Saltbush Wind Farm

Scoping Report

PREPARED FOR

Hay Plains WF Pty Ltd

DATE
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REFERENCE
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SIGNATURE PAGE

Saltbush Wind Farm

Scoping Report

0709246

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ACRONYMS AND ABBREVIATIONS

Acronyms	Description
ABS	Australian Bureau of Statistics
ACHAR	Aboriginal Cultural Heritage Assessment Report
AEMO	Australian Energy Market Operator
AHD	Australian Height Datum
AHIMS	Aboriginal Heritage Information Management System
ASC	Australian Soil Classification
BAM	Biodiversity Assessment Method
BC Act	Biodiversity Conservation Act 2016
BDAR	Biodiversity Development Assessment Report
BESS	Battery Energy Storage System
BSAL	Biophysical Strategic Agricultural Land
CHMP	Cultural Heritage Management Plan
CL Act	*Crown Land Management Act 2016*
Conargo LEP	Conargo Local Environmental Plan 2013
DCCEEW	Department of Climate Change, Energy, the Environment and Water
DER	Distributed Energy Resources
DPHI	Department of Planning, Housing and Infrastructure (formerly Department of Planning and Environment (DPE))
EDM	Electronic Direct Mail
Edward River CSP	Edward River Council 2018-2030 Community Strategic Plan
Edward River LSPS	Edward River Council Local Strategic Planning Statement 2020-2040
EIS	Environmental Impact Statement
EMF	Electromagnetic Field
EP	Energy Park
EP&A Act	*Environmental Planning and Assessment Act 1979*
EPBC Act	*Environmental Protection and Biodiversity Conservation Act 1999*
ERM	Environmental Resources Management Australia
GHG	Greenhouse gas

Acronyms	Description
GW	Gigawatt
GWh	Gigawatt hours
Ha	Hectare
IAP2	International Association for Public Participation 2
IBRA	Interim Biogeographic Regionalisation for Australia
ISP	Integrated System Plan
kV	kilovolt
LALC	Local Aboriginal Land Council
LGA	Local Government Area
LSC	Land Soil Capability
MNES	Matters of National Environmental Significance
MW	Megawatt
NEM	National Electricity Market
NSW	New South Wales
PBA	Preliminary Biodiversity Assessment
PCT	Plant Community Type
PEC	Project EnergyConnect
POEO Act	*Protection of the Environment Act 1997*
PVIA	Preliminary Visual Impact Assessment
REAP	NSW Renewable Energy Action Plan
RET	Renewable Energy Target
REZ	Renewable Energy Zone
RMRP	Riverina Murray Regional Plan 2041
RNE	Register of the National Estate
SA1	ABS Statistical Area Level 1 dataset
SEARs	Secretary's Environmental Assessment Requirements
SEED	Sharing and Enabling Environmental Data
SEIFA	ABS Socio-Economic Indexes for Areas
SEPP	State Environmental Planning Policy

Acronyms	Description
SIA	Social Impact Assessment
SSD	State Significant Development
STE	State and Territory
TEC	Threatened Ecological Community
TfNSW	Transport for New South Wales
TTIA	Traffic and Transport Impact Assessment
UCLs	ABS Urban Centres and Localities dataset
WF	Wind Farm
WTG	Wind Turbine Generator

GLOSSARY

Term	Description
Project Area	The term Project Area refers to all affected lots where the Project may be located
The Project	In this report, the Project refers to the proposal by the Proponent Hay Plains WF Pty Ltd to construct and operate the Saltbush Wind Farm Booroorban as described in this Scoping report.
The Proponent	Hay Plains WF Pty Ltd

1. INTRODUCTION

Hay Plains WF Pty Ltd (The Proponent) proposes to construct and operate the Saltbush Wind Farm ('the Project'), a renewable energy development located 43 km south of Hay (by road) in the Riverina Murray Region of New South Wales (NSW) (**Figure 1-1**). The Project is a proposed wind farm (WF) and battery energy storage system (BESS) comprised of several allotments (**Figure 1-2**) located off the Cobb Highway, north of Wargam Road. The Project Area is situated approximately 3. km south of Project EnergyConnect, which is a proposed 330 kV transmission line between South Australia and New South Wales with a total length of 900 km (**Figure 2-4**).

