduced sense of place and rural lifestyle values due to changes to the visual landscape and presence of WTGs.	• Local area		●				●		
Potential disruption to agricultural operations due to establishment of project infrastructure, changes to land uses and changes to access.	• Local area						●	●	
Reduced agricultural productivity due to increase in biosecurity risk from introduction of weeds.	• Local area							●	

Potential social impact	Social locality	Way of life	Community	Accessibility	Culture	Health and wellbeing	Surroundings	Livelihoods	Decision-making systems
Reduced rural lifestyle values due to land clearing and associated loss of known fauna habitat.	• Local area	●	●				●		
Deterioration of residential amenity due to generation of noise and dust.	• Local area					●			
Increased competition for construction labour and services due to increased demand generated by the project.	• Local area • Key urban areas • Regional area							●	
Reduced community cohesion due to perceived inequitable distribution of project benefits.	• Local area • Key urban areas		●						●
Reduced access and connectivity on local and regional road networks due to increased heavy vehicle and workforce traffic contributing to traffic congestion and delays.	• Local area • Regional area	●		●			●		
Potential devaluation of adjacent or nearby properties.	• Local area	●							
Reduced community cohesion due to influx of construction workers.	• Key urban areas		●						
Increased demand for social and community infrastructure due to influx of construction workers.	• Key urban areas		●	●					
Increased demand for housing (rental) and short-term accommodation due to influx of the construction workers.	• Local area • Key urban areas	●	●	●					
Diminishment of Aboriginal cultural values due to disturbance or displacement of Aboriginal heritage sites and/or artefacts.	• Local area				●				
Increased risk to health and safety for landholders and neighbours due to potential for blade throw, aviation incidents and bird strikes.	• Local area					●	●		
Positive impacts									
Generation of employment opportunities for local and regional workers, including Aboriginal people and young people.	• Regional area	●				●		●	
Generation of supply and procurement opportunities for local and regional businesses.	• Regional area							●	
Enhanced opportunity for economic diversification for agricultural operations.	• Local area							●	

Potential social impact	Social locality	Way of life	Community	Accessibility	Culture	Health and wellbeing	Surroundings	Livelihoods	Decision-making systems
Enhanced community wellbeing and cohesion due to project-provided community grants supporting community initiatives and improvements to social services.	• Local area • Key urban areas		•			•			•
Strengthened community cohesion due to increased interaction with neighbours as a result of the project.	• Local area		•				•		•

Community raised during consultation (Chapter 5) include potential visual amenity impacts due to WTGs; impacts on community members' connection to the landscape; loss of local biodiversity impacting how people experience their surroundings; disruption to farming activity during project construction impacting agricultural livelihoods; other potential construction impacts, such as noise, dust, and traffic; and uncertainty regarding the decommissioning process.

Potential benefits raised during consultation include increased resilience arising from community benefits and investment; employment opportunities; local road improvements; reduced reliance on fossil fuels; and payments to host landholders to enable the diversification of farming income.

The project may contribute to cumulative social impacts when considered alongside other developments.

It is envisaged that the construction workforce will be required and reside temporarily at existing accommodation in nearby towns. If multiple projects are constructed in the area at a similar time, there is a risk that there may be insufficient housing and accommodation for construction workers.

6.7.3 EIS assessment approach

A SIA will be prepared in accordance with the *Social Impact Assessment Guideline* (DPIE 2023). It will utilise the risk assessment matrix presented in the *Technical Supplement Social Impact Assessment Guideline for State Significant Projects* (DPHI 2023b).

The identification of social impacts will be informed by community and stakeholder engagement, as well as SIA field assessments. The SIA will be conducted in an integrated manner to ensure consistency, reduce duplication, and allow for management of consultation fatigue. Findings from the technical assessments will be considered to understand the consequences to the community and existing research, and previous SIAs will inform the identification of the social impacts.

Cumulative social impacts, specifically relating accommodation supply for the construction workforce and changes caused by concurrent projects in the region, will also be assessed.

An economic assessment will be prepared to determine the economic impacts and benefits of the project for the region and the State, including consideration of any increase in demand for accommodation and community infrastructure services as part of the SIA.

6.8 Water

6.8.1 Existing environment

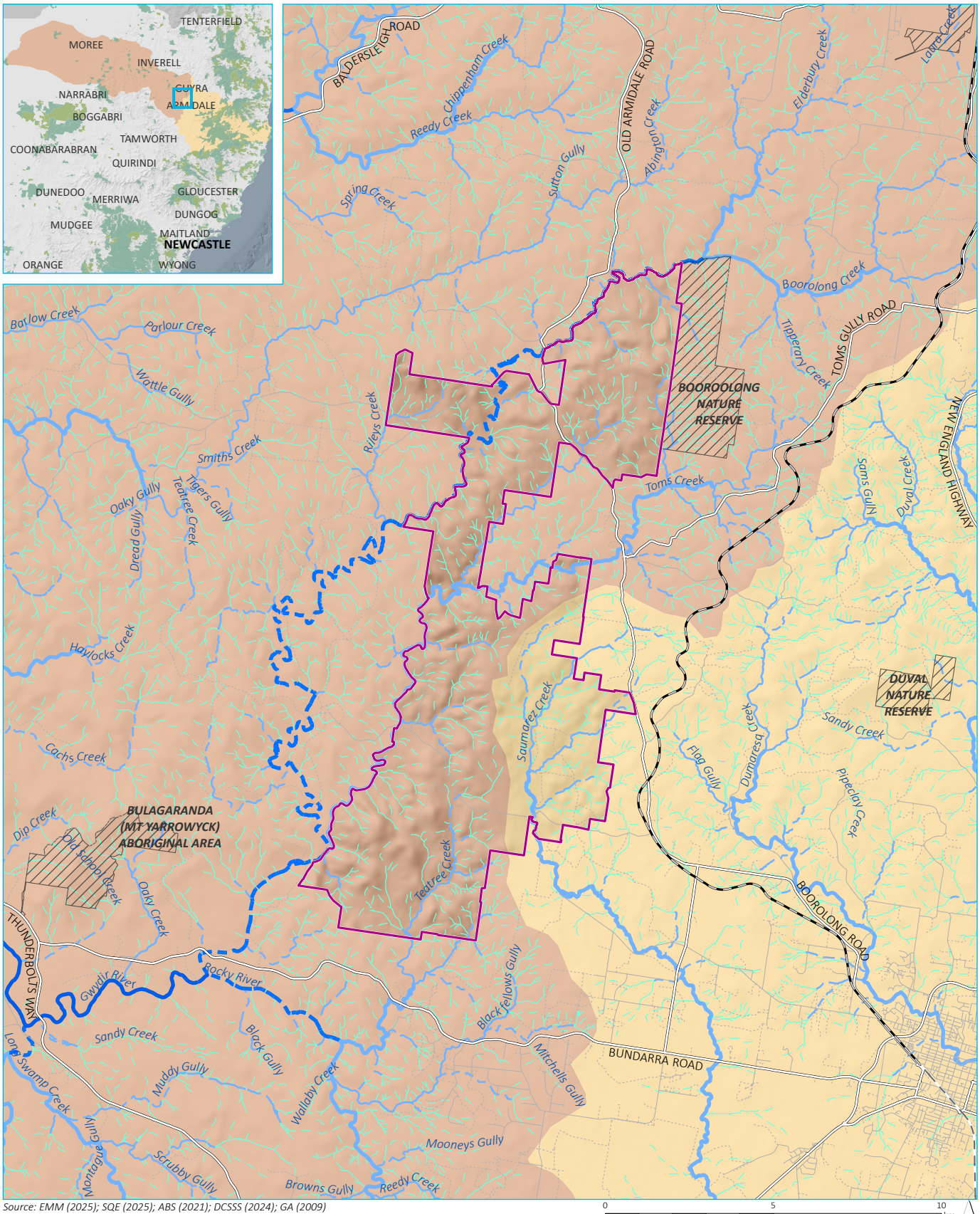
There are minor (first and second order) and major (third order and above) waterways across the project site (Figure 6.8). Typically, the minor ephemeral waterways convey flows from upper reaches and ridgelines. These join to form major perennial watercourses downstream. Farm dams are frequently located on minor streams across the project site.

The majority of the project site is in the Gwydir River catchment and drains south-west via Boorolong Creek, Two Mile Water, Toms Creek and Teatree Creek into the upper reaches of the Gwydir River, which is the largest nearby watercourse approximately 5 km south-west of the project site. The eastern portion of the project site is in the Macleay River catchment and drains south-east into Saumarez Creek, approximately 25 km above its confluence with Salisbury Waters.

Some watercourses in and around the project site have been identified as Key Fish Habitat, including Rileys Creek, Boorolong Creek, Two Mile water, Saumarez Creek and Teatree Creek. These are aquatic areas that have been identified as important to the sustainability of the maintenance of fish populations.

Surface water resources within the project site are regulated by the Water Sharing Plan for the Gwydir Unregulated River Water Sources 2012 and Water Sharing Plan for the Macleay Unregulated and Alluvial Water Sources 2016.

Groundwater resources for the project site are regulated by the NSW Murray Darling Basin Fractured Rock Groundwater Source 2020 and the North Coast Fractured and Porous Rock Groundwater Sources 2016.



Source: EMM (2025); SQE (2025); ABS (2021); DCSSS (2024); GA (2009)

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KEY

- Project site
- Gwydr River catchment
- Macleay River catchment

Strahler stream order
- 1st order
- 2nd order
- 3rd order
- 4th order
- 5th order
- 6th order
- 7th order

Existing environment
- Rail line
- Rail line- disused
- Major road
- Minor road
- Vehicular track
- NPWS reserve

INSET KEY

- NPWS reserve
- State forest

Hydrological setting

Boorolong Wind Farm
Scoping Report
Figure 6.8

EMM creating opportunities

6.8.2 Potential impacts

Construction of the project will involve ground disturbance, including excavations, earthworks and storage and handling of material. In the absence of suitable controls, project construction has the potential to result in the following impacts to surface water resources:

- erosion could result in sediment entering watercourses
- spills of materials such as fuel, lubricants, herbicides and other chemicals could contaminate surface and/or groundwater
- construction of tracks (including creek crossings) and infrastructure could disturb watercourses and associated riparian zones
- floodwaters could be blocked or redirected by project components
- surface water and/or groundwater used during construction could reduce availability to other users, including the environment or result in downstream or drawdown impacts respectively.

The project will avoid the most significant watercourses, riparian corridors and other sensitive receptors where possible. Specific designs and mitigation measures may be required to minimise impacts within and along drainage lines.

Disturbance works have the potential to intersect the groundwater table if present. If more than 3 megalitres per year of groundwater seepage is predicted to enter excavations during construction, a groundwater access licence will be required.

Operation of the project, including vehicles traversing along access tracks or maintenance of infrastructure, could have similar impacts to those identified for the construction phase in the absence of suitable controls.

6.8.3 EIS assessment approach

A water resources assessment will be prepared as part of the EIS. The water resources assessment will include:

- site characterisation, including a review of the existing water environment and mapping, to characterise surface and groundwater resources and water users
- an assessment of the likely impacts of the project on surface and groundwater resources such as drainage channels, wetlands, riparian land, farm dams, groundwater dependent ecosystems (GDEs), acid sulfate soils, water infrastructure, adjacent licensed surface and groundwater water users and basic landholder rights
- a review and assessment of the likely risks and impacts of the Project on flooding and floodplain areas
- consideration of water requirements and supply arrangements (i.e. surface or groundwater sources) for construction and operations
- a review of the relevant regulatory requirements (e.g. water sharing plans) and suitable licencing pathways to access surface or groundwater for construction if required
- measures to monitor, reduce and mitigate impacts on surface and groundwater resources.

6.9 Aquatic habitat

6.9.1 Existing environment

DPI Fisheries' Spatial Data Portal (DPI 2025) identifies the potential geographical range of threatened aquatic species in NSW inland waters. This indicative mapping is based on desktop analysis of watercourse connectivity and watercourse attributes. The portal identifies the following threatened aquatic species (i.e. listed under the *Fisheries Management Act 1994* (FM Act)) in watercourses within the project site:

- Southern Purple Spotted Gudgeon (*Mogurnda adspersa*) in Boorolong Creek, Toms Creek and Teatree Creek
- Eel Tailed Catfish (*Anguilla reinhardtii*) in Boorolong Creek.

Rileys Creek, Boorolong Creek, Two Mile water, Saumarez Creek and Teatree Creek within the project site have been identified as Key Fish Habitat.

Preliminary aquatic habitat observations in the project site in June 2021 identified Peppered Tree Frog (*Litoria piperata*), and Western Sawshelled Turtle, Bell's Turtle (*Myuchelys bellii*), which are listed as threatened under the BC Act.

6.9.2 Potential impacts

The project requires the construction of windfarm access tracks and clearing for the construction of WTGs and associated infrastructure. These increase the potential for sedimentation transfer to the aquatic environment (see Section 6.8.2).

Construction of watercourse crossings for windfarm access tracks has the potential to change water flow and increase sedimentation in waterbodies, which could result in impact the abiotic and biotic aquatic environment. Any waterway crossings within Key Fish Habitat will be designed with reference to *Why Do Fish Need to Cross the Road? Fish Passage Requirements for Waterway Crossings* (Fairfull and Witheridge 2003) and the *Policy and Guidelines for Fish Friendly Waterway Crossings* (DPI 2003).

Windfarm access tracks will traverse creeks and riparian corridors. Connectivity along these corridors may be affected, impacting the ability of aquatic species to move upstream and downstream.

Operations, including vehicles traversing watercourse crossings, could have similar, but less intense, impacts to those identified during construction, except where buried reticulation is required to be repaired.

6.9.3 EIS assessment approach

An aquatic ecology assessment will be prepared that assesses the potential impacts on listed aquatic threatened species, populations and ecological communities. The aquatic ecology assessment will include:

- characterisation of aquatic habitat and threatened species within the project site, including an assessment of abiotic and biotic factors contributing to aquatic habitat features
- aquatic habitat surveys to determine the likelihood of presence of any threatened aquatic species listed under the EPBC Act or FM Act
- measures to minimise impacts
- assessments of the significance any impacts to threatened species.

Species listed under the BC Act will be assessed as part of the BDAR (see Section 6.2.3).

6.10 Historical heritage

6.10.1 Existing environment

The following historical heritage registers were searched:

- Australian Heritage Database, including the World, National and Commonwealth heritage lists
- State Heritage Inventory (SHI), including the State Heritage Register (SHR), section 170 registers, and local heritage items
- Schedule 5 of the following environmental planning instruments:
  - Armidale Dumaresq LEP 2012
  - Uralla LEP 2012.

Listed and potential heritage items in, or within 5 km of, the project site are summarised in Table 6.11.

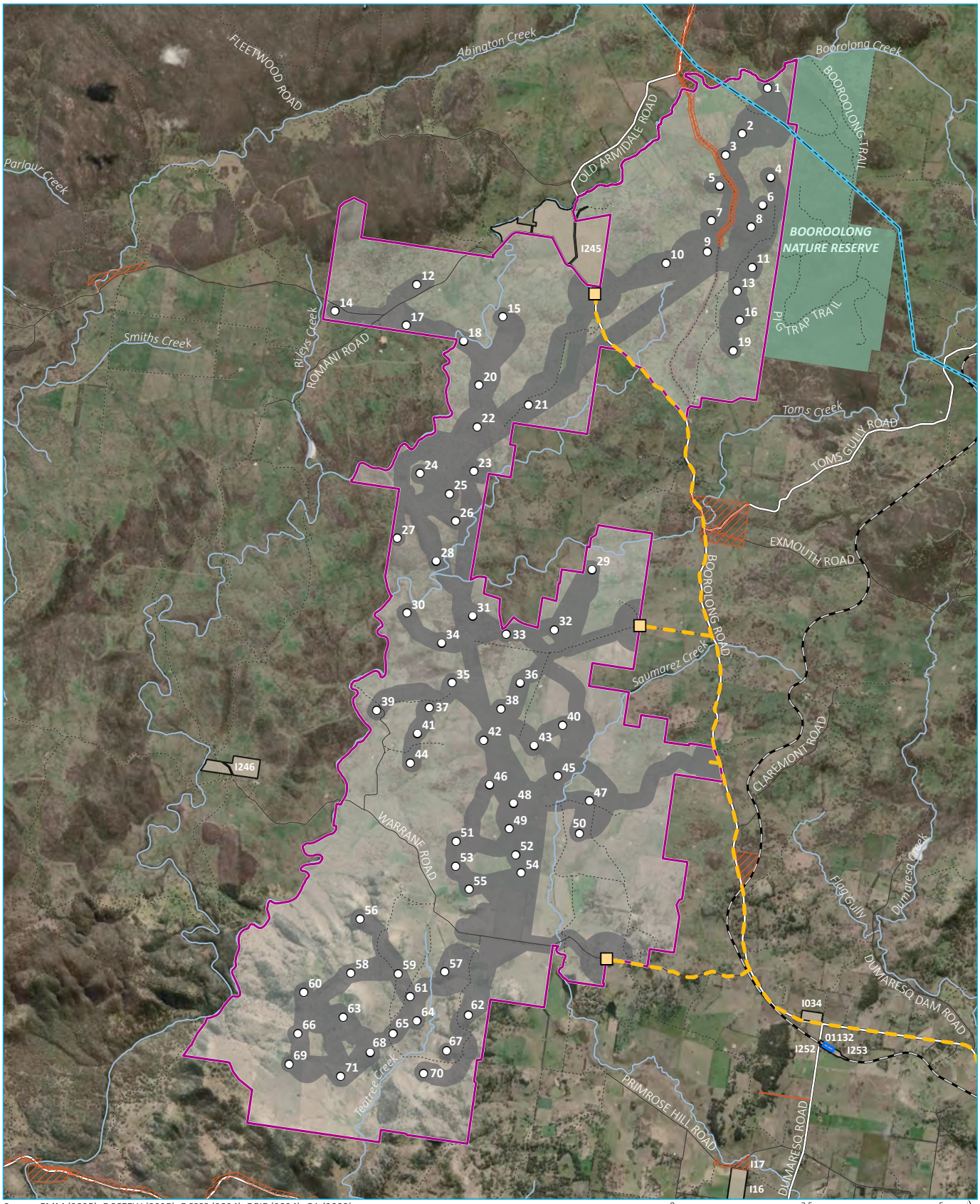
Travelling stock routes/camps are the only potential heritage items within the project site.

There are two properties close to the project site that are listed as being of local significance in Schedule 5 of the Armidale Dumaresq LEP 2012: Boorolong homestead and outbuildings; and Warrane Homestead (Figure 6.9). The project site intersects a small portion of the curtilage of Boorolong homestead and outbuildings.

Table 6.11 Listed and potential heritage items in or within 5 km of the project site

Item	Address	Register	Item ID	Distance from potential impacts (approximate)
Travelling stock routes/ camps	Humpy Bridge: R1526 Tom's Gully Big Paddock; Tom's Gully (Middle); Tom's Gully (South of Road): R568 Glendon Lane: R60692	Travelling Stock Reserves, all Category 2	-	Stock routes traverse the project site (travelling stock route on Glendan Road, portions are road reserve and Crown Land)
Homestead and Outbuildings, "Boorolong"	2344 Boorolong Road, Boorolong. Part of Lot 6, DP 608268; Lot 1, DP 40389; Lot 11, DP 254969	Armidale Dumaresq LEP 2012	I245	Homestead within 300 m north of the project site. Project site intersects curtilage of item
Homestead, "Warrane"	1188 Warrane Road, Boorolong. Lot 47, DP 755806	Armidale Dumaresq LEP 2012	I246	West of the project site, within 1.5 km
Cemetery Ground	178 Ferris Lane, Saumarez. Lot 100, DP 755811	Uralla LEP 2012	I16	South-east of the project site, within 5 km
Beehive Well	178 Ferris Lane, Saumarez. Lot 100, DP 755811	Uralla LEP 2012	I17	South-east of the project site, within 5 km
Dumaresq Railway Station Group—Dumaresq Railway Station building, brick platform face and station signs	537 Dumaresq Road, Dumaresq. Main Northern Railway	State Armidale Dumaresq LEP 2012	01132 1253	East of the project site, within 5 km
Dumaresq Railway Station, Station Master's residence	530 Dumaresq Road, Dumaresq. Lot 1, DP 792093	Armidale Dumaresq LEP 2012	1252	East of the project site, within 5 km

Item	Address	Register	Item ID	Distance from potential impacts (approximate)
Cottage, former post office	800 Boorolong Road, Armidale. Lot 3, DP 982353	Armidale Dumaresq LEP 2012	I034	East of the project site, within 5 km



Source: EMM (2025); DCCEEW (2025); DCSSS (2024); DPIE (2024); GA (2009)

0 2.5 5 km

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KEY

- Project site
- Development corridor
- Indicative wind turbine generator location
- Indicative site access point
- Traffic access route
- Travelling stock reserve

LEP listed heritage item

- Item- General

State heritage register

- Dumaresq Railway Station Group

Electricity transmission line (voltage)

- 330 kV

Existing environment

- Rail line- disused
- Major road
- Minor road
- Vehicular track
- Named watercourse
- NPWS reserve

Listed and potential historical heritage sites

Boorolong Wind Farm
Scoping Report
Figure 6.9

EMM
creating opportunities

6.10.2 Potential impacts

There is the potential for impacts within the curtilage of the Boorolong Homestead and outbuildings (Table 6.11) as a small portion of the curtilage intersects with the project site. Heritage items listed in Table 6.11 are located within a 5 km buffer of the project site and may be subject to indirect visual impacts.

The history of the project site and previous studies in the region indicates there is potential for relics, significant landscape and built heritage in the project site.

Impacts to historical heritage sites will be avoided where possible through project design.

6.10.3 EIS assessment approach

A statement of heritage impact (SoHI) will be prepared if required. The SoHI would be developed with consideration of the following guidelines:

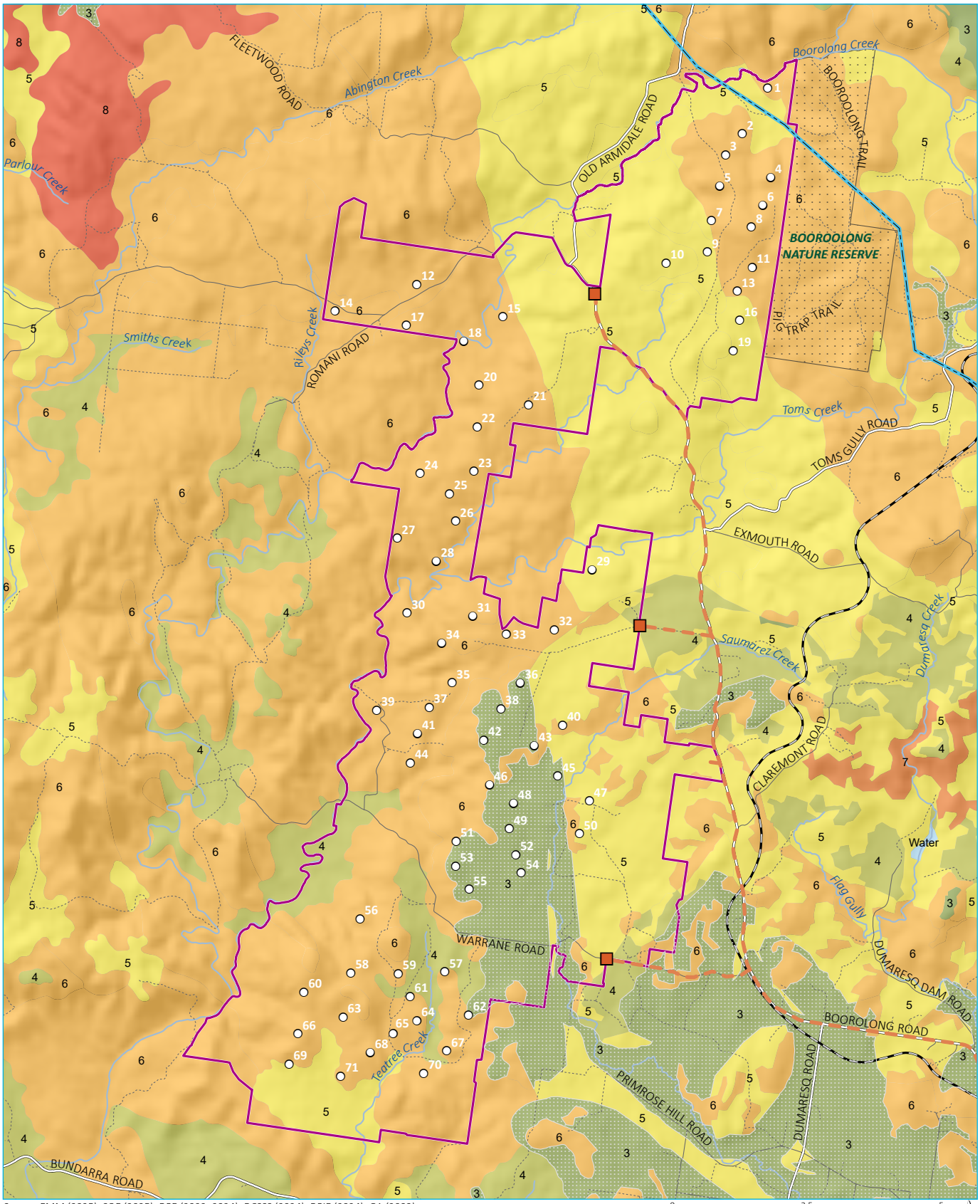
- *Guidelines for Preparing a Statement of Heritage Impact* (DPE 2023b)
- *Assessing Heritage Significance* (DCCEEW 2025b)
- *Assessing Significance for Historical Archaeological Sites and 'Relics'* (DoP 2009)
- *The Burra Charter* (ICOMOS 2013)
- *The Material Threshold Policy* (Heritage NSW 2020).

6.11 Land and soils

6.11.1 Existing environment

The NSW Land and Soil Capability Assessment Scheme, 2nd approximation (OEH 2012) (LSC scheme) assesses the inherent physical capacity of the land to sustain a range of land uses (and management practices) in the long term without leading to degradation of soil, land, air, and water resources. The LSC scheme considers the inherent biophysical features of the land and soil, and their associated hazards and limitations, to these land uses. Each hazard is given a rating between 1 (best, highest capability land) and 8 (worst, lowest capability land).

Land in the project site is mapped (Figure 6.10) as predominately classes 5 and 6, associated with the large areas of Kurosols (Yellow podzolic soils – less fertile and Soloths) and Kandosols (Yellow Earths), reflecting land with moderate-low to low capability and high to very high limitations for high-impact land uses (OEH 2012). Minor areas of Class 4 and 3 (moderate to high capability land respectively) occur with Ferrosols (Krasnozems), Vertosols (Black Earths) and Kurosols (Red Podzolic soils – less fertile).



Source: EMM (2025); SQE (2025); DPE (2022; 2024); DCSSS (2024); DPIE (2024); GA (2009)

0 2.5 5 km

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KEY

- Project site
- Indicative wind turbine generator location
- Indicative site access point
- Traffic access route
- Biophysical Strategic Agricultural Land (BSAL)

Land and soil capability (most limiting)

- 3 | Moderate limitations
- 4 | Moderate to severe limitations
- 5 | Severe limitations
- 6 | Very severe limitations
- 7 | Extremely severe limitations
- 8 | Extreme limitations
- Water

Electricity transmission line (voltage)

- 330 kV

Existing environment

- Rail line- disused
- Major road
- Minor road
- Vehicular track
- Named watercourse
- NPWS reserve

Land and soil mapping

Boorolong Wind Farm
Scoping Report
Figure 6.10

EMM
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6.11.2 Potential impacts

In the absence of suitable controls, construction of the project has the potential to impact topsoil and subsoil through processes such as degradation and loss of topsoil, compaction of soil through vehicle movement and poor reinstatement and soil inversion or mixing resulting in changes in constraints such as salinity and sodicity within the soil profile. These impacts could result in reduction of soil quality that could be deleterious to agricultural productivity and land use after rehabilitation. Impacts to land and soils may result in erosion (see Section 6.8.2) and dust generation (see Section 6.12.2).

6.11.3 EIS assessment approach

Land, soil and erosion assessments will be prepared that includes:

- a description of the biophysical environment (including soil landscapes, soil types and Land Soil Capability (LSC) class)
- an erosion hazard analysis (including site inspection and opportunistic soil sampling to identify site-specific issues and soil characteristics relevant to erosion and sediment control)
- an assessment of the potential impacts of the project on soil, LSC class and agricultural productivity
- a Land Use Conflict Risk Assessment in accordance with the *Land Use Conflict Risk Assessment Guide* (DPI 2011)
- erosion and sediment control measures in accordance with *Managing Urban Stormwater: Soils & Construction* (Landcom 2004)
- recommendations for rehabilitation.

6.12 Air quality

6.12.1 Existing environment

Land use within the project site and surrounds is primarily agricultural, which is likely to influence local and regional air quality. Existing sources of air pollution are expected to typically comprise dust and vehicle and machinery exhaust emissions associated with agricultural production and use of local roads. Wood smoke from bushfires and rural residences heating may also be a source of airborne particulates.

6.12.2 Potential impacts

Construction (and decommissioning) activities, such as earthmoving, vehicle movements, crushing and exhaust emissions, may influence air quality. Dust generation is expected to be localised, unlikely to have significant impacts at receivers, and able to be easily minimised through the implementation of standard construction management measures.

During operations, there may be periods of increased traffic such as during maintenance periods. Dust generation during wind farm operation is less likely than during construction, as exposed areas will have been rehabilitated and vehicle access confined to stabilised tracks.

6.12.3 EIS assessment approach

A quantitative air quality assessment with dispersion modelling is not considered warranted for the project given that there is a low risk of air quality impacts during construction and as there will be no air quality impacts as a result of operations.

Potential impacts to sensitive receivers (human and ecological) from construction dust emissions (including the potential for cumulative emissions due to the possible concurrent construction of the project with other surrounding developments) will be assessed using a qualitative impact assessment approach.

The key environmental benefits of the project relating to greenhouse gas emission reductions will be discussed within the EIS.

6.13 Waste and resource recovery

The EIS will describe the likely waste streams to be generated during construction, operation and decommissioning, and describe measures to manage, reuse, recycle and dispose of this waste in accordance with relevant guidelines. The EIS will be accompanied by a draft waste management plan for the project.

The EIS will consider the potential cumulative impacts of the waste generated from other projects within the region.

6.14 Hazards and risks

6.14.1 Aviation safety

There are small private runways/airstrips within the project site. Armidale Airport is located approximately 12 km south-east of the project site (Figure 6.11). Agricultural aviation activities (e.g. aerial spraying and pest management) occur within and adjacent to the project site.

An aviation impact assessment will be prepared that assesses potential impacts of the project on aviation safety, wake/turbulence issues, and the need for aviation hazard lighting and marking of WTGs and wind monitoring masts. The assessment will consider defined air traffic routes, aircraft operating heights, approach/departure procedures, radar interference, communication systems, navigation aids, and use of emergency helicopter access. It will also consider the potential cumulative impacts of wind farms in the vicinity.

The aviation impact assessment will provide aviation safety advice in respect of relevant requirements of air safety regulations and procedures.

6.14.2 Bushfire

The southern area of the project site is mapped as bushfire prone land (Figure 6.11). Therefore, the project has the potential to be exposed to bushfire risk from grasslands and areas of dense vegetation within and adjacent to the project site. There is also a risk of a fire starting within the project site and spreading to neighbouring properties.

A bushfire hazard assessment will be prepared to identify potential hazards and risks associated with bushfires and to demonstrate compliance with *Planning for Bush Fire Protection* (RFS 2019).

6.14.3 Health

The generation, distribution and use of electricity generates electromagnetic fields (EMF). EMF generated by electrical infrastructure are required to be within exposure limits at ground level for the protection of the general public; so risks to human health from electromagnetic fields associated with wind farm projects are low. Risks associated with human exposure to electromagnetic fields as a result of the project will be addressed in an EMF assessment.

6.14.4 Telecommunications

The Armidale/Uralla region contains a range of telecommunications links, including point-to-point microwave links; meteorological radar; mobile voice and data communications; wireless and satellite internet services; broadcast and digital radio; and broadcast, digital and satellite television.

There is the potential for telecommunications and radar services to be impacted by WTGs through electromagnetic interference (EMI). Telecommunications services in the area were reviewed as part of preliminary project design and appropriate buffer distances applied with the aim of avoiding EMI.

An EMI assessment will be prepared to assess potential impacts on telecommunication services. Management and management measures will be provided if there is the potential for these services to be impacted.

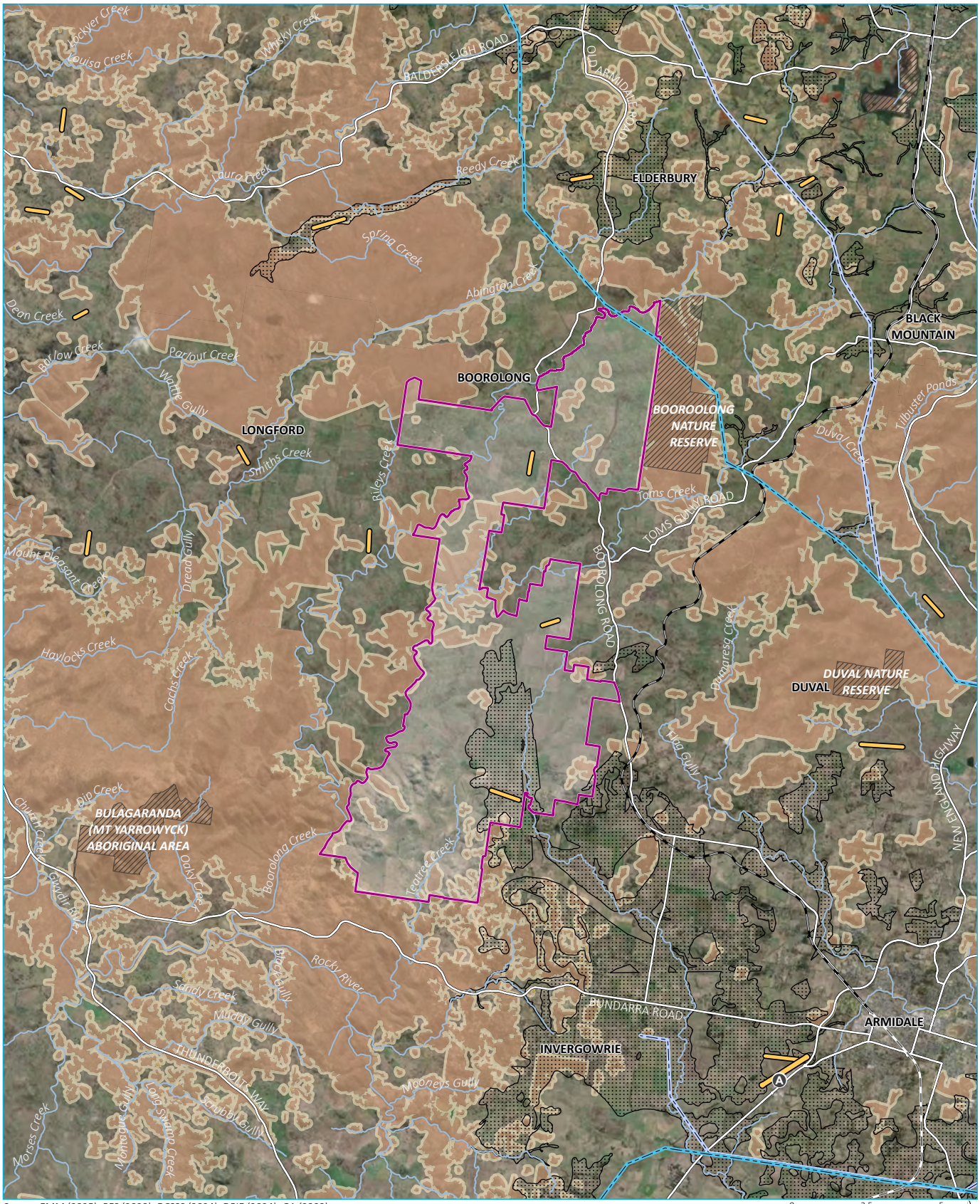
6.14.5 Blade throw

'Blade throw' typically involves the failure of the turbine rotor which has the potential to result in a blade becoming detached from the turbine. Wind farm operators and manufacturers adhere to strict safety standards and conduct regular inspections and maintenance on the turbine blades to mitigate the risk of blade throw.

A blade throw risk assessment will be prepared to assess the likelihood of blade throw and calculate typical blade throw distances to determine appropriate separation distances between WTGs, ancillary facilities, non-associated residences and property boundaries. The assessment will also recommend management measures, such as regular inspections of WTGs, to minimise blade throw risk.

6.14.6 Preliminary hazard analysis

A preliminary hazard assessment (PHA) will be prepared to assess risks associated with the operation of battery storage. The PHA will be prepared in accordance with *Hazardous Industry Planning Advisory Paper No. 6 Hazard Analysis* (DoP 2011) and *Multi-level Risk Assessment* (DPI 2011b).



Source: EMM (2025); RFS (2020); DCSSS (2024); DPIE (2024); GA (2009)

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KEY

- Project site
- Armidale airport
- Airstrip
- Biophysical Strategic Agricultural Land (BSAL)

Bushfire prone land category

- Vegetation Buffer
- Vegetation category 1
- Vegetation category 2

Electricity transmission line (voltage)

- 132 kV
- 330 kV

Existing environment

- Rail line
- Rail line - disused
- Major road
- Named watercourse
- NPWS reserve

Sensitive areas

Boorolong Wind Farm
Scoping Report
Figure 6.11

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Abbreviations

ABS	Australian Bureau of Statistics
ACCKP	Armidale and Region Aboriginal Cultural Centre & Keeping Place
ACHA	Aboriginal Cultural Heritage Assessment
AHIMS	Aboriginal Heritage Information Management System
AEMO	Australian Energy Market Operator
ASGS	Australian Statistical Geography Standard
B4B	Batting for Boorolong
BAM	Biodiversity Assessment Method
BBUS	Bird and bat utilisation surveys
BBAMP	Bird and Bat Adaptive Management Plan
BC Act	NSW *Biodiversity Conservation Act 2016*
BDAR	Biodiversity Development Assessment Report
BESS	battery energy storage system
BOM	Bureau of Meteorology
BOWF	Boorolong Wind Farm Pty Ltd
BPESC	Best practice erosion and sediment control
BSAL	Biophysical Strategic Agricultural Land
CASA	Civil Aviation Safety Authority
CIA	cumulative impact assessment
CIS	Capital Investment Scheme
CPHR	Conservation Programs, Heritage and Regulation Group
CRM	collision risk modelling
CVM	Cultural Values Mapping
DAFF	Department of Agriculture, Fisheries and Forestry
DCCEEW	Department of Climate Change, Energy, Environment and Water
DPE	Department of Planning and Environment
DPHI	Department of Planning, Housing and Infrastructure
DPI	Department of Primary Industries
EIS	Environmental Impact Statement
EMM	EMM Consulting Pty Limited
EMI	electromagnetic interference
Energy Co	Energy Corporation of NSW

EPA	NSW Environment Protection Authority
EPL	environment protection licence
EP&A Act	NSW *Environmental Planning and Assessment Act 1979*
EP&A Regulation	*Environmental Planning and Assessment Regulation 2021*
EPBC Act	Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*
FM Act	*Fisheries Management Act 1994*
GDE	groundwater dependent ecosystems
GLVIA	*Guidelines for Landscape and Visual Impact Assessment Third Edition* (2013)
GW	gigawatts
GWh	gigawatt hours
HNSW	Heritage NSW
HIPAP	Hazardous Industry Planning Advisory Papers
km	kilometre
kV	kilovolt
LCA	land category assessment
LEP	Local Environmental Plans
LLS Act	*Local Land Services Act 2013*
LGAs	Local Government Areas
LRET	Large-scale Renewable Energy Target
LSC Scheme	The NSW land and soil capability assessment scheme, 2nd approximation
LVIA	landscape and visual impact assessment
m	metres
MEG	Mining, Exploration and Geoscience
MNES	matters of national environmental significance
MW	megawatt
MWh	megawatt hours
NEM	national energy market
Net Zero Future	NSW *Climate Change (Net zero future) Act 2023*
NHMRC	National Health and Medical Research Council
NSW	New South Wales
NVIA	noise and vibration impact assessment
O&M	operations and maintenance
OSOM	oversize, over-mass
PCT	Plant Community Type

PHA	preliminary hazard analysis
PMST	Protected Matters Search Tool
POEO Act	NSW *Protection of the Environment Operations Act 1997*
PVIA	preliminary visual impact assessment
RAPs	Registered Aboriginal Party
RED4NE	Responsible Energy Development for New England
REZ	Renewable Energy Zone
SAL	Suburbs and Localities
SEARs	Secretary's Environmental Assessment Requirements
SEPP	State environmental planning policy
SHI	State Heritage Inventory
SHR	State Heritage Register
SIA	Social impact assessment
SII	serious and irreversible impacts
SLR	soil and land resource
SQE	Squadron Energy Development Pty Ltd
SSD	State Significant Development
SSI	State significant infrastructure
SUAs	Significant Urban Areas
SVTM	State Vegetation Type Mapping
TfNSW	Transport for NSW
UCLs	Urban Centres and Localities
Umwelt	Umwelt Pty Ltd
UNE	University of New England
VA Bulletin	Wind Energy: Visual Assessment Bulletin AB 01 For State significant wind energy development (2016)
WTGs	wind turbine generators

Appendix A

Scoping report compliance checklist

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Table A.1 Scoping report compliance checklist

SSD guidelines – preparing a scoping report	Scoping report reference
Introduction	Chapter 1
• the applicant's details, including ABN and address	Table 1.2
A simple but accurate description of the project, including:	-
• a statement of the objectives of the development	Overview 1.1.1
• site information including address and lot details	Section 1.1.2i and Figure 1.3
• a map of the site in its regional setting	Figure 1.1
The background to the project, including:	-
• any relevant history	Section 1.2.1
• key strategies that will be adopted to avoid, minimise or offset the impacts of the project to the extent known at the scoping stage	Section 1.2.2
A description of any related development, including any:	-
• Existing or approved development (including any existing use rights or continuing use rights) that would be:	-
– Incorporated into the project, allowing some or all of the existing development consents or rights for this development to be surrendered if the SSD project is approved and the approved project to operate under a single SSD development	Section 1.3
– Operated in conjunction with the project under a separate development consent for approval	
• Development that is required for the project but would be subject to a separate assessment (e.g. upgrades to ancillary infrastructure, approvals for subsequent stages of the project)	Section 1.3.2
Strategic context	Chapter 2
Key strategic issues may include:	-
• relevant plans that establish regional or local land use planning context for the project, including if the project is linked to a planning process that has already addressed environmental impacts relevant to the project	Table 2.1

SSD guidelines – preparing a scoping report	Scoping report reference
Key features of the site or surrounds that could affect or be affected by the project, including:	-
• the local and regional community, having regard to land ownership and uses in the area and the proximity of any population centres of residences to the site	Section 2.3
• important natural or built features, such as National Parks, scenic landscapes, conservation areas, culturally important landscapes, and major infrastructure (e.g. roads, railway lines, airports, ports, pipelines, transmission lines and water storage and treatment)	Section 2.3.2
• key risks or hazards for the project such as flooding, bushfire prone land, contaminated land, steep slopes and potential landslips, mine subsidence prone land, coastal hazards and climate change	Section 6.14
Whether the project is likely to generate cumulative impacts with other relevant future projects in the area (see the Department's Cumulative Impact Assessment Guidelines for State Significant projects)	Section 2.4
• Identifying whether the applicant has entered into any agreements with other parties to mitigate or offset the impacts of the project, such as: – voluntary planning agreements – negotiated agreements with landholders, including any terms of these agreements that are relevant to the assessment of the impact of the project (see the Department's Voluntary Land Acquisition and Mitigation Policy) – any benefit-sharing schemes	Section 2.5
Project overview	Chapter 3
Provide a simple but accurate overview of the project, using suitable maps, plans, figures and tables.	-
• the project area, including the area likely to be physically disturbed by the project	Section 3.1
• the conceptual physical layout and design of the project, including any mitigation measures that will be built into the design of the project (e.g. a noise barrier) to the extent that these are known at the scoping stage	Figure 3.2
• where relevant or known at the scoping stage, and depending on the type of development, those aspects of the project where some flexibility may need to be incorporated into the design of the project to allow the final design of the project to be refined or changed over time within any strict limits set by the project description in the EIS, and without further approval.	Section 3.1.2
• The likely timing of the delivery of the project, including: – any stages of the project – the phases of the project (e.g. site preparation, construction, operations, and where relevant, decommissioning and rehabilitation) – the sequencing of any stages and phases of the project over time, identifying the periods when the greatest impacts are likely to occur	Section 3.2

SSD guidelines – preparing a scoping report	Scoping report reference
• The main uses and activities that would be carried out on site as well as the materials and products that would be transported to and from the site	Table 3.3
This section should also include a high-level analysis of feasible alternatives considered having regard to the objectives of the development, including: • the consequences of not carrying out the development. The analysis of alternatives should explain how the project has ended up in its current form. It should • summary of the key alternatives that have been considered and rejected (e.g. alternative ways of achieving the objectives of the development and/or alternative siting, designs, and mitigation measures) and reasons why they were rejected. • Where features of the project such as the site location and layout have been finalised through a masterplan or concept development application, these should not be analysed further in the consideration of alternatives.	Section 3.4
Statutory context	Chapter 4
This section should provide a simple overview of the key statutory requirements for the project, having regard to: • the EP&A Act and EP&A Regulation • other relevant legislation (e.g. Biodiversity Conservation Act 2016, Fisheries Management Act 1994, POEO Act 1997, Water Management Act 2000, Mining Act 1992, Petroleum (Onshore) Act 1991, Pipelines Act 1967, Roads Act 1993 and Commonwealth EPBC Act 1999) • relevant environmental planning instruments, planning agreements and coastal management programs under the Coastal Management Act 2016 • relevant approvals (e.g. concept plan approvals, staged DA consents).	Table 4.1
Engagement	Chapter 5
The applicant must identify any engagement that has been carried out that is relevant to setting the SEARs for the project. This may include: • community engagement that has been carried out by other parties that is relevant to the project • any actions taken by the applicant to identify and engage with key groups or individuals within the community that may have an interest in the project • any actions taken by the applicant to inform, consult or engage with the community during the development of the project or preparation of the scoping report to: – get an early indication of community views on the project and what are likely to be key matters requiring further assessment – determine what community engagement should be carried out during the preparation of the EIS.	Section 5.3
If any detailed community engagement reports are prepared during scoping, the applicant should include copies of the reports in the appendices of the scoping report.	BOWF Stakeholder Engagement Plan (link provided) in Chapter 5

SSD guidelines – preparing a scoping report	Scoping report reference
Summarise the key findings of any community engagement that will be carried out during the preparation of the EIS. Link findings of community engagement carried out during scoping and the community objectives. Categorise the key issues raised by the community in a systematic and impartial way and avoid over simplifying or misrepresenting these issues.	Section 5.4
Summarise the community engagement that will be carried out during the preparation of the EIS. The summary in this section must: • identify the key stakeholders (councils, government agencies, special interest groups, people living close to the site) for further engagement, to the extent that this will be known at the scoping stage • describe what actions will be taken to identify and engage with other interested stakeholders during the preparation of the EIS • describe the key actions that will be carried out to: – keep the community informed about the project – obtain feedback from the community on the project – engage with certain stakeholders on the detailed assessment of key matters (e.g. Aboriginal cultural heritage, biodiversity, water, noise, air quality, social) • demonstrate that these actions are consistent with the community participation objectives in the Undertaking Engagement Guidelines for State Significant Projects • describe how the effectiveness of this engagement will be monitored, reviewed and adapted over time to encourage community participation in the project.	Section 5.4
Proposed assessment of impacts	Chapter 6
• Identify the findings and potential impacts of the project during construction and operation for the proposed matters requiring detailed and standard assessments in the EIS.	Section 6.2.1 to Section 6.14.6
• Discusses the ability to avoid, minimise and or offset the impacts of the project relating to key matters such as biodiversity, Aboriginal heritage, and visual.	Sections 6.2, 6.3 and 6.5
• Identifies the key findings and potential key impacts of the project relating to cumulative impacts with relevant future projects.	Section 2.4
• Identifies the matters requiring further assessment in the EIS, the proposed level of assessment (standard or detailed), and the proposed approach to assessing each of these matters, having regard to the key findings and potential impacts of the project.	Section 6.1
Identifies the matters not requiring further assessment and a justification why further assessment is not warranted in the EIS.	Section 6.1 and Appendix C.2
Provides a scoping summary table required by the *Scoping Report Guidelines.*	Appendix C.1

Appendix B
Engagement material

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B.1 Batting for Boorolong engagement material

The key points of engagement between BOWF and Batting for Boorolong (B4B), detailing who from SQE was involved, what actions were taken, when these interactions occurred, and where they took place, are summarised below.

This summary of the main interactions and responses, demonstrates SQE's commitment to addressing the concerns raised by B4B. This provided an overview but does not encompass all communications (such as phone calls, emails, and meetings) with every member of B4B, or cover every issue discussed.

Table B.1 Engagement with B4B – key points

Date	Description
September 2022	**Boorolong District Local Area Committee** Monthly meeting. Boorolong Wind Farm was on the agenda, as many nearby residents had been contacted by SQE in the months prior, to discuss the proposed project. About 50 local community members attended. B4B had not yet formed, however, key (future) members were present. Also, in attendance were: • Squadron Energy - Executive General Manager for Development, BOWF Project Manager, Project Developer and Project Officer • Armidale Regional Council – Mayor and Deputy Mayor • NSW Member for Northern Tablelands
September 2022	**Community information days** A drop in event, open to the public, was held at the Armidale Bowling Club over two days. The drop in event was advertised locally and on social media. Invitations were sent to nearby residents. Nine staff from Squadron Energy were available to answer questions and gather feedback and information, including the Executive General Manager for Development, Head of Project Development, Stakeholder Engagement Manager, BOWF Project Manager, Project Developer and Project Officer. Some of the public who attended the drop in event are now members of B4B.
October 2022	**Traffic counting** The Chairman of the Boorolong Working Group contacted BOWF Project Developer asking whether SQE had installed surveillance cameras on the roads around Boorolong and if so, who they had informed. The Project Developer provided a detailed response by email the following day confirming that there were traffic counters and no surveillance cameras.
June 2023	**Formation of Batting 4 Boorolong (B4B)** The Boorolong Working Group formed 'Batting 4 Boorolong', *"a community group that was formed to advocate for responsible renewable energy development in our region".*
June 2023	**13 requirements (see Table B.2)** B4B sent a letter to SQE which included "a list of 13 requirements that are to be addressed for a whole community acceptance of this project".
July 2023	**13 requirements** SQE Project Manager sent a response to the 13 requirements (Table B.2). B4B sent a letter to SQE CEO requesting a meeting with SQE senior management.
October 2023	**Meeting between B4B and Squadron Energy Senior management** Ten members of B4B met with SQE Head of Project Development, Senior Project Manager and Project Manager to discuss concerns. The meeting took place at Armidale Golf Club. The purpose of the meeting was for the B4B group to voice their concerns to senior management of SQE, and not to provide detailed responses.

Date	Description
December 2023	**Sapphire Wind Farm visit** Offers to local landholders, including many B4B members, to visit Sapphire Wind Farm. There were seven attendees, none of whom identify themselves as B4B members, including the Mayor of Armidale.
January 2024	**Project Update** A project update was provided to B4B from the Project Manager by email on 31 January. As well as the Sapphire Wind Farm site visit, the update outlined progress on discussions with near neighbours and understanding visual impact assessments using the *Draft Wind Energy Guideline* (DPE 2023e).
February 2024	**Project Update** A project update was provided to B4B from the Project Manager by email on 29 February. The update outlined completion of visual impact assessments by an external consultant under the *Draft Wind Energy Guideline* (DPE 2023e). A project newsletter was provided on the same day.
April 2024	**Project Update** A project update was provided to B4B from the Project Manager by email on the 2 April 2024. Internal analysis of the visual impact assessments continued under the draft guidelines in anticipation of the finalisation of the new guidelines. One of the wind monitoring masts was extended from 110 m to 160 m.
April 2024	**Staff changes** B4B was informed that the incumbent Project Manager had left SQE and SQE would recruit for a new Project Manager.
August 2024	**Introduction of new Project Manager** A new Project Manager for the project was appointed and B4B was informed.
September 2024	**Meeting with B4B, SQE PM and First Nations Engagement Lead** This meeting took place at the Armidale Bowling Club and was an opportunity for parties to meet and reset.
November 2024	**Face to Face meetings** Squadron reached out via post, email and phone calls to more than 90 local landholders who had been identified as B4B members, to introduce the new PM and talk about specific landholder concerns about the project. This resulted in three meetings.
January 2024	**Project Update** A general project update was provided to B4B from the Project Manager by email.
March 2024	**Project Update** A general project update was provided to B4B from the Project Manager by email.
April 2024	**Updated layout** The new layout was shared publicly and a commitment to update our response to the 13 requirements was made by SQE.
June 2025	**13 requirements (**Table B.2**)** An update to 13 requirements response provided by SQE (Table B.2). This included a request for B4B to select one of 3 independent Chairs to form a voluntary Community Consultative Committee.
June 2025	**Community Open Day – Drop in session** B4B notified SQE that they would attend the community drop-in session as a group during the final 75 minutes of the session, and requested that SQE answer a list of questions provided, to the group as a whole. Within the 24-hours notice, SQE accommodated the request, and the General Manager - Development was present and available to answer questions from the group for the remainder of the session.

Table B.2 B4B 13 key points and SQE responses

Date	Key points
B4B **June 2023**	**1. 6 kms setback for every turbine and other infrastructure from existing dwellings and housing entitlements.**
SQE July, 2023	There is no mandated setback distance required for turbines within the *Wind Energy Guidelines*: For State Significant Wind Energy Developments December 2016. Instead, a suitable distance for neighbouring dwellings is determined based on environmental constraints, including noise, shadow flicker, and visual, which is assessed on a merit's basis. SQE ensures that turbines will be located to comply with noise limits, which must not exceed 35db for uninvolved dwellings. SQE also ensures that turbines will be located so there is no exceedance of the maximum shadow flicker impact of 30 hours per year for uninvolved dwellings. Both thresholds are mandated by the Guidelines. There are currently no specific setback requirements under the Wind Energy: Visual Assessment Bulletin (Visual Bulletin). The visual impact is subject to the magnitude of change and the sensitivity of the impacted view. Vegetation and topographic features can minimise or eliminate the visual impacts of a turbine. Understanding the visual impact of the project is therefore not represented in the distance setback from a dwelling property. The visual magnitude thresholds shown in the Guidelines and referenced in your letter establish the level of assessment to be applied to individual properties. In accordance with the requirements of the Visual Bulletin, a Preliminary Visual Impact Assessment will be undertaken, followed by a detailed Landscape and Visual Impact Assessment.
SQE June 2025	Our previous response regarding minimum setback distances has changed with the release of the *Wind Energy Guideline* (the guidelines), one of the documents that forms the Renewable Energy Planning Framework released in November 2024 (REPF). There is now a minimum setback distance for wind turbine generators (WTG) to uninvolved dwellings. For a 270-m WTG, as currently proposed for the Boorolong Wind Farm, this minimum setback is 1.7 km. For some dwellings close to the Boorolong Wind Farm, we have received feedback that noise and visual impacts are of concern, and we have adjusted the layout accordingly, increasing the setback distance further beyond the minimum and ensuring the noise and visual impacts of the proposed layout will be allowable under the guidelines. Neighbour agreements and visual mitigation (such as screening) have been discussed, offered and/or negotiated with all landholders with nearby dwellings. This discussion and negotiation will continue throughout the development process
B4B **June 2023**	**2. Adherences to an Environment Protection Plan, to be developed with acceptance of B4B. Ensuring protection of flora, fauna and environment including non-clearing of native woodland.**
SQE July 2023	It is acknowledged that potential impacts on biodiversity are a key issue for large scale projects, including wind farms. To ensure protection of local flora and fauna, fully qualified independent ecologists and Biodiversity Assessment Method (BAM) accredited ecologists are currently undertaking fieldwork (and have been doing so since September 2021) to inform a Biodiversity Development Assessment Report (BDAR). A BDAR assesses the project for potential impacts to biodiversity and identifies the number and class of biodiversity credits that need to be offset to achieve a standard of 'no net loss' of biodiversity. Once Boorolong Wind Farm has an understanding of the impact to biodiversity, we will establish biodiversity offset sites, also known as biodiversity stewardships sites. We will undertake an assessment of the offset property to ensure we are conserving like-for-like species. We will also undertake management actions on the offset sites to ensure continuous improvement to quality of biodiversity. These actions allow us to meet the standard of 'no net loss' of biodiversity. SQE will also prepare an Environmental Management Plan. This plan will describe the management systems that will be in place to protect, minimise, and manage environmental impacts during construction, operation and decommissioning. This Environmental Management Plan will be a condition required by DPE after project approval.

Date	Key points
SQE June 2025	Boorolong Wind Farm has intentionally been sited on land that has predominantly been cleared for farming to minimise impacts to established native vegetation. However, to build the wind farm, there will be some impacts to the remaining onsite vegetation. Layout adjustments to date have sought to minimise disturbance to vegetation. If the project is approved residual impacts will be offset according to the NSW Government's Biodiversity Assessment Method (BAM) and Biodiversity Offsets Scheme, ensuring a consistent and scientifically grounded approach to achieving no net loss of biodiversity. A wind farm with a capacity of 426 MW would avoid about 200,000 tonnes of $C0_2$ emissions per annum, powering up to 230,000 NSW homes. We engage consultants who are appropriately qualified, independent, and approved by the NSW Department of Planning, Housing, and Infrastructure (DPHI). Their involvement ensures the integrity of the plans and assessments provided.
B4B **June 2023**	**3. Respect for the Anaiwan people's unceded sovereignty and adherence to the Anaiwan community's fundamental and internationally recognised rights to Self-Determination and Free Prior and Informed Consent (FPIC) especially in relation to Anaiwan cultural, environmental, and community interests in and around the proposed project area.**
SQE July 2023	SQE staff have been engaging openly and transparently with numerous Anaiwan groups and individuals, providing them with information to enable them to develop an informed position on the project. Early engagement through our cultural values mapping exercise involved a broad range of Anaiwan participants. These participants have and will continue to be consulted through the project. Their contribution will help to shape a proposal that satisfies the concerns of multiple stakeholder groups. SQE believes these steps, together with the project's stakeholder engagement practices, provide a robust and thorough process to provide all impacted First Nations groups, including the Anaiwan, the ability to have strong and informed participation in the development of the project.
SQE June 2025	Our initial response still applies, but in addition, SQE has since established a First Nations Engagement team, who have been providing support for our engagement with all First Nations communities impacted by this project. SQE takes an in-principal approach to Free, Prior and Informed Consent (FPIC), applying it across all projects regardless of land tenure. While not legally required on freehold land, we engage Traditional Owners early, transparently, and respectfully, recognising their ongoing connection to Country. This values-driven approach is increasingly aligned with government expectations, and we are evolving our processes to document and evidence FPIC in support of best practice engagement.
B4B **June 2023**	**4. The project should adhere to all Guidelines as per relevant NSW Planning Department Wind Energy Bulletin and to refer to the increased requirements for 300m proposed turbines.**
SQE July 2023	SQE is committed to adhering to the NSW Wind Energy Guideline, including the Visual Assessment Bulletin for State Significant Wind Energy Development December 2016. SQE has experience applying the Guideline on other wind farm projects that have been approved through the statutory assessment processes, which are now constructed and operational. The assessment process will assess turbines with a tip height of up to 300 m and this will help determine the appropriate dimensions to seek approval for an installation.
SQE June 2025	Again, the guidelines have changed since 2023, however, the project will adhere to all relevant NSW DPHI Guidelines for wind energy for 270-m proposed WTGs.
B4B **June 2023**	**5. Decommissioning/Reconstruction/Rehabilitation Bonds to be held with Bank guarantee for every turbine and other infrastructure development from year 0.**
SQE July 2023	We are assessing options to provide landowners and other interested stakeholders with the confidence that the decommissioning of projects will be fully funded when required to be drawn on. The asset owner (SQE) retains the responsibility for decommissioning/reconstruction/rehabilitation of the project at the end of its useful life. This is mandated in the statutory approvals for the project and reinforced through the individual agreements held with each host landowner. SQE will establish the funding mechanism for these activities as part of the financing of the project, prior to construction.

Date	Key points
SQE June 2025	One of the documents that forms the REPF is the *Private Agreement Guideline*. SQE follows the recommendations for decommissioning in this guideline in our agreements with landowners. The REPF includes a decommissioning cost calculator that landowners can use to ensure there will be adequate funding set aside for decommissioning.
B4B **June 2023**	**6. Agreement to Waste and Resources Management Plan as agreed by B4B.**
SQE July 2023	Waste and Resources Management is relevant during construction, operation and decommissioning. A Management Plan would be developed in accordance with the requirements of any development consent issued by the DPE and will be subject to approval by DPE prior to the commencement of construction. Historically, waste management plans are prepared in accordance with the Environmental Protection Agency Waste Classification Guidelines 2014.
SQE June 2025	As above.
B4B **June 2023**	**7. Agreement to Traffic Management Plan including to air traffic. As agreed by B4B.**
SQE July 2023	The EIS will assess potential impacts to traffic and, transport. SQE will prepare a Traffic Management Plan to the satisfaction of DPE prior to the commencement of construction which will address the impacts and contain mitigation measures identified within the EIS.
SQE June 2025	In addition, as we have done for other projects and in preparation of the Traffic Management Plan (post approval), we will engage with the police, fire service, councils and the local community to identify and understand the specific local traffic and transport characteristics so we can manage impacts appropriately. This might involve avoiding specific times such as the school bus run, stock movement days, special events and so on. We welcome participation from B4B members in this and will extend invitations at the appropriate time.
B4B **June 2023**	**8. Truly independent ENVIRONMENTAL IMPACT STUDY (EIS) Report. Writing Consultants to be approved by B4B.**
SQE July 2023	SQE have engaged an independent and reputable consultant to complete the Scoping Report for Boorolong Wind Farm. The Scoping Report and an EIS must be reviewed and approved by a Registered Environmental Assessment Practitioner (REAP) prior to submission to the NSW Department of Planning and the Environment. The REAP is required to declare that it complies with the requirements pursuant to the *Environmental Planning and Assessment Act 1979*. https://www.planning.nsw.gov.au/policy-and-legislation/planning-reforms/rapid-assessment-framework/registered-environmental-assessment-practitioner-scheme
SQE June 2025	As above.
B4B **June 2023**	**9. All distribution infrastructure to be underground.**
SQE July 2023	The electrical infrastructure to support the project will be designed to minimise potential impacts and be technically and commercially feasible. Underground transmission has a lesser visual impact but a greater ground disturbance and environmental impact. Underground transmission is also not appropriate for some sloped areas and water crossings. SQE will seek to minimise the visual impacts of above ground electrical transmission.
SQE June 2025	As above. We cannot commit to all electrical infrastructure to be underground, but we do commit to minimising the impacts required for a feasible project. We work with host landholders regarding infrastructure on their land, with nearby neighbours regarding visual impacts and electrical design specialists to optimise the result. This is an iterative process.

Date	Key points
B4B **June 2023**	**10. Strategic land use planning, including, exclusion of strategic agricultural land and possible future developments.**
SQE July 2023	Primary production such as grazing and cropping can co-exist with wind farms, particularly with management to avoid or minimise potential indirect impacts to soil and water resources. The project land is suitable for hosting a wind farm project without impacting on the agricultural productivity of the area. The Biophysical Strategic Agricultural Land (BSAL) scheme is aimed at delivering greater protection to agricultural land from the impacts of mining and coal seam gas activity, as these two industries are less likely to co-exist with agriculture. The protection of BSAL is legislated under the State Environmental Planning Policy (Resources and Energy) 2021, which only applies to mining, petroleum production and extractive industry uses. https://www.planning.nsw.gov.au/sites/default/files/2023-03/biophysical-strategic-agricultural-land-mapping-across-nsw-faq.pdf Despite the Planning Policy not applying to wind farms, we have assessed the BSAL mapping and a very small proportion of the project footprint is located on BSAL. We are working with landowners throughout the design of the project to minimise disturbance to agricultural enterprises. The Strategic Land Use Plan for New England North West recognises the potential for renewable energy generation in the region, with a view to also protecting both agriculture and potential renewable energy developments from land uses that may be incompatible with these, such as coal and coal seam gas projects. The proposed Boorolong Wind Farm project and its adjoining properties are currently not zoned for further intensification. In accordance with the Armidale Regional Local Environmental Plan 2012, and the Uralla Local Environmental Plan 2012 the project area and adjoining properties are zoned RU1, which have a minimum lot size of 200 ha and 400 ha respectively. Further intensification is currently prohibited.
SQE June 2025	As shared in 2023, the Boorolong Wind Farm is in line with current strategic land use planning.
B4B **June 2023**	**11. Establishment of a Community Consultation Committee, prior to Scoping Report, with agreed guidelines, with the chair appointed by B4B.**
SQE July 2023	The NSW DPE has advised Squadron Energy that they no longer require Community Consultative Committees (CCC) as part of their assessment requirements (SEARs) or consent conditions. They instead rely on proponents meeting the requirements of the DPE Stakeholder Engagement Guidelines and the Social Impact Assessment Guidelines. In response to B4B's request to establish a CCC, SQE will voluntarily establish a CCC under the same terms that were formally mandated by DPE. An independent chairperson with experience with CCCs will be appointed to fill the role of the chair. SQE is happy to work together with B4B to find someone from DPE's pool of chairpersons to act as chair. https://www.planning.nsw.gov.au/assess-and-regulate/development-assessment/community-consultative-committees/chairpersons
SQE June 2025	The DPHI has a pool of suitably qualified chairpersons appointed to chair CCCs for state significant projects. These individuals are selected based on their expertise in community relations, facilitation, mediation, and understanding of regulatory requirements. You will find enclosed with this letter, CVs of three individuals from the DPHI pool of candidates who have expressed interest in chairing the Boorolong Wind Farm CCC. Please identify which of these candidates you prefer, and I will arrange for their engagement. Once selected, the Independent Chair will take the necessary steps to establish the CCC.
B4B **June 2023**	**12. Agreement by B4B to Terms of Reference (ToR) for an Independent Cumulative Impact Assessment, and to be completed before Scoping Reports.**
SQE July 2023	SQE will assess the cumulative impacts as part of a potential future EIS. Assessing cumulative impacts of all stages of the project is a standard requirement in the SEARs included within the independently prepared Landscape Visual Impact Assessment (LVIA). This will follow the Cumulative Impact Assessment Guidelines for State Significant Developments, and the Visual Assessment Bulletin which includes a methodology for assessing cumulative visual impacts from multiple wind energy developments.
SQE June 2025	As above. Again, note the updated guidelines that will be followed in this assessment.

Date	Key points
B4B **June 2023**	**13. 2 km setback of all turbines from a neighbouring boundary.**
SQE July 2023	There are no mandated setback distance requirements under the provisions of the Wind Energy Guideline: for State Significant Wind Energy Development 2016. An arbitrary setback from properties is inconsistent with the approach to make informed decisions on the project scope based on detailed assessments and stakeholder consultation. Applying a blanket approach may prevent turbines being developed that are otherwise acceptable. The LVIA will assess the visual impacts on a merit's basis.
SQE June 2025	There is still no mandated setback distance from a property boundary in the new guidelines.

Appendix C
Scoping summary table

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C.1 Scoping summary table

Table C.1 Scoping summary table

Level of assessment	Matter	Cumulative Impact Assessment	Engagement	Relevant policies and guidelines	Scoping report reference
Detailed	Biodiversity	Yes For potential impacts to threatened species and threatened ecological communities	Specific – DCCEEW	• *Biodiversity Assessment Method* (DPIE 2020) • Commonwealth EPBC 1.1 *Significant Impact Guidelines – Matters of National Environmental Significance* (Commonwealth of Australia 2013) • Commonwealth EPBC 1.2 *Significant Impact Guidelines – Actions on, or Impacting upon Commonwealth Land and Actions by Commonwealth Agencies* (Commonwealth of Australia 2013) • Commonwealth Department of the Environment – *Survey Guidelines for Nationally Threatened Species* (various) • Policy and Guidelines for Fish Habitat Conservation and Management (DPI 2013) • Guidelines for Fish Friendly Water Crossings (Fairfull, S. and Witheridge, G. 2003)	Section 6.2
	Aboriginal heritage	Yes	Specific – Heritage NSW	• Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW (OEH 2011) • Aboriginal Cultural Heritage Consultation Requirements for Proponents (DECCW 2010) • Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales (DECCW 2010b)	Section 6.3
	Amenity – Noise and vibration	Yes	General	• *Wind Energy Guideline - Technical Supplement* (DPHI 2024d) • Construction Noise and Vibration Guideline (TfNSW 2023) • NSW Noise Policy Industry for Industry (EPA 2017) • NSW Road Noise Policy (DECCW 2011) • Assessing Vibration: A Technical Guideline (DECC 2006)	Section 6.4

Level of assessment	Matter	Cumulative Impact Assessment	Engagement	Relevant policies and guidelines	Scoping report reference
	Amenity - Visual	Yes Regional assessment of potential impacts	Specific – stakeholders including landholders and neighbouring properties	• Wind Energy Guideline – Technical Supplement for Landscape Character and Visual Impact Assessment (DPIE 2024c) • *Guidelines for Landscape and Visual Impact Assessment Third Edition* (LI 2013) (the GLVIA), prepared by the Landscape Institute and Institute of Environmental Management and Assessment • Guideline for landscape character and visual impact assessment (TfNSW 2023) • Transmission Guideline (DPHI 2024e) • Dark Sky Planning Guidelines (DPE, 2023d)	Section 6.5
	Transport and access	Yes Regional assessment of potential impacts	Specific - TfNSW	• Guide to Traffic Generating Developments (RTA 2002) • Austroads Guides to Road Design (various publications) • Austroads Guides to Traffic Management (various publications) • Australian Standard AS 2890 Parts 1 and 2 • *Guide to Traffic Management – Part 3 Transport Studies and Analysis Methods* (Austroads 2020)	Section 6.6
	Social	Yes Specific – government and community stakeholders	Specific – government and community stakeholders	• Social Impact Assessment Guideline for State Significant Projects (DPIE 2023) • Cumulative Impact Assessment Guidelines for State Significant Projects (2022)	Section 6.7
Standard	Economic	Yes Regional assessment of potential impacts	General	N/A	Section 6.7

Level of assessment	Matter	Cumulative Impact Assessment	Engagement	Relevant policies and guidelines	Scoping report reference
	Water	Yes	Specific – NSW DCCEEW and DPI – Fisheries	• Australian and New Zealand Guidelines for Fresh & Marine Water Quality (ANZG 2018 & ANZECC 2000)) • *Australian Rainfall and Runoff* (Ball et al. 2019) • *NSW Water Quality and River Flow Objectives* (DEC 2006) • *Managing Urban Stormwater: Soils and Construction* Volume 1 (Landcom 2004) and Volume 2 (DECC 2008) • *Guidelines for controlled activities on waterfront land* (DPE 2022) • *Neutral or Beneficial Effect on Water Quality Assessment guideline* (WaterNSW 2022) • NSW aquifer interference policy (DPI 2012) – Water • Best practice erosion and sediment control (BPESC) books 1-6 (IECA, 2008) • Liquid Chemical Storage, Handling and Spill Management: Part B Review of Best Practice Regulation (DEC 2005) • Storing and handling liquids - environmental Protection: Participant's Manual (DEC 2007)	Section 6.8
	Aquatic ecology	Yes	Specific – DCCEEW Fisheries NSW	• DPE 2022, Controlled Activities – Guidelines for Watercourse Crossings on Waterfront Land. Department of Planning and Environment • DPE 2022, Controlled Activities – Guidelines for Instream Works on Waterfront Land. Department of Planning and Environment • 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)	Section 6.9

Level of assessment	Matter	Cumulative Impact Assessment	Engagement	Relevant policies and guidelines	Scoping report reference
	Historical heritage	Yes Regional assessment of potential impacts	General	At a minimum, reference to the following will be required: • Legislation – *Heritage Act 1977* (NSW) – *Environmental Planning and Assessment Act 1979* (NSW) – *Environment Protection and Biodiversity Conservation Act 1999* (Commonwealth) • Guidelines – Significant Impact Guidelines 1.1 for Matters of National Environmental Significance**,** 2013, Department of Climate Change, Energy, the Environment and Water – Guidelines for preparing a statement of heritage impact, 2023, Department of Planning and Environment – *Archaeological Assessments,* 1996, Department of Urban Affairs and Planning – *Investigating heritage significance,* 2022, Heritage Council of NSW – Assessing Significance for Historical Archaeological Sites and 'Relics', 2009, Heritage Branch of the Department of Planning – Historical Archaeology Code of Practice, 2006, Department of Planning – Levels of Heritage Significance, 2008, Department of Planning – *Skeletal Remains, 1998,* NSW Heritage Office (republished 2023) • *Burra Charter* (and Practice Notes), ICOMOS, 2013	Section 6.10

Level of assessment	Matter	Cumulative Impact Assessment	Engagement	Relevant policies and guidelines	Scoping report reference
	Land and soils	Yes	General	• Managing Urban Stormwater: Soils and Construction Volume 1 (Landcom 2004) • Managing Urban Stormwater: Soils and Construction Volume 2 (DECC 2008) • Land Use Conflict Risk Assessment Guideline (DPI 2011) • Best Practice Erosion and Sediment Control (IECA 2008) • *Managing Land Contamination: Planning Guidelines State Environmental Planning Policy No 55 Remediation of land* (Department of Urban Affairs and Planning and Environment Protection Authority, 1998) • Soil and Landscape issues in Environmental Impact Assessment (DLWC, 2020) • Consultant reporting on contaminated land. Contaminated Land Guidelines (NSW EPA, 2020)	Section 6.11
	Air quality	Yes	General	• Guidance on the assessment of dust from demolition and construction, Institute of Air Quality Management (IAQM 2014), *www.iaqm/wpcontent /uploads/guidance/dust_assessment.pdf* • Guidance on the Assessment of Dust from Demolition and Construction (GADDC) • the National Greenhouse and Energy Reporting Act 2009 (NGER Act) framework • Approved Methods for the Modelling and Assessment of Air Pollutants in New South Wales (EPA, 2022) (Approved Methods) • National Environment Protection (Ambient Air Quality) Measure 1998 (Air NEPM) • National Environment Protection (National Pollutant Inventory) Measure 1998 (NPI) • Australian Government's Department of Energy's National Pollutant Inventory Guide • Australia's National Greenhouse and Energy Reporting Guidance (NGER, 2020) • International GHG quantification guidance (ISO14064:2006)	Section 6.12
	Waste and resource recovery	Yes	General	• Waste Classification Guidelines, NSW Environment Protection Authority (EPA 2014)	Section 6.13

Level of assessment	Matter	Cumulative Impact Assessment	Engagement	Relevant policies and guidelines	Scoping report reference
	Hazards and risks	Yes	General	• Hazardous Industry Planning Advisory Paper No. 6 – *Guideline for Hazard Analysis* (DoP, 2011) • *Multi-Level Risk Assessment* (DoP, 2011b) • *Hazardous and Offensive Development Application Guidelines: Applying SEPP 33* (DoP 2011) • Environmental Health Risk Assessment, Guidelines for assessing human health risks from environmental hazards (DoHAC 2012) • Methodology for Valuing the Health Impacts of Changes in Particle Emissions (EPA 2013) • Health Impact Assessment: A practical guide (NSW Health 2007)	Section 6.14

C.2 Matters not requiring further assessment in the EIS and justification

Table C.2 Matters not requiring further assessment in the EIS

Matter	Justification for not requiring assessment
Amenity- odour	The project would not involve any activities that would generate substantive odour emissions with the potential for significant impacts. The proposed wastewater management at temporary construction facilities will be documented in the EIS.
Hazards and risks – hazardous and offensive development	Electricity generating works are not an 'industry', nor are they listed in Appendix 3 of *Applying SEPP 33* or IAEA Table II of the MLRA. The amounts of dangerous goods required for the project are predicted to be minimal. However, the estimated amounts would be determined following development of the detailed construction methodology and assessment against the relevant thresholds in *Applying SEPP 33.* This mater will be addressed in the main body of the EIS and hence a detailed or standard assessment will not be required.
Hazards and risks – coastal hazards	There are no coastal hazards within the project area.
Built environment	Several of the key issues discussed throughout Section 6.1. are relevant to the built environment. Scoping of these issues are predominantly addressed in Section 6.7 (Social), Section 6.6 (Traffic and access), and Section 6.5 (Amenity).

Appendix D

Protected matters search tool results

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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. Please see the caveat for interpretation of information provided here.

Report created: 08-May-2025

Summary

Matters of National Environment 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 (Ramsar	4
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	None
Listed Threatened Ecological Communities:	3
Listed Threatened Species:	62
Listed Migratory Species:	9

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 https://www.dcceew.gov.au/parks-heritage/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 Lands:	2
Commonwealth Heritage Places:	None
Listed Marine Species:	20
Whales and Other Cetaceans:	None
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	None
Habitat Critical to the Survival of Marine Turtles:	None

Extra Information

This part of the report provides information that may also be relevant to the area you have

State and Territory Reserves:	4
Regional Forest Agreements:	1
Nationally Important Wetlands:	1
EPBC Act Referrals:	5
Key Ecological Features (Marine):	None
Biologically Important Areas:	None
Bioregional Assessments:	None
Geological and Bioregional Assessments:	None

Details

Matters of National Environmental Significance

Wetlands of International Importance (Ramsar Wetlands) [Resource Information]

Ramsar Site Name	Proximity	Buffer Status
Banrock station wetland complex	1100 - 1200km upstream from Ramsar site	In feature area
Gwydir wetlands: gingham and lower gwydir (big leather) watercourses	200 - 300km upstream from Ramsar site	In feature area
Riverland	1000 - 1100km upstream from Ramsar site	In feature area
The coorong, and lakes alexandrina and albert wetland	1200 - 1300km upstream from Ramsar site	In feature area

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.
Status of Vulnerable, Disallowed and Ineligible are not MNES under the EPBC Act.

Community Name	Threatened Category	Presence Text	Buffer Status
New England Peppermint (Eucalyptus nova-anglica) Grassy Woodlands	Critically Endangered	Community likely to occur within area	In feature 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	In buffer area only
White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland	Critically Endangered	Community likely to occur within area	In feature area

Listed Threatened Species [Resource Information]

Status of Conservation Dependent and Extinct are not MNES under the EPBC Act.
Number is the current name ID.

Scientific Name	Threatened Category	Presence Text	Buffer Status
BIRD			

Scientific Name	Threatened Category	Presence Text	Buffer Status
Anthochaera phrygia Regent Honeyeater [82338]	Critically Endangered	Species or species habitat known to occur within area	In feature area
Aphelocephala leucopsis Southern Whiteface [529]	Vulnerable	Species or species habitat known to occur within area	In feature area
Botaurus poiciloptilus Australasian Bittern [1001]	Endangered	Species or species habitat known to occur within area	In feature area
Calidris acuminata Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat known to occur within area	In feature area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area	In feature area
Calyptorhynchus lathami lathami South-eastern Glossy Black-Cockatoo [67036]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Climacteris picumnus victoriae Brown Treecreeper (south-eastern) [67062]	Vulnerable	Species or species habitat known to occur within area	In feature area
Erythrotriorchis radiatus Red Goshawk [942]	Endangered	Species or species habitat may occur within area	In feature area
Falco hypoleucos Grey Falcon [929]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Grantiella picta Painted Honeyeater [470]	Vulnerable	Species or species habitat likely to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area	In feature area
Lathamus discolor Swift Parrot [744]	Critically Endangered	Species or species habitat known to occur within area	In feature area
Melanodryas cucullata cucullata South-eastern Hooded Robin, Hooded Robin (south-eastern) [67093]	Endangered	Species or species habitat likely to occur within area	In feature area
Neophema chrysostoma Blue-winged Parrot [726]	Vulnerable	Species or species habitat may occur within area	In feature area
Polytelis swainsonii Superb Parrot [738]	Vulnerable	Species or species habitat may occur within area	In feature area
Rostratula australis Australian Painted Snipe [77037]	Endangered	Species or species habitat known to occur within area	In feature area
Stagonopleura guttata Diamond Firetail [59398]	Vulnerable	Species or species habitat known to occur within area	In feature area
Tringa nebularia Common Greenshank, Greenshank [832]	Endangered	Species or species habitat may occur within area	In feature area
CRUSTACEAN			
Euastacus simplex Simple Crayfish, Small Mountain Crayfish [83156]	Endangered	Species or species habitat known to occur within area	In feature area
FISH			
Bidyanus bidyanus Silver Perch, Bidyan [76155]	Endangered	Species or species habitat may occur within area	In buffer area only
Maccullochella peelii Murray Cod [66633]	Vulnerable	Species or species habitat may occur within area	In feature area
FROG			

Scientific Name	Threatened Category	Presence Text	Buffer Status
Litoria castanea			
Yellow-spotted Tree Frog, Yellow-spotted Bell Frog [1848]	Critically Endangered	Species or species habitat likely to occur within area	In feature area
Litoria piperata			
Peppered Tree Frog [1827]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Litoria subglandulosa			
New England Tree Frog, Glandular Frog [1807]	Vulnerable	Species or species habitat may occur within area	In buffer area only
MAMMAL			
Chalinolobus dwyeri			
Large-eared Pied Bat, Large Pied Bat [183]	Endangered	Species or species habitat may occur within area	In feature 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	In feature area
Nyctophilus corbeni			
Corben's Long-eared Bat, South-eastern Long-eared Bat [83395]	Vulnerable	Species or species habitat may occur within area	In feature area
Petauroides volans			
Greater Glider (southern and central) [254]	Endangered	Species or species habitat known to occur within area	In buffer area only
Petaurus australis australis			
Yellow-bellied Glider (south-eastern) [87600]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Petrogale penicillata			
Brush-tailed Rock-wallaby [225]	Vulnerable	Species or species habitat likely to occur within area	In feature 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	In feature area
Potorous tridactylus tridactylus			
Long-nosed Potoroo (northern) [66645]	Vulnerable	Species or species habitat may occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Pseudomys novaehollandiae New Holland Mouse, Pookila [96]	Vulnerable	Species or species habitat may occur within area	In feature area
Pteropus poliocephalus Grey-headed Flying-fox [186]	Vulnerable	Foraging, feeding or related behaviour may occur within area	In feature area
PLANT			
Acacia pubifolia Velvet Wattle [19799]	Vulnerable	Species or species habitat may occur within area	In feature area
Arthraxon hispidus Hairy-joint Grass [9338]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Bertya sp. Clouds Creek (M.Fatemi 4) [84675]	Endangered	Species or species habitat may occur within area	In feature area
Boronia granitica Granite Boronia [18598]	Endangered	Species or species habitat known to occur within area	In feature area
Cadellia pentastylis Ooline [9828]	Vulnerable	Species or species habitat may occur within area	In feature area
Caladenia amnicola [76141]	Endangered	Species or species habitat known to occur within area	In feature area
Callistemon pungens [55581]	Vulnerable	Species or species habitat known to occur within area	In feature area
Dichanthium setosum bluegrass [14159]	Vulnerable	Species or species habitat known to occur within area	In feature area
Diuris eborensis [88275]	Endangered	Species or species habitat may occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
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	In feature area
Eucalyptus caleyi subsp. ovendenii Ovenden's Ironbark [56193]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Eucalyptus mckieana McKie's Stringybark [20199]	Vulnerable	Species or species habitat known to occur within area	In feature area
Eucalyptus nicholii Narrow-leaved Peppermint, Narrow-leaved Black Peppermint [20992]	Vulnerable	Species or species habitat known to occur within area	In feature area
Eucalyptus rubida subsp. barbigerorum Blackbutt Candlebark [64618]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only
Euphrasia arguta [4325]	Critically Endangered	Species or species habitat may occur within area	In feature area
Haloragis exalata subsp. velutina Tall Velvet Sea-berry [16839]	Vulnerable	Species or species habitat may occur within area	In feature area
Lepidium hyssopifolium Basalt Pepper-cress, Peppercress, Rubble Pepper-cress, Pepperweed [16542]	Endangered	Species or species habitat may occur within area	In buffer area only
Picris evae Hawkweed [10839]	Vulnerable	Species or species habitat may occur within area	In feature area
Prasophyllum sp. Wybong (C.Phelps ORG 5269) a leek-orchid [81964]	Critically Endangered	Species or species habitat may occur within area	In buffer area only
Pterostylis metcalfei Metcalfe's Greenhood [65908]	Endangered	Species or species habitat may occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Swainsona murrayana Slender Darling-pea, Slender Swainson, Murray Swainson-pea [6765]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Thesium australe Austral Toadflax, Toadflax [15202]	Vulnerable	Species or species habitat known to occur within area	In feature area
Vincetoxicum forsteri listed as Tylophora linearis [92384]	Endangered	Species or species habitat may occur within area	In buffer area only
REPTILE			
Anomalopus mackayi Five-clawed Worm-skink, Long-legged Worm-skink [25934]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Aprasia parapulchella Pink-tailed Worm-lizard, Pink-tailed Legless Lizard [1665]	Vulnerable	Species or species habitat may occur within area	In feature area
Myuchelys belli Western Sawshelled Turtle [86075]	Endangered	Species or species habitat known to occur within area	In feature area
Uvidicolus sphyrurus Border Thick-tailed Gecko, Granite Belt Thick-tailed Gecko [84578]	Vulnerable	Species or species habitat likely to occur within area	In feature area

Listed Migratory Species [Resource Information]

Scientific Name	Threatened Category	Presence Text	Buffer Status
Migratory Marine Birds			
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area	In feature area
Migratory Terrestrial Species			
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area	In feature area
Motacilla flava Yellow Wagtail [644]		Species or species habitat may occur within area	In feature area
Migratory Wetlands Species			

Scientific Name	Threatened Category	Presence Text	Buffer Status
Actitis hypoleucos			
Common Sandpiper [59309]		Species or species habitat may occur within area	In feature area
Calidris acuminata			
Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat known to occur within area	In feature area
Calidris ferruginea			
Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area	In feature area
Calidris melanotos			
Pectoral Sandpiper [858]		Species or species habitat may occur within area	In feature area
Gallinago hardwickii			
Latham's Snipe, Japanese Snipe [863]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Tringa nebularia			
Common Greenshank, Greenshank [832]	Endangered	Species or species habitat may occur within area	In feature area

Other Matters Protected by the EPBC Act

Commonwealth Lands [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.

Commonwealth Land Name	State	Buffer Status
Communications, Information Technology and the Arts - Telstra Corporation Limited		
Commonwealth Land - Australian Telecommunications Commission [11635]	NSW	In feature area
Education, Science and Training - CSIRO		
Commonwealth Land - Commonwealth Scientific & Industrial Research Organisation [11647]	NSW	In buffer area only

Listed Marine Species [Resource Information]

Scientific Name	Threatened Category	Presence Text	Buffer Status
Bird			

Scientific Name	Threatened Category	Presence Text	Buffer Status
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat may occur within area	In feature area
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area overfly marine area	In feature area
Bubulcus ibis as Ardea ibis Cattle Egret [66521]		Species or species habitat may occur within area overfly marine area	In feature area
Calidris acuminata Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat known to occur within area	In feature area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area overfly marine area	In feature area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area overfly marine area	In feature area
Chalcites osculans as Chrysococcyx osculans Black-eared Cuckoo [83425]		Species or species habitat likely to occur within area overfly marine area	In feature area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]	Vulnerable	Species or species habitat likely to occur within area overfly marine area	In feature area
Haliaeetus leucogaster White-bellied Sea-Eagle [943]		Species or species habitat known to occur within area	In feature area
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area overfly marine area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Lathamus discolor Swift Parrot [744]	Critically Endangered	Species or species habitat known to occur within area overfly marine area	In feature area
Merops ornatus Rainbow Bee-eater [670]		Species or species habitat may occur within area overfly marine area	In feature area
Monarcha melanopsis Black-faced Monarch [609]		Species or species habitat likely to occur within area overfly marine area	In buffer area only
Motacilla flava Yellow Wagtail [644]		Species or species habitat may occur within area overfly marine area	In feature area
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat known to occur within area overfly marine area	In feature area
Neophema chrysostoma Blue-winged Parrot [726]	Vulnerable	Species or species habitat may occur within area overfly marine area	In feature area
Pterodroma cervicalis White-necked Petrel [59642]		Species or species habitat may occur within area	In feature area
Rhipidura rufifrons Rufous Fantail [592]		Species or species habitat known to occur within area overfly marine area	In feature area
Rostratula australis as Rostratula benghalensis (sensu lato) Australian Painted Snipe [77037]	Endangered	Species or species habitat known to occur within area overfly marine area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Tringa nebularia			
Common Greenshank, Greenshank [832]	Endangered	Species or species habitat may occur within area overfly marine area	In feature area

Extra Information

State and Territory Reserves [Resource Information]

Protected Area Name	Reserve Type	State	Buffer Status
Booroolong	Nature Reserve	NSW	In feature area
Bulagaranda (Mt Yarrowyck)	Aboriginal Area	NSW	In buffer area only
Duval	Nature Reserve	NSW	In buffer area only
Mother Of Ducks Lagoon	Nature Reserve	NSW	In buffer area only

Regional Forest Agreements [Resource Information]

Note that all areas with completed RFAs have been included. Please see the associated resource information for specific caveats and use limitations associated with RFA boundary information.

RFA Name	State	Buffer Status
North East NSW RFA	New South Wales	In feature area

Nationally Important Wetlands [Resource Information]

Wetland Name	State	Buffer Status
New England Wetlands	NSW	In buffer area only

EPBC Act Referrals [Resource Information]

Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status
Tilbuster Solar Farm	2020/8716		Post-Approval	In buffer area only
Not controlled action				
Improving rabbit biocontrol: releasing another strain of RHDV, sthrn two thirds of Australia	2015/7522	Not Controlled Action	Completed	In feature area
New England Highway Upgrade	2001/224	Not Controlled Action	Completed	In feature area
Residential Subdivision & Assoc Infrastructure Kareela Road	2005/2102	Not Controlled Action	Completed	In feature area
Not controlled action (particular manner)				

Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status
Not controlled action (particular manner)				
Aerial baiting for wild dog control	2006/2713	Not Controlled Action (Particular Manner)	Post-Approval	In feature area

Caveat

1 PURPOSE

This report is designed to assist in identifying the location of matters of national environmental significance (MNES) and other matters protected by the Environment Protection and Biodiversity Conservation Act 1999 (Cth) (EPBC Act) which may be relevant in determining obligations and requirements under the EPBC Act.

The report contains the mapped locations of:

- World and National Heritage properties;
- Wetlands of International and National Importance;
- Commonwealth and State/Territory reserves;
- distribution of listed threatened, migratory and marine species;
- listed threatened ecological communities; and
- other information that may be useful as an indicator of potential habitat value.

2 DISCLAIMER

This report is not intended to be exhaustive and should only be relied upon as a general guide as mapped data is not available for all species or ecological communities listed under the EPBC Act (see below). Persons seeking to use the information contained in this report to inform the referral of a proposed action under the EPBC Act should consider the limitations noted below and whether additional information is required to determine the existence and location of MNES and other protected matters.

Where data is available to inform the mapping of protected species, the presence type (e.g. known, likely or may occur) that can be determined from the data is indicated in general terms. It is the responsibility of any person using or relying on the information in this report to ensure that it is suitable for the circumstances of any proposed use. The Commonwealth cannot accept responsibility for the consequences of any use of the report or any part thereof. To the maximum extent allowed under governing law, the Commonwealth will not be liable for any loss or damage that may be occasioned directly or indirectly through the use of, or reliance on the contents of this report.

3 DATA SOURCES

Threatened ecological communities

For threatened ecological communities where the distribution is well known, maps are generated based on information contained in recovery plans, State vegetation maps and 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

Threatened, migratory and marine species distributions have been discerned through a variety of methods. Where distributions are well known and if time permits, distributions are inferred from either thematic spatial data (i.e. vegetation, soils, geology, elevation, aspect, terrain, etc.) together with point locations and described habitat; or modelled (MAXENT or BIOCLIM habitat modelling) using point locations and environmental data layers.

Where little information is available for a 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 detailed distribution mapping methods are used to update these distributions when time permits.

4 LIMITATIONS

The following species and ecological communities have not been mapped and do not appear in this report:

- threatened species listed as extinct or considered vagrants;
- some recently listed species and ecological communities;
- some listed migratory and listed marine species, which are not listed as threatened species; and
- migratory species that are very widespread, vagrant, or only occur in Australia in small numbers.

The following groups have been mapped, but may not cover the complete distribution of the species:

- listed migratory and/or listed marine seabirds, which are not listed as threatened, have only been mapped for recorded breeding sites; and
- seals which have only been mapped for breeding sites near the Australian continent

The breeding sites may be important for the protection of the Commonwealth Marine environment.

Refer to the metadata for the feature group (using the Resource Information link) for the currency of the information.

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.

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Appendix E

Social locality and community profile

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E.1 Project social locality determination

Determination of the project's social locality has been informed through understanding of key project activities, the stakeholders likely to be affected by the project, and the regional development and local contexts. The social locality is defined based on the Australian Statistical Geography Standard (ASGS), which is a classification of Australian into a hierarchy of statistical areas (ABS 2021). It is used for the publication and analysis of official statistics and other data, including the ABS Census of Population and Housing. The ASGS statistical areas applied to social locality determination are:

- Suburbs and Localities (SALs) – approximate representation of the officially recognised boundaries of suburbs and localities as defined by the State and Territory governments of Australia
- Urban Centres and Localities (UCLs) – representation of areas of concentrated urban development
- Significant Urban Areas (SUAs) – representation of urban centres, or groups of urban centres, with a population of 10,000 or more
- Local Government Areas (LGAs) – approximate representation of gazetted local government boundaries as defined by each state and territory.

The social locality determined for the project is detailed in Table E.1 and shown in Figure 2.1.

Table E.1 Project social locality mapped to ASGS

Social locality	Geographic area	ASGS statistical area code	Description/relevance to project
Local area	Boorolong	SAL 10497	The project site is located across the area of Boorolong.
	Dumaresq	SAL 11308	The project site is located across the area of Dumaresq.
	Invergowrie	SAL11992	The project site is located near the locality of Invergowrie.
	Saumarez Ponds	SAL13510	The project site is located near the locality of Saumarez Ponds.
Key urban areas	Armidale city	SUA 1002	Armidale is the nearest regional city to the project, located approximately 15 km to the south-east at its closest point.
	Guyra township	UCL 115074	Guyra township is located approximately 24 km north-east of the project site.
	Uralla township	UCL 115143	Uralla township is located approximately 26 km south of the project site.
	Tamworth city	SUA 1032	Tamworth city is a major regional city, located approximately 126 km to the south-west of the project site.
Sub-regional area	Armidale Regional	LGA 10180	The project site is located across the LGAs of Armidale Regional and Uralla.
	Uralla Shire	LGA 17650	

Social locality	Geographic area	ASGS statistical area code	Description/relevance to project
New England REZ	Tenterfield Shire	LGA 17400	The project is located within the New England REZ. The New England REZ spans seven LGAs: Tenterfield Shire, Glen Innes Severn, Inverell, Armidale Regional, Uralla Shire, Tamworth Regional and Walcha.
	Glen Innes Severn	LGA 13010	
	Inverell Shire	LGA 14220	
	Armidale Regional	LGA 10180	
	Uralla Shire	LGA 17650	
	Tamworth Regional	LGA 17310	
	Walcha	LGA 17850	

E.2 Community profile

A community profile is a rich, qualitative description of an area or community, including a discussion of key trends and issues (Vanclay et al. 2015). Community profiles are provided below for each of the local areas and for each of the key urban areas (Table E.1). Key social trends and characteristics of each community are identified by comparing population, dwelling and labour force indicators to those for the New England REZ as a whole.

E.2.1 Local area

The local area comprises the rural and sparsely populated areas of Boorolong and Dumaresq.

i Boorolong

Boorolong is a rural and sparsely populated area which overlaps both Armidale Regional and Uralla Shire LGAs. The area predominantly consists of farming operations and rural homesteads. There were 71 residents in Boorolong at the 2021 Census (ABS 2021). Over the five-year period to 2021, the number of residents in Boorolong declined by 19.3%, from 88 residents to 71 residents. The median age of Boorolong residents is 46 years.

Relative to New England REZ, the population of Boorolong is typically older with a smaller proportion of children (aged 14 years or younger) and has a higher proportion of lone person households, a lower rate of home ownership, and a higher rate of labour force participation (ABS 2021). Boorolong also recorded a higher proportion of residents engaged in voluntary work, with over 20% of residents indicating that they volunteered in the year at the 2021 Census, compared with 17.8% recorded for the New England REZ. A high rate of volunteering within a community is an indicator of social cohesion and connectedness (AIHW, 2023).

However, there are more unoccupied dwellings in Boorolong compared to New England REZ, with over 20% of private dwellings in Boorolong unoccupied at the 2021 Census. Unoccupied dwellings include vacant houses, holidays homes, and dwellings which are vacant because they are due for demolition or repair.

Agriculture is a key industry in Boorolong, with 60.5 % of working residents employed in the agriculture, forestry and fishing industry. Local agricultural operations include cattle farming, and fruit and vegetable growing. There were no unemployed residents in Boorolong at the 2021 Census.

Key natural features in Boorolong include Boorolong Creek and Boorolong Nature Reserve. Boorolong Road is the main road in the suburb, connecting residents to Armidale.

ii Dumaresq

Dumaresq is a rural and sparsely populated area located between Boorolong and the city of Armidale. Dumaresq predominantly consists of farming operations and rural homesteads. At the 2021 Census, Dumaresq had a population of 80 people, which increased by 3.9% in the five years prior (ABS 2021). The median age of Dumaresq residents is 42 years.

Relative to New England REZ, the community of Dumaresq is characterised by higher weekly household incomes, a higher proportion of lone person households, a lower proportion of home ownership and a higher labour force participation rate (ABS 2021). Key employment industries include agriculture, forestry and fishing, and retail trade. Like Boorolong, there were no unemployed residents in Dumaresq at the 2021 Census.

Key features of Dumaresq include Kindly Animal Sanctuary and Dumaresq Dam. Kindly Animal Sanctuary is a not-for-profit animal sanctuary situated on 140 ha. The sanctuary rescues, rehabilitates and rehomes farm and domestic animals as well as wildlife. The Sanctuary is open to the public on limited days through the year.

Dumaresq Dam is located to the south of Dumaresq and can be accessed via Dumaresq Dam Road. It was originally constructed as the source of water supply for Armidale and served this purpose until 1968. It is now a recreation reserve providing opportunities for visitors to engage in bushwalking, swimming, mountain biking, canoeing and kayaking, fly fishing, and bird watching. There is a boat ramp (petrol boats are not allowed), toilets, picnic shelters, and a small playground. The dam is open to the public all year.

iii Invergowrie

Invergowrie is a rural locality south of Boorolong, to the west of Armidale. The area is predominantly farming operations and rural farmsteads. In 2021, Invergowrie had a population of 794 people, which increased by 2.5% from 2016. The median age is 43, which is relatively older than in NSW.

Relative to the New England REZ, Invergowrie is characterised by moderately lower incomes, higher labour force participation, and higher rates of home ownership. A high proportion of the locality works in the education and training industry. This can be attributed to the nearby University of New England Campus. The other most prominent industries include healthcare and social assistance, and construction.

Invergowrie has limited social infrastructure, with a small general store and local post office. There is also a small fire station. Other services such as education and healthcare can be accessed in Armidale, which is approximately 10 minutes' drive from Invergowrie. There is a large reliance on private vehicles in the locality, due to no public transport options.

Key natural features of the locality include broad tree cover and waterways, including Blackfellows Gully and the connecting Mitchells Gully.

iv Saumarez Ponds

Saumarez Ponds is a rural locality south of Dumaresq, between Invergowrie and Armidale. At the 2021 census, Saumarez Ponds had a population of 416 people which declined by 5% from 2016. The area is predominantly rural properties, including farmsteads.

Relative to the New England REZ, Saumarez Ponds is characterised by an older population with higher incomes and a high labour force participation rate. In 2021, the top industry of employment was education and training followed by healthcare and social assistance and construction. This is comparable to the workforce characteristics of the surrounding localities.

Saumarez Ponds has limited social infrastructure, however the locality is in close proximity to Armidale city, where there is a range of services and social infrastructure.

Key natural features of the locality include the Saumarez Ponds (Barry Munday) Recreation Reserve and Saumarez Creek, which flows along the eastern border of the locality. The locality is also home to the Saumarez Homestead, a heritage listed former grazing property.

E.2.2 Key urban areas

Key urban centres are the cities of Armidale and Tamworth and the townships of Guyra and Uralla.

i Armidale city

Armidale city is a key regional city situated at the junction of the New England Highway and Waterfall Way and on the banks of Dumaresq Creek.

The original inhabitants of the Armidale area were the Anaiwan Aboriginal people. European settlement of the area dates from the 1830s, with the township of Armidale established in the late 1840s. Land was mainly used for agriculture, particularly grazing and crop growing. At the 2021 Census, Armidale city recorded 23,967 residents, an increase of 2.6% from 2016 (ABS, 2016, 2021). The median age of Armidale city residents is 36 years.

Relative to New England REZ, Armidale city has a higher proportion of youth (aged 15 to 24 years), a higher proportion of residents who speak a language other than English at home, a lower proportion of homeownership, a higher proportion of social housing dwellings, and a higher unemployment rate – including youth employment (ABS, 2021).

Armidale city is considered the key academic centre in the region and is home to a large number of primary, secondary and tertiary education facilities. The University of New England (UNE) is based in Armidale across several sites. The university has strong links to the agricultural industry and is one of Armidale city's main employers. More than 20% of Armidale employed residents are employed in the education and training industry (ABS 2021b). Other key industries of employment include health care and social assistance, and retail trade.

Key features of Armidale city include the New England Regional Art Museum; the Aboriginal Cultural Centre and Keeping Place; and St Peter's Cathedral. Armidale hosts a number of events and festivals through the year, including the New England Wool Expo and the Autumn Festival.

Armidale city is well connected to public transport options, with Armidale Railway Station served by daily passenger trains to and from Sydney, and Armidale Airport receiving daily flights to and from Sydney.

There are a number of parks within 50 km of Armidale city, including Oxley Wild Rivers National Park, Imbota Nature Reserve, Yina Nature Reserve, Duval Nature Reserve, Boorolong Nature Reserve and Bulagaranda Aboriginal Area. Oxley Wild Rivers National Park contains World-Heritage-listed Gondwana rainforest.

ii Guyra township

Guyra is a township situated midway between Armidale and Glen Innes on the New England Highway within the Armidale Regional LGA. Guyra is a rural service town supporting surrounding agricultural industries. It recorded a population of 2,077 residents at the 2021 Census, which increased from 1,983 people in 2016 (ABS, 2021). The median age of Guyra residents is 44 years.

Relative to New England REZ, Guyra township is characterised by a higher proportion of low-income households with more than a quarter of households earning less than $650 per week, a lower proportion of residents having completed Year 12 or equivalent, and a lower rate of labour force participation (ABS 2021). These indicators suggest that Guyra township has relatively lower socio-economic status. Key employment industries include agriculture, forestry and fishing; healthcare and social assistance; and retail trade.

Guyra is known for its linkages to agricultural enterprises including fine wool and prime lambs, beef cattle, potatoes, and tomatoes. One of the largest greenhouses in the Southern Hemisphere is located in Guyra, consisting of more than 40 ha producing more than 18 million kilograms of tomatoes annually. The main annual celebration held in Guyra is the Lamb and Potato festival held in January. Other events are the Guyra Show, the Rotary Christmas Carnival and the Mountain Bike Challenge. Trout fishing is a popular pastime with local streams stocked yearly.

iii Uralla township

Uralla township is located at the intersection of New England Highway and Thunderbolts Way, between the regional cities of Armidale and Tamworth. Uralla recorded 2,385 residents at the 2021 Census (ABS, 2021). The population of Uralla declined by 1.5 % from the 2016 Census. The median age of Uralla residents is 46 years.

Relative to New England REZ, Uralla township is characterised by an older population with more than one quarter of its residents aged 65 years or older. There are a significantly higher proportion of residents who identify as Aboriginal and/or Torres Strait Islander; a higher proportion of low-income households; a lower rate of labour force participation; and a higher rate of unemployment (ABS 2021). The key employment industries include education and training; health care and social assistance; and construction.

Uralla township supports sheep farming operations in the surrounding area, with the area renowned for its merino sheep.

Uralla has significant heritage value, with more than 50 buildings and sites of heritage significance. Uralla hosts the popular Seasons of New England Expo, which is an annual celebration typically held in March of the producers, makers, creators and musicians of the New England region.

iv Tamworth city

Tamworth city is a key regional city and administrative centre of the north-western region of NSW. Tamworth city and surrounds were originally inhabited by the Kamilaroi people. Tamworth city is the second largest inland city in NSW, with a population of 43,874 people (ABS, 2021). Tamworth city experienced significant population growth over the five years to 2021, growing by 7.0% or 2,868 people, which was higher than the population growth rate recorded for New England REZ as a whole (ABS, 2021). The median age of Tamworth city residents is 37 years.

Relative to New England REZ, Tamworth city is characterised by a higher proportion of residents who identify as Aboriginal and/or Torres Strait Islander; a higher proportion of children and youth; a lower rate of homeownership, with a higher proportion of rented dwellings; and a higher rate of labour force participation (ABS, 2021). Key employment industries include health care and social assistance; retail trade; and manufacturing.

Tamworth is known as the “Country Music Capital of Australia”, annually hosting the Tamworth Country Music Festival. Like Armidale, Tamworth has numerous education facilities. Tertiary facilities include an UNE campus, a University of Newcastle campus and TAFE New England. Agriculture is an important industry in the Tamworth economy. Important agricultural activities include beef, sheep, grain, dairy, poultry and lucerne.

Appendix F
SIA scoping worksheet

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	Social Impact Assessment (SIA) Worksheet				Project name: Boorolong Wind Farm														
PROJECT ACTIVITIES	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				PROJECT REFINEMENT	MITIGATION / ENHANCEMENT MEASURES
Which **project activity / activities** could produce social impacts ?	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	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?
								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?		Secondary data	Primary Data - Consultation	Primary Data - Research		
Free Text	Categories in SIA guideline	Free text	Positive Negative	Yes - this project, Yes - other project, No	Free text	Combined Cumulative Combined and Cumulative No Unknown N/A		Yes No Unknown	Yes No Unknown	Yes No Unknown	Yes No Unknown	Yes No Unknown	Detailed, Standard, Minor, Nothing further on this impact	Free Text			Yes No	Free Text
Construction, Operation	Community; Surroundings	**Reduced sense of place and rural lifestyle** values for landholders and neighbours due to changes to the visual landscape and presence of WTGs	Negative	Yes - other project	Thunderbolt Wind Farm Social Impact Assessment (SIA)	Yes	There are no other wind projects located within a 15 km radius to Project. Nearest wind farm project is Thunderbolt Wind Farm (21 km S of Project).	Yes	Yes	Yes	Yes	Yes	Detailed	Required - Visual Amenity Assessment	Targeted SIA consultation	Targeted research	Yes	Ongoing agreements with landholders and neighbours
Construction	Surroundings; Livelihoods	Potential disruption to agricultural operations due to establishment of Project infrastructure, changes to land use and changes to access	Negative	Yes - other project	Armidale Solar Farm SIA, New England Solar Farm SIA, Guyra Solar Farm SIA, Thunderbolt Wind Farm SIA	Yes	Nearest project is New England REZ Transmission Project (within Project site). Other nearby projects are Tilbuster and Tilbuster 2 Solar Farm (7 km east of Project), Armidale Solar Farm (17 km SE), Olive Grove Solar Farm (17 km SE), Thunderbolt Community Solar Farm (21 km S).	No	Yes	No	Yes	Yes	Detailed	Required	Targeted SIA consultation	Targeted research	No	Host agreement to be developed with landholders and neighbours; Community awareness on co-existence with agriculture and renewable energy operations; complete traffic impact assessment
Construction, Operation	Livelihoods	Reduced agricultural productivity for landholders and neighbours due to increase in biosecurity risk from introduction of weeds	Negative	Yes - other project	Armidale Solar Farm SIA, New England Solar Farm SIA, Guyra Solar Farm SIA, Thunderbolt Wind Farm SIA	Yes	Nearest project is New England REZ Transmission Project (within Project site). Other nearby projects are Tilbuster and Tilbuster 2 Solar Farm (7 km east of Project), Armidale Solar Farm (17 km SE), Olive Grove Solar Farm (17 km SE), Thunderbolt Community Solar Farm (21 km S).	No	Yes	No	No	No	Standard	Required	Broad EIS consultation	Targeted research	No	Host agreement to be developed with landholders and neighbours
Construction	Community; Surroundings	Reduced rural lifestyle values for local area residents due to land clearing and associated loss of known habitats, including koala habitats	Negative	Yes - other project	Armidale Solar Farm SIA, New England Solar Farm SIA, Guyra Solar Farm SIA, Thunderbolt Wind Farm SIA	Yes	Nearest project is New England REZ Transmission Project (within Project site). Other nearby projects are Tilbuster and Tilbuster 2 Solar Farm (7 km east of Project), Armidale Solar Farm (17 km SE), Olive Grove Solar Farm (17 km SE), Thunderbolt Community Solar Farm (21 km S).	Yes	Yes	Yes	Yes	Yes	Standard	Required	Broad EIS consultation	Targeted research	No	
Construction, Operation, D	Health and wellbeing	Perceived deterioration of health outcomes for landholders and local area residents due to noise, dust and traffic generated by Project	Negative	Yes - other project	Thunderbolt Wind Farm SIA	Yes	An increased presence of in renewable energy projects in REZ is likely to exacerbate perceptions of risk to health.	No	No	No	No	No	Minor	Required	Broad EIS consultation	Targeted research	No	
Construction	Livelihoods	Increased competition for construction labour and services in local and regional areas due to increased demand generated by the Project	Negative	Yes - other project	Thunderbolt Wind Farm SIA, Tilbuster Solar Farm, New England Solar Farm SIA, Guyra Solar Farm SIA, Armidale Solar Farm SIA,Olive Grove Solar Farm SIA	Yes	Numerous projects are anticipated to be constructed over next 10 years. Nearby projects include New England REZ Transmission project, Tilbister 2 Solar Farm, UNE Solar Farm, Armidale BESS, Armidale Solar Farm, Olive Grove Solar Farm and Guyra Solar Farm.	Yes	Yes	Yes	Yes	Yes	Detailed	Required	Targeted SIA consultation	Targeted research	No	Economic impact assessment
Pre-construction, Constru	Community; Decision-making systems	Reduced community cohesion for landholders, local communities, local governments and community groups due to perceived inequitable distribution of Project benefits	Negative	Yes - other project	Thunderbolt Wind Farm SIA, Tilbuster Solar Farm, New England Solar Farm SIA, Guyra Solar Farm SIA, Armidale Solar Farm SIA,Olive Grove Solar Farm SIA	Yes	Numerous projects are anticipated to be constructed over next 10 years. Nearby projects include New England REZ Transmission project, Tilbister 2 Solar Farm, UNE Solar Farm, Armidale BESS, Armidale Solar Farm, Olive Grove Solar Farm and Guyra Solar Farm.	Yes	Yes	No	Yes	Yes	Standard	Required	Broad EIS consultation	Targeted research	No	
Construction	Way of life; Accessibility; Surroundings	Reduced access and connectivity on local and regional road networks due to increased heavy vehicle and workforce traffic contributing to traffic congestion and delays	Negative	Yes - other project	Thunderbolt Wind Farm SIA, Tilbuster Solar Farm, New England Solar Farm SIA, Guyra Solar Farm SIA, Armidale Solar Farm SIA,Olive Grove Solar Farm SIA	Yes	Numerous projects are anticipated to be constructed over next 10 years. Nearby projects include New England REZ Transmission project, Tilbister 2 Solar Farm, UNE Solar Farm, Armidale BESS, Armidale Solar Farm, Olive Grove Solar Farm and Guyra Solar Farm.	Yes	Yes	Unknown	Unknown	Unknown	Detailed	Required	Targeted SIA consultation	Targeted research	No	
Pre-construction, Constru	Way of life; Livelihoods	Perceived devaluation of adjacent or nearby properties	Negative	Yes - other project	Thunderbolt Wind Farm SIA	Yes	There are no other wind projects located within a 15 km radius to Project. Nearest project is New England REZ Transmission project. Other nearby projects are Thunderbolt Wind Farm (21 km E). Visual impact assessment, noise impact assessment	No	Unknown	Unknown	Unknown	Unknown	Minor	Required	Broad EIS consultation	Targeted research	No	
Construction	Community	Reduced community cohesion in local area and nearby urban centres due to influx of construction workers	Negative	Yes - other project	Thunderbolt Wind Farm SIA, Tilbuster Solar Farm, New England Solar Farm SIA, Guyra Solar Farm SIA, Armidale Solar Farm SIA,Olive Grove Solar Farm SIA	Yes	Numerous projects are anticipated to be constructed over next 10 years. Nearby projects include New England REZ Transmission project, Tilbister 2 Solar Farm, UNE Solar Farm, Armidale BESS, Armidale Solar Farm.	Yes	Yes	Yes	Yes	Unknown	Standard	Required	Broad EIS consultation	Targeted research	No	
Construction	Community; Accessibility	Increased demand for social and community infrastructure in local area and nearby urban centres due to influx of construction workers	Negative	Yes - other project	Thunderbolt Wind Farm SIA, Tilbuster Solar Farm, New England Solar Farm SIA, Guyra Solar Farm SIA, Armidale Solar Farm SIA,Olive Grove Solar Farm SIA	Yes	Numerous projects are anticipated to be constructed over next 10 years. Nearby projects include New England REZ Transmission project, Tilbister 2 Solar Farm, UNE Solar Farm, Armidale BESS and Armidale Solar Farm.	Yes	Yes	Yes	Yes	Unknown	Standard	Required	Broad EIS consultation	Targeted research	No	
Construction	Way of life; community; accessibility	Increased demand for housing in local area and nearby urban centres due to influx of construction workers	Negative	Yes - other project	Thunderbolt Wind Farm SIA, Tilbuster Solar Farm, New England Solar Farm SIA, Guyra Solar Farm SIA, Armidale Solar Farm SIA,Olive Grove Solar Farm SIA	Yes	Numerous projects are anticipated to be constructed over next 10 years. Nearby projects include New England REZ Transmission project, Tilbister 2 Solar Farm, UNE Solar Farm, Armidale BESS and Armidale Solar Farm.	Yes	Yes	Yes	Yes	Yes	Detailed	Required	Targeted SIA consultation	Targeted research	No	
Construction	Culture	Diminishment of Aboriginal cultural values due to disturbance or displacement of Aboriginal heritage sites and/or artefacts	Negative	Yes - this project	Thunderbolt Wind Farm SIA, Tilbuster Solar Farm, Guyra Solar Farm SIA, Armidale Solar Farm SIA,Olive Grove Solar Farm SIA	No		No	Yes	Unknown	Unknown	Unknown	Detailed	Required	Targeted SIA consultation	Targeted research	No	
Operation	Health and wellbeing	Perceived increased risk to health and safety for landholders and neighbours due to potential for blade throw, aviation incidents and bird strikes	Negative	No		No		No	No	Unknown	Unknown	Unknown	Standard	Required	Broad EIS consultation	Targeted research	No	
Construction, Operation	Way of life; Health and wellbeing; Livelihoods	Generation of employment opportunities for local and regional workers, including Aboriginal people and young people	Positive	Yes - other project		Yes	Numerous projects are anticipated to be constructed over next 10 years. Nearby projects include New England REZ Transmission project, Tilbuster Solar Farm, Tilbister 2 Solar Farm, UNE Solar Farm, Armidale BESS and Armidale Solar Farm.	Yes	Yes	Yes	Yes	Yes	Detailed	Required	Targeted SIA consultation	Targeted research	No	

PROJECT ACTIVITIES	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				PROJECT REFINEMENT	MITIGATION / ENHANCEMENT MEASURES
Which **project activity / activities** could produce social impacts ?	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 **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?	Level of assessment for each social impact	What methods and data sources will be used to investigate this impact? Secondary data	Primary Data - Consultation	Primary Data - Research	Has the project been refined in response to preliminary impact evaluation or stakeholder feedback?	What **mitigation / enhancement measures** are being considered?
Construction, Operation	Livelihoods	Generation of supply and procurement opportunities local and regional businesses	Positive	Yes - other project		Yes	Numerous projects are anticipated to be constructed over next 10 years. Nearby projects include New England REZ Transmission project, Tilbuster Solar Farm, Tilbister 2 Solar Farm, UNE Solar Farm, Armidale BESS and Armidale Solar Farm.	Yes	Yes	Yes	Yes	Yes	Detailed	Required	Targeted SIA consultation	Targeted research	No	
Operation	Livelihoods	Enhanced opportunity for economic diversification for landholders and neighbours operating agricultural businesses	Positive	No		No		No	Unknown	Unknown	Unknown	Yes	Standard	Required	Broad EIS consultation	Targeted research	No	
Construction, Operation	Community; Health and wellbeing; Decision-making systems	Enhanced community cohesion for local and regional communities due to Project-provided community grant fund supporting community initiatives and improvements to social services	Positive	Yes - other project		Yes	Numerous projects are anticipated to be constructed over next 10 years. Nearby projects include New England REZ Transmission project, Tilbuster Solar Farm, Tilbister 2 Solar Farm, UNE Solar Farm, Armidale BESS and Armidale Solar Farm.	Yes	Yes	Yes	Yes	Yes	Detailed	Required	Targeted SIA consultation	Targeted research	No	
Pre-construction, Constru	Community; Surroundings; Decision-making systems	Enhanced community cohesion for landholders and local area residents due to increased interaction with neighbours as a result of the Project	Positive	No		No		No	No	Unknown	Unknown	Yes	Standard	Required	Broad EIS consultation	Targeted research	No	

Appendix G

Preliminary noise impact assessment

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Boorolong Wind Farm

Preliminary Noise Impact Assessment

Prepared for Squadron Energy Pty Ltd

June 2025

Boorolong Wind Farm

Preliminary Noise Impact Assessment

Squadron Energy Pty Ltd

E20159 RP2

June 2025

Version	Date	Prepared by	Reviewed by	Comments
1	3 June 2025	A. Dundon	R. Dodd P. Towler	Submission to Squadron Energy for first draft review
2	18 June 2025	A. Dundon	R. Dodd	Final

Approved by

Alex Dundon
Associate Acoustics Engineer
18 June 2025

Level 4 74 Pirie Street
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ABN: 28 141 736 558

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Annexures

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1 Introduction

Boorolong Wind Farm Pty Ltd (BOWF), 'the Applicant', proposes to develop the Boorolong Wind Farm (the project) near Armidale, within the Armidale Regional Council and Uralla Shire Council local government areas (LGAs) (Figure 1.1). The project will connect into the national electricity market (NEM) via either a new Energy Corporation of NSW (EnergyCo) Energy hub constructed as part of the New England Renewable Energy Zone (REZ) Transmission Project, or alternatively via the Armidale to Dumaresq 330-kilovolt (kV) transmission line, which traverses the northern section of the project site.

The project is within the New England REZ, the location of which "was chosen following a detailed statewide geospatial mapping exercise undertaken by the NSW Government in 2018. This initial analysis sought to identify optimal locations to host renewable energy generation around the State, including areas with strong renewable energy resource potential, proximity to the existing electricity network, and consideration of potential interactions with existing land uses, including agricultural lands and biodiversity conservation."[1] The New England REZ was formally declared by the NSW Minister for Energy under section 19(1) of the *NSW Electricity Infrastructure Investment Act 2020*. The NSW Government intends that the New England REZ will have a network capacity of 8 gigawatts (GW).

The primary objective of the project is to deliver approximately 426 megawatts (MW) of renewable energy into the NSW electrical grid. In doing so, the project will play an important part in achieving the objectives of the New England REZ. It will also provide significant economic stimulus to the region through construction jobs and associated flow-on benefits.

The project is consistent with NSW government policy for development of electricity infrastructure. It will assist in meeting NSW's energy generation and storage requirements, as well as the NSW and Australian Government emissions reduction targets.

The key elements of the project comprise:

- up to 71 wind turbine generators (WTGs) with a total height (tip height) of up to 270 metres (m)
- an installed generating capacity of approximately 426 MW, with the potential to power approximately 230,000 homes once fully operational
- electrical connections between the WTGs and substations – consisting of a combination of underground cables and overhead powerlines
- up to three substations (including a switching substation) and transmission connections to connect the project to an Energy hub or transmission line
- battery energy storage system (BESS) with a capacity of approximately 150 MW and a storage duration of up to four hours
- other permanent ancillary infrastructure including private access roads and tracks, operations and maintenance buildings and facilities
- temporary ancillary infrastructure for activities required onsite (including laydown areas, concrete batching, rock crushing, etc) and offsite (may include sites for gravel and water resources, accommodation, transport logistics, etc) during construction, operation and decommissioning

[1] EnergyCo New England Renewable Energy Zone website https://www.energyco.nsw.gov.au/ne-rez

- potential public road upgrades to facilitate safe site access, and targeted road network upgrades to facilitate delivery of wind turbine components to the site dependent on detailed traffic studies and the NSW Government strategic transport actions for the REZ access.

A comprehensive overview of the key project elements and a detailed project description is provided in Chapter 3 of the Boorolong Wind Farm Scoping Report (EMM 2025).

1.1 Project site

The project site (Figure 1.2) contains all project elements. It is approximately 9,475 hectares (ha). The project site is a conservative area for scoping assessments and contains a broad buffer around key elements of the project, including options for some project components.

The environmental impact statement (EIS) will assess a development corridor within the project site. The application will seek approval for surface disturbance anywhere within the development corridor to provide the flexibility for the detailed design of the project (i.e. micro-siting), while allowing a detailed environmental assessment process to be completed with relevant constraints avoided and setbacks applied. Meteorological masts may be located outside of the development corridor. Based on the current layout, the development corridor is approximately 3,486 ha.

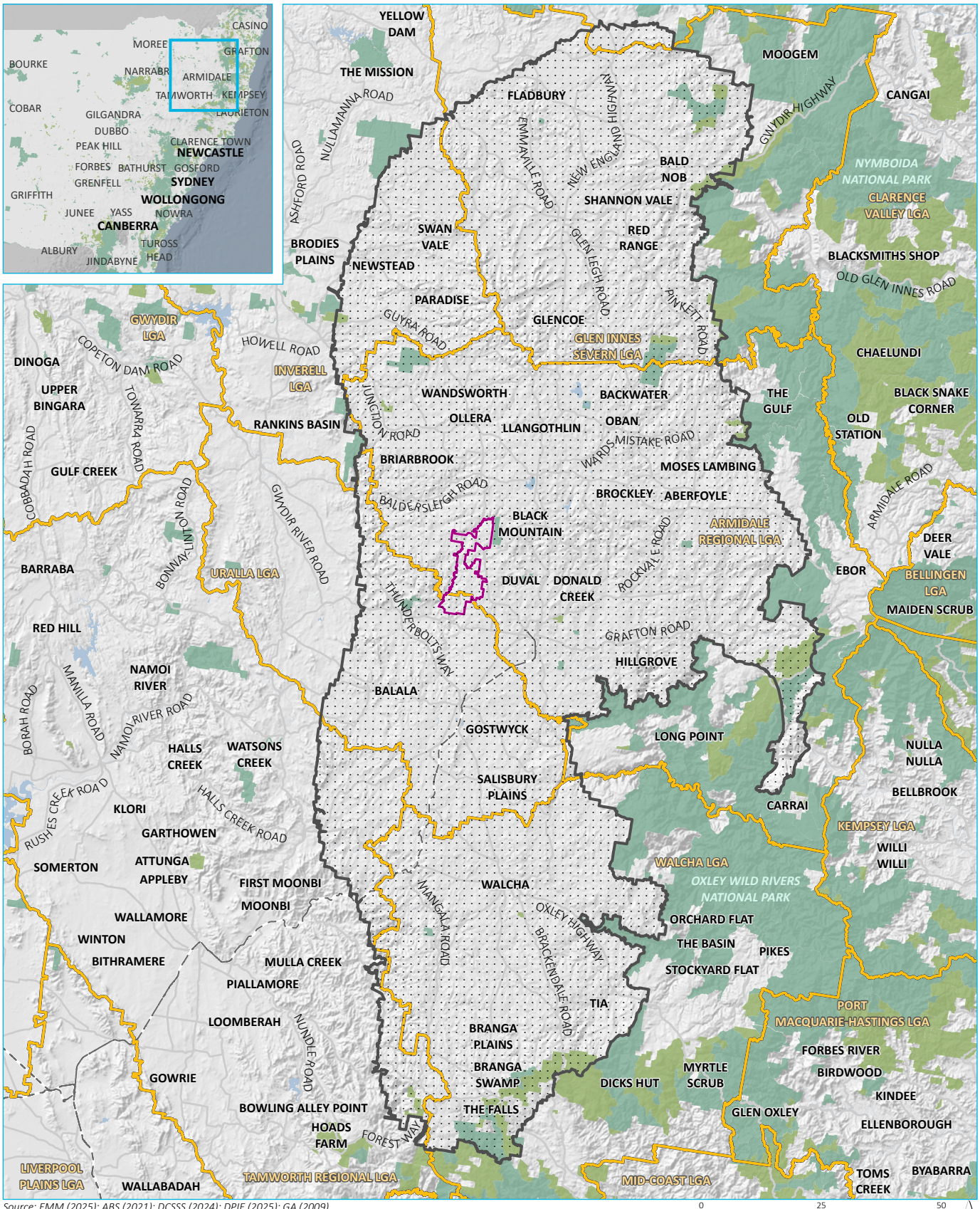
The disturbance footprint will be the area within the development corridor in which the components of the project will be constructed following micro-siting of WTGs, internal access tracks and ancillary infrastructure. The development footprint presented within the EIS will be the indicative extent of the project's actual ground disturbance. It is estimated that the disturbance footprint will be approximately 750 ha.

The area surrounding the project site is sparsely populated. Based on the indicative WTG layout presented in Figure 1.2, there are about 215 non-associated residences within approximately 5 kilometres (km) of proposed WTG locations that have been considered as part of this preliminary noise impact assessment.

1.2 Purpose of this report

This preliminary noise impact assessment (PNIA) has been developed in accordance with the Renewable Energy Planning Framework: Wind Energy Noise Technical Supplement (the Noise Supplement) (DPHI 2024), to provide an initial prediction of noise levels from the project's WTGs (based on a preliminary layout) at associated and non-associated residences. This report forms an appendix to, and should be read in conjunction with, the Boorolong Wind Farm Scoping Report.

This initial assessment will be expanded on with a detailed noise and vibration impact assessment (NVIA) as part of the EIS for the project.



Source: EMM (2025); ABS (2021); DCSSS (2024); DPIE (2025); GA (2009)

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KEY

- Project site

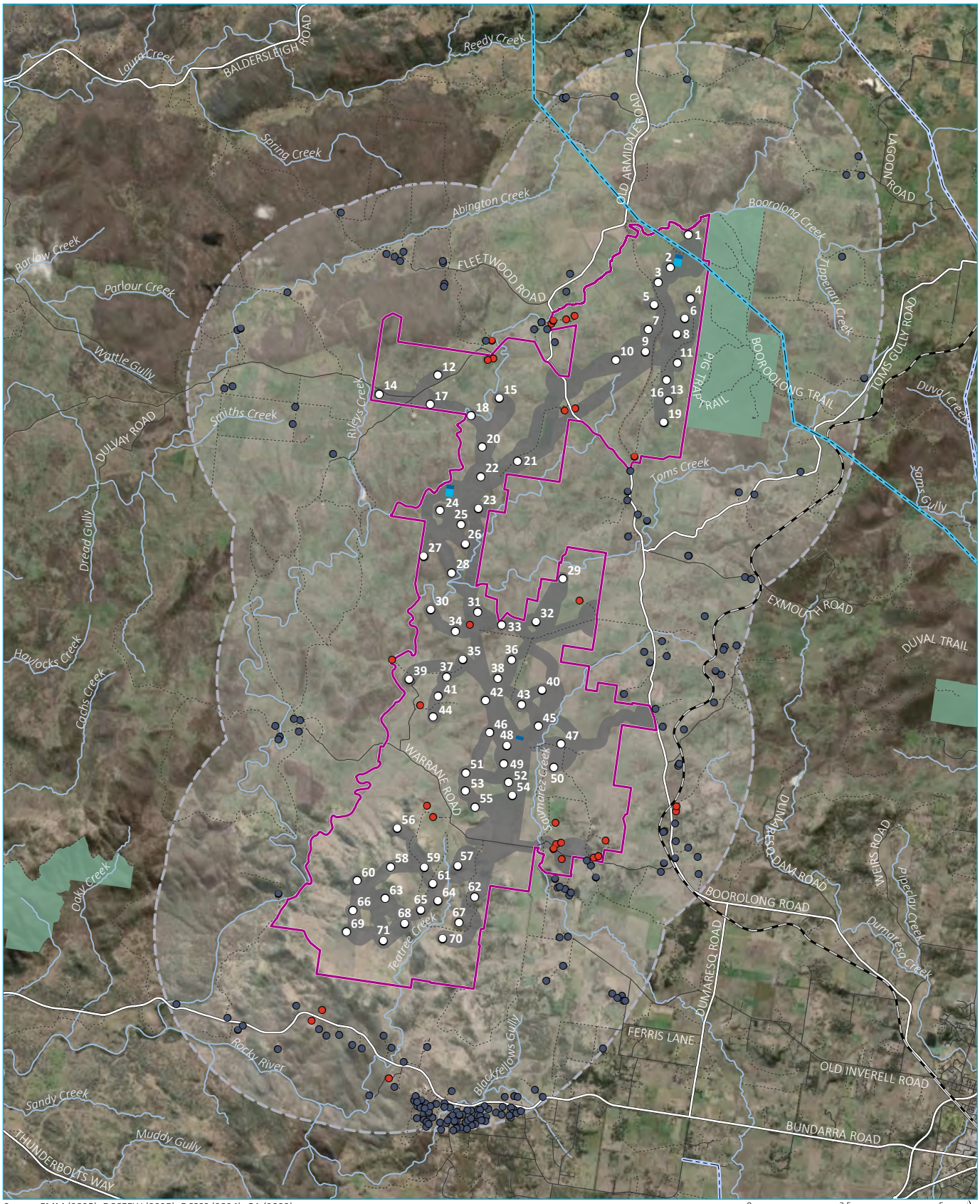
Existing environment

- Rail line
- Major road
- Named waterbody
- NPWS reserve
- State forest
- Local government area
- New England REZ

Regional context

Boorolong Wind Farm
Preliminary Noise Impact Assessment
Figure 1.1

EMM creating opportunities



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Source: EMM (2025); DCCEEW (2025); DCSSS (2024); GA (2009)

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KEY

- Project site
- Development corridor
- Battery energy storage system (BESS)
- Substation
- Sensitive receiver buffer - 5 km
- Associated receiver
- Non-associated receiver
- Indicative wind turbine generator location

Electricity transmission line (voltage)

- 132 kV
- 330 kV

Existing environment

- Rail line- disused
- Major road
- Minor road
- Vehicular track
- Named watercourse
- NPWS reserve

Project site and indicative layout

Boorolong Wind Farm
Preliminary Noise Impact Assessment
Figure 1.2

EMM creating opportunities

2 Modelling inputs

2.1 Wind turbines

The turbine models to be assessed in detail as part of the environmental assessment for project will be selected during further design work. Final turbine selection would be after a tender process for procurement of the turbines only if the project is approved for development. The final selection would include a range of agreed performance conditions, including sound power levels and compliance with noise limits and nearby sensitive receivers.

At this stage, hub heights, sound power levels and rotor blade diameter of the WTG are unknown. However, to complete this preliminary assessment, a maximum sound power level of 107.0 dB(A) was applied to turbines with hub heights of 170 m, and a maximum blade tipheight of 270 m above ground level. This was based on maximum hub heights, blade tip heights and sound power levels over candidate turbines that are being considered for this project.

Given the variability of sound power levels across the candidate turbines, an adjustment for uncertainty was not incorporated into this assessment. As the design progresses into the EIS phase and fewer candidate turbines are considered for this project, the applicability of an adjustment to sound power levels to account for uncertainty will be considered. The results of this assessment will be incorporated into the NVIA report, which will support the EIS.

Spectral data used in the modelling is shown in Table 2.1. Limited information on tonal audibility was provided at this stage. The need for adjustments to account for tonality will be considered during the NVIA and EIS phase.

Table 2.1 Modelled turbine sound power levels

A weighted octave band sound power level, dBA									Overall, dBA
31.5 Hz	63 Hz	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz	
78.8	88.1	93.6	98.1	100.7	102.3	100.1	92.6	76.8	107.0

2.2 Modelling process

At this preliminary stage of assessment, operational wind farm noise levels have been predicted using SoundPLAN version 8.2 software. The method used to predict A-weighted noise levels at nearby sensitive receivers is International Standard ISO 9613-2: 1996 *Acoustics—Attenuation of sound during propagation outdoors – Part 2: General method of calculation* (ISO 9613-2). This algorithm is consistent with the guidance provided by the South Australian *Wind Farm Environmental Noise Guidelines* (SE EPA 2009) referenced by the NSW *Wind Energy Guideline: Technical Supplement for Noise Assessment* (DPE 2024) (the Noise Technical Supplement).

Adjustments to this methodology have been made on the basis of international research and guidance. These are contained in the UK Institute of Acoustics *A good practice guide to the application of ETSU-R-97 for the assessment and rating of wind turbine noise* (IOA Good Practice Guide) (Institute of Acoustics 2013). These adjustments include application of terrain screening and ground effects to ensure consistency with research findings regarding validity of modelling.

3 Noise criteria

The Noise Assessment Guideline provides guidance for how noise impacts should be assessed for large-scale wind energy development projects classified as State Significant Development. The Noise Technical Supplement adopts the South Australian EPA publication *Wind Farms Environmental Noise Guidelines* (Guidelines) to be used as the relevant assessment standard, subject to some variations applicable to assessment of projects within NSW. These variations are related to noise limits, special noise characteristics and noise monitoring.

While the Guidelines generally uses a 40 dB baseline criterion for most projects (except in areas zoned for Rural Living), the Noise Technical Supplement sets a baseline of 35 dB(A). Noise criteria are defined within the Noise Assessment Guideline as follows:

> The predicted equivalent noise level (LAeq,10 minute) adjusted for tonality and low frequency noise in accordance with these guidelines, should not exceed 35 dB(A) or the background noise (LA90(10minute)) by more than 5 dB(A), whichever is the greater, at all relevant receivers for wind speed from cut-in to rated power of the wind turbine generator and each integer wind speed in between.

An outcome of this preliminary noise assessment is to identify locations at which the 35 dB(A) baseline limit may be exceeded, and therefore where background noise monitoring should be completed in order to determine background noise levels in accordance with the Noise Technical Supplement. The outcomes of this background noise monitoring will be used to derive wind farm noise criteria at each integer wind speed.

3.1 Ancillary infrastructure

Operational noise from ancillary infrastructure (transformers, inverters, cooling equipment, batteries) are to be assessed in accordance with the NSW EPA's *Noise Policy for Industry* (NPFI) (EPA 2017). Under the NPFI, project noise trigger levels (PNTLs) are derived as noise criteria for the Project. Derivation of PNTLs and a detailed assessment under NPFI will be completed as part of the NVIA and EIS phase.

4 Assessment results

4.1 Predicted noise levels

The noise model described in previous sections was used to predict resultant noise levels from the proposed WTG locations. In almost all scenarios, noise levels are rounded to the nearest whole integer.

These predictions were carried out on the basis of a 107.0 dBA sound power level, corresponding to a hub height wind speed of 9 metres per second (m/s). The predicted noise levels for non-associated residences where predicted operational levels are above 30 dB are presented in Table 4.1. Tabulated values of all non-associated residences are provided in Annexure A.

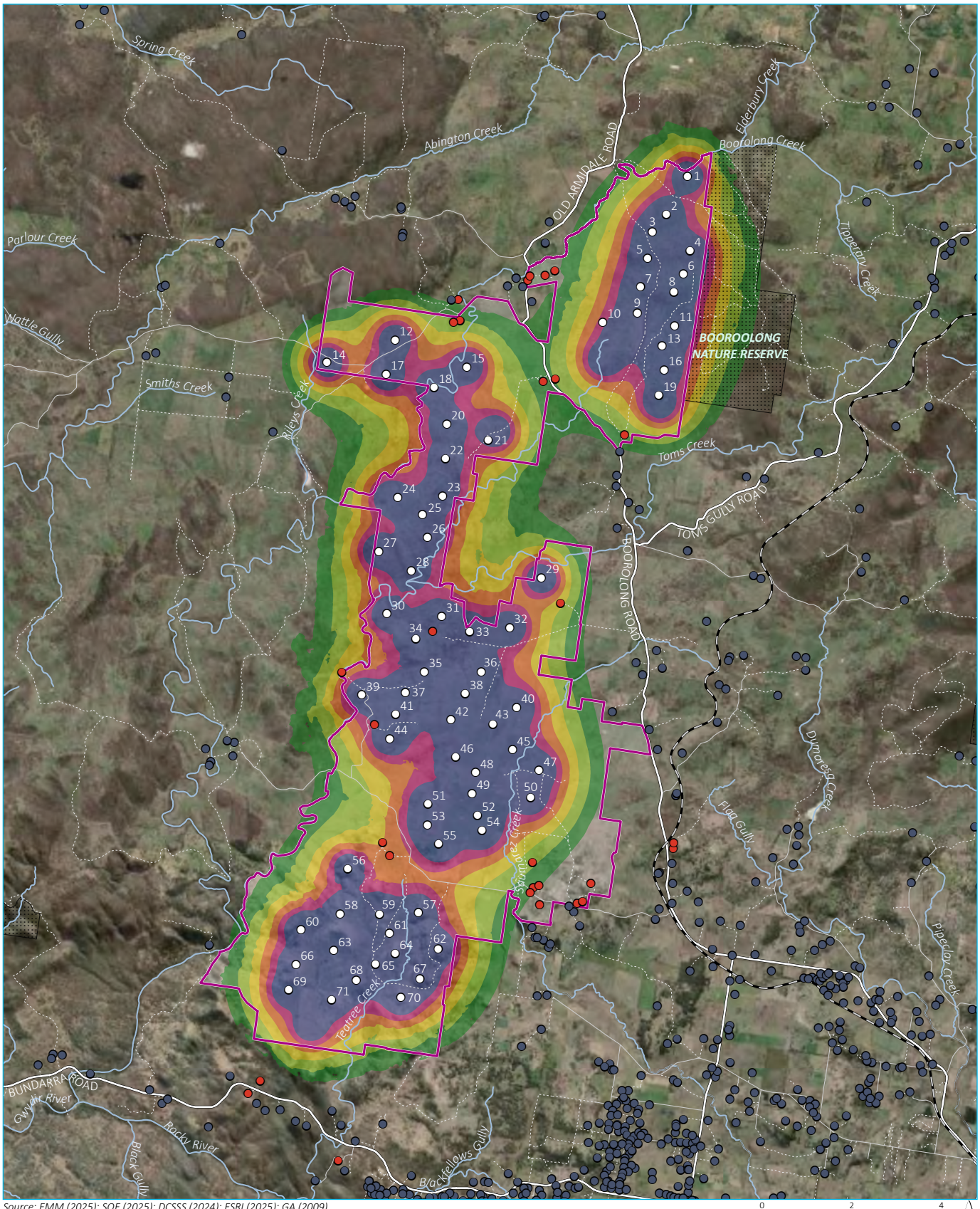
Table 4.1 Predicted noise levels at selected non-associated residences

Receiver ID	Easting	Northing	Distance to nearest WTG (m)	Predicted operational noise level, dBA
BOO077	361134	6640914	1406	33
BOO005	357533	6644295	1506	33
KIA002	359176	6630306	2144	32
BOO002	358970	6644589	2180	31
OAR014	359480	6645577	2299	31
BOO004	358634	6644590	2008	31
WAR022	359243	6630079	2173	31
BOO067	358821	6644784	2266	31
WAR023	359294	6630086	2224	31
OAR013	359564	6646035	2308	31
BOO017	361066	6640368	1894	30
KIA001	359434	6630029	2357	30
BUR047	353120	6626887	1680	30
WAR025	360001	6630782	2566	30
BUR022	353901	6625985	2180	30
WAR024	359547	6629859	2463	30
BOO018	361057	6640134	2103	30
BUR090	354715	6626220	1975	30
WAR021	359586	6629942	2504	30

The preliminary noise assessment found that the 35 dB(A) baseline criterion can be achieved at all non-associated residences (Table 4.1). These predictions indicate that the project can be designed and operated in compliance with the *Noise Technical Supplement*. Predicted noise contours are presented in Figure 4.1.

4.2 Cumulative noise assessment

As of May 2025, there are no constructed wind farm developments within 10 km of the project site. Origin is currently investigating a wind farm approximately 5 km west of the Boorolong Wind Farm (Northern Tablelands Wind Farm), and EDF is investigating a wind farm directly adjacent (west) to the Origin project (Yarrowyck Wind Farm). However, at this stage, there is not sufficient information available to assess cumulative impacts from those projects. There are no other planned wind projects within 10 km of the project site. As such, a cumulative noise impact assessment is currently not required.



Source: EMM (2025); SQE (2025); DCSSS (2024); ESRI (2025); GA (2009)

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KEY

- Project site
- Indicative wind turbine generator location
- Associated receiver
- Non-associated receiver

Noise contours

$L_{Aeq\ 10}$

- 33- 35 dB
- 35- 37 dB
- 37- 39 dB
- 39- 41 dB
- 41- 43 dB
- >43 dB

Existing environment

- Rail line- disused
- Major road
- Minor road
- Vehicular track
- Named watercourse
- NPWS reserve

Noise contours- operations

Boorolong Wind Farm
Preliminary Noise Impact Assessment
Figure 4.1

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5 Detailed noise and vibration assessment

A detailed NVIA will be prepared in accordance with the *Noise Technical Supplement*. It will consider noise impacts to residences and other receivers within the vicinity of the project, and cumulative impacts with surrounding developments.

The NVIA will include:

- construction noise and vibration assessment:
    - identification of construction noise and vibration sources
    - assessment against NSW construction noise and vibration policies (refer below)
    - developing noise mitigation strategies
    - a vibration assessment
    - road traffic noise
- operations noise assessment:
    - noise modelling
    - developing noise mitigation strategies
    - assessment against *Noise Technical Supplement* criteria
    - cumulative noise impacts from surrounding renewable energy projects.

The NVIA will consider the WTG specifications, WTG layout, sound power levels, and uncertainty margins, and any design changes that arise during the preparation of the EIS.

The NVIA will be prepared in accordance with the:

- *NSW Wind Energy Guideline: Technical Supplement for Noise Assessment* (DPE 2024)
- *Interim Construction Noise Guideline* (DECC 2009)
- *Noise Policy for Industry* (EPA 2017)
- *Road Noise Policy* (DECCW 2011)
- *Assessing Vibration: A Technical Guideline* (DEC 2006).

It is proposed to consult with surrounding landholders in relation to noise and vibration as part of the EIS stage.

6 Conclusion

A preliminary noise assessment has been conducted for operational wind turbine noise for the proposed project in accordance with the NSW *Noise Technical Supplement* demonstrating that for the proposed wind turbine technology and turbine locations, the minimum threshold target of 35 dB(A) would be achieved at all non-associated residences under circumstances of maximum noise emissions.

References

DEC 2006, *Assessing Vibration: A Technical Guideline*

DECC 2009, *Interim Construction Noise Guideline*

DECCW 2011, *Road Noise Policy*

DPHI 2024, *Wind Energy Guideline: Technical Supplement for Noise Assessment*

EMM 2025, *Boorolong Wind Farm Scoping Report*

EPA 2017, *Noise Policy for Industry*.

Institute of Acoustics (UK) 2013, *A Good Practice Guide to the Application of ETSU-R-97 for the Assessment and Rating of Wind Turbine Noise*

South Australia EPA 2009, *Wind Farms Environmental Noise Guidelines*

Appendix H
Cumulative impact scoping

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Key	
Detailed assessment	The project may result in significant impacts on the matter, including cumulative impacts. Detailed assessment is characterised by: 1. Potential overlap in impacts between a future project and the proposed project. 2. Potential for significant cumulative impacts as a result of the overlap, requiring detailed technical studies to assess the impacts. 3. Sufficient data is available on the future project to allow a detailed assessment of cumulative impacts with the proposed project for the relevant matter. 4. 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: 1. Impacts are well understood. 2. Impacts are relatively easy to predict using standard methods. 3. Impacts are capable of being mitigated to comply with relevant standards or performance measures. 4. The assessment is unlikely to involve any significant uncertainties or require any detailed cumulative impact assessment.
N/A	Not applicable because: 1. No potential overlap in impacts between a future project and the proposed project that would warrant any consideration in the cumulative impact assessment. 2. Insufficient data is available on the future project, including projects that have not yet been publicly exhibited, to allow a detailed assessment of cumulative impacts with the proposed project for the relevant matter.

Map reference number (Figure 2.3)	Relevant project	Approximate distance	Project status	Terrestrial biodiversity	Aboriginal heritage	Amenity – visual	Amenity - noise	Social and economic	Traffic and access
1	Armidale Battery Energy Storage System	27 km SE	Under assessment[2]	Impacting similar PCTs (<50km)	Regional context	Sufficient separation	Sufficient separation	No construction timing overlap expected	No construction timing overlap expected
2	Armidale East Battery Energy Storage System	30 km SE	Prepare EIS[2]	Impacting similar PCTs (<50km)	Regional context	Sufficient separation	Sufficient separation	Possible construction overlap – resources, accommodation, services and community benefits	Sufficient separation
3	Eastern Hub Firming Battery	30 km S	Prepare EIS[2]	Impacting similar PCTs (<50km)	Regional context	Sufficient separation	Sufficient separation	Possible construction overlap – resources, accommodation, services and community benefits	Sufficient separation
4	Eathorpe Battery Energy Storage System	20 km SE	Prepare EIS[2]	Impacting similar PCTs (<50km)	Regional context	Sufficient separation	Sufficient separation	Possible construction overlap – resources, accommodation, services and community benefits	Sufficient separation
5	Gara Battery Energy Storage System	24 km SE	Prepare EIS[2]	Impacting similar PCTs (<50km)	Regional context	Sufficient separation	Sufficient separation	Possible construction overlap – resources, accommodation, services and	Sufficient separation

								community benefits	
6	Armidale Solar Farm	25 km SE	Approved[3]	Impacting similar PCTs (<50km)	Regional context	Sufficient separation	Sufficient separation	No construction timing overlap expected	No construction timing overlap expected
7	Olive Grove Solar Farm	31 km SE	Approved[3]	Impacting similar PCTs (<50km)	Regional context	Sufficient separation	Sufficient separation	No construction timing overlap expected	No construction timing overlap expected
8	Oxley Solar Farm	33 km S	Approved[2]	Impacting similar PCTs (<50km)	Regional context	Sufficient separation	Sufficient separation	No construction timing overlap expected	No construction timing overlap expected
9	Stringy Bark Solar Farm	33 km SE	Under construction[4]	Impacting similar PCTs (<50km)	Regional context	Sufficient separation	Sufficient separation	No construction timing overlap	No construction timing overlap
10	Thunderbolt Community Solar Farm	40 km S	Approved[3]	Impacting similar PCTs (<50km)	Regional context	Sufficient separation	Sufficient separation	No construction timing overlap expected	No construction timing overlap expected
11	Tilbuster Solar Farm	7 km E	EIS approved[2] Mod 1 under assessment[2]	Impacting similar PCTs (<50km)	Local context	Local visual catchment	Possible construction overlap	Possible construction overlap – resources, accommodation, services and community benefits	Possible construction overlap
12	Deeargee Solar Farm	34 km S	Prepare EIS[2]	Impacting similar PCTs (<50km)	Regional context	Sufficient separation	Sufficient separation	Possible construction overlap – resources, accommodation, services and community benefits	Sufficient separation
13	Hillview Solar Farm	45 km S	Prepare EIS[2]	Impacting similar PCTs (<50km)	Regional context	Sufficient separation	Sufficient separation	Possible construction	Sufficient separation

								overlap – resources, accommodation, services and community benefits	
14	Salisbury Solar Farm (Walcha Energy Project)	43 km S	Investigation Area	Impacting similar PCTs (<50km)	Regional context	Sufficient separation	Sufficient separation	Possible construction overlap – resources, accommodation, services and community benefits	Sufficient separation
15	Tilbuster 2 Solar Farm	13 km E	Prepare EIS[2]	Impacting similar PCTs (<50km)	Local context	Sufficient separation	Sufficient separation	Possible construction overlap – resources, accommodation, services and community benefits	Possible construction overlap
16	Guyra Solar Farm	37 km NE	Under construction[3]	Impacting similar PCTs (<50km)	Regional context	Sufficient separation	Sufficient separation	No construction timing overlap	No construction timing overlap
17	Metz Solar Farm	42 km SE	Approved[2]	Impacting similar PCTs (<50km)	Regional context	Sufficient separation	Sufficient separation	No construction timing overlap	No construction timing overlap
18	UNE Solar Farm	9 km SE	Operational[3]	Impacts completed	Local context	Sufficient separation	Sufficient separation	No construction timing overlap	No construction timing overlap
19	New England Solar Farm (include mod 1 and mod 2)	17 km S	EIS, Mod 1 & Mod 2 Approved[2]	Impacting similar PCTs (<50km)	Regional context	Sufficient separation	Sufficient separation	No construction timing overlap expected	No construction timing overlap expected
20	Thunderbolt Wind Farm	32 km SW	Approved[2]	Impacting similar PCTs (<50km)	Regional context	Sufficient separation	Sufficient separation	No construction timing overlap expected	No construction timing overlap expected

21	Rangoon Wind Farm	40 km NE	In planning[3]	Impacting similar PCTs (<50km)	Regional context	Sufficient separation	Sufficient separation	No construction timing overlap expected	No construction timing overlap expected
22	Armidale Regional Landfill	25 km SE	Mod 3 Approved[2]	Impacting similar PCTs (<50km)	Regional context	Sufficient separation	Sufficient separation	No construction timing overlap expected	No construction timing overlap expected
23	UNE New Wright Block	7 km SE	Approved[2]	Impacting similar PCTs (<50km)	Local context	Sufficient separation	Sufficient separation	Possible construction overlap – resources, accommodation, services and community benefits	Possible construction overlap
24	Hillgrove Mine	38 km SE	EIS approved[2] Mod 5 in planning[2]	Impacting similar PCTs (<50km)	Regional context	Sufficient separation	Sufficient separation	No construction timing overlap expected	No construction timing overlap expected
25	Hillview Wind Farm	45 km S	Prepare EIS[2]	Impacting similar PCTs (<50km)	Regional context	Sufficient separation	Sufficient separation	Possible construction overlap – resources, accommodation, services and community benefits	Sufficient separation
26	Uralla Energy Park	30 km SW	Investigation area[3]	Impacting similar PCTs (<50km)	Regional context	Sufficient separation	Sufficient separation	Possible construction overlap – resources, accommodation, services and community benefits	Sufficient separation
27	Yarrowyck Wind Farm	12 km W	Investigation area[3]	Impacting similar PCTs (<50km)	Local context	Local visual catchment	Sufficient separation	Possible construction overlap –	Possible construction overlap

				Potential operational impacts to birds and bats				resources, accommodation, services and community benefits	
28	Northern Tablelands Wind Farm	5 km W (adjacent to the project site)	Investigation area[3]	Impacting similar PCTs (<50km) Potential operational impacts to birds and bats	Local context	Local visual catchment	Possible construction & operational overlap	Possible construction overlap – resources, accommodation, services and community benefits	Possible construction overlap
29	New England REZ Transmission Project	NW (adjacent to the project site)	Prepare EIS[2]	Impacting similar PCTs (<50km)	Overlap in impact areas	Local visual catchment	Possible construction & operational overlap	Possible construction overlap – resources, accommodation, services and community benefits	Possible construction overlap
30	New England Highway Upgrade	15 km E (main access)	Approved[2]	Impacting similar PCTs (<50km)	Regional context	Sufficient separation	Sufficient separation	No construction timing overlap expected	No construction timing overlap expected

Notes:

1. Status as of April 2025
2. Project status obtained from the NSW Major Planning Portal (Major Projects | Planning Portal - Department of Planning and Environment)
3. Project status from Energy Co's interactive map (EnergyCo's Interactive Map | Energy Corporation of NSW)
4. https://www.planningportal.nsw.gov.au/planning-panel/299mw-solar-farm

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