The wind farm is anticipated to consist of approximately 70 wind turbine generators (WTGs) with an installed capacity of up to approximately 400 MW, and a BESS with an installed capacity of approximately 600 MW based on the current project layout. The Proponent is seeking State Significant Development (SSD) Consent under Division 4.7, Part 4 of the *Environmental Planning and Assessment Act 1979* (EP&A Act) for the Project.

The Proponent has engaged Environmental Resources Management Australia Pty Ltd (ERM) to prepare a Scoping Report for the Project, as a first step in the SSD application process. The Scoping Report supports an application to the Secretary of the NSW Department of Planning, Housing and Infrastructure (DPHI) for issue of the Secretary's Environmental Assessment Requirements (SEARs). The SEARs will guide the preparation of an Environmental Impact Statement (EIS) for the Project.

1.1 PROPONENT

Octopus Group is one of the largest owners of renewable energy projects in Australia and Europe. Octopus Group was founded in the UK in 2000 and today has over 800 global employees and manages in excess of $23 billion for more than 60,000 private investors and institutions.

Domestically, Octopus Investments Australia is building a portfolio of renewable energy assets that will help Australia lower its carbon emissions and meet its renewable energy targets. Octopus Investments Australia is responsible for managing over $1 billion, across construction and operational assets.

The Saltbush Wind Farm joins Octopus' expanding portfolio of renewable energy projects in Australia. Since entering the Australian market in 2018, Octopus has invested in renewable energy projects in Queensland, New South Wales and Victoria including the operational 180MW Dulacca Wind Farm, and 333MW Darlington Point Solar Farm, generating a combined 1,315GWh of renewable energy per year.

Octopus Investments Australia is committed to best practice community and stakeholder engagement through transparent and open communication, taking into account even the smallest voices, making communication and engagement open to all.

Hay Plains WF Pty Ltd is an Octopus Group subsidiary and is the Proponent for the Project. The relevant contact details for the Proponent are:

- Hay Plains WF Pty Ltd ACN: 666 759 146
- Address: Level 33, 101 Collins Street, Melbourne VIC 3000

1.2 PROJECT OVERVIEW

The Project involves the construction, operation and decommissioning of a wind farm and associated infrastructure. **Table 1-1** summarises the key indicative Project components and specifications.

TABLE 1-1 INDICATIVE PROJECT DESIGN – COMPONENTS AND SPECIFICATION

Component	*Feature*	*Specification*
Energy generation	Wind turbine generators	Approximately 70 turbines
		Up to 280 m tip height
		Capacity of approximately 400 MW
Electrical Reticulation Network	On-site substations	New high voltage substation proposed on the western side of the Project Area
	Internal electrical reticulation network, underground and overhead	Electrical reticulation is subject to further detailed design
	Switchyard	Switchyard and other electrical equipment providing connection to Project EnergyConnect
	Battery Energy Storage System	Capacity of approximately 600 MW / 1,200 MWh
Access Roads	Access to site and turbines	Access via Cobb Highway and internal access roads

The indicative Project layout for the WTGs is displayed in **Figure 3-1**. This is subject for further assessment and confirmation during the EIS phase.

The EIS and associated technical assessments will further assess identified constraints. Further refinements and changes to the project layout may be proposed in the EIS as well as strategies to minimise and mitigate potential impacts from the Project.

1.3 PROJECT OBJECTIVES

The objectives of the Project are to:

- Provide a source of renewable energy to supplement NSW and National energy requirements and assist in reducing greenhouse gas (GHG) emissions;
- Contribute to the additional generating capacity required to meet the growing energy demand in NSW and the generation shortfalls predicted as coal fired power stations reach the end of their operational lives;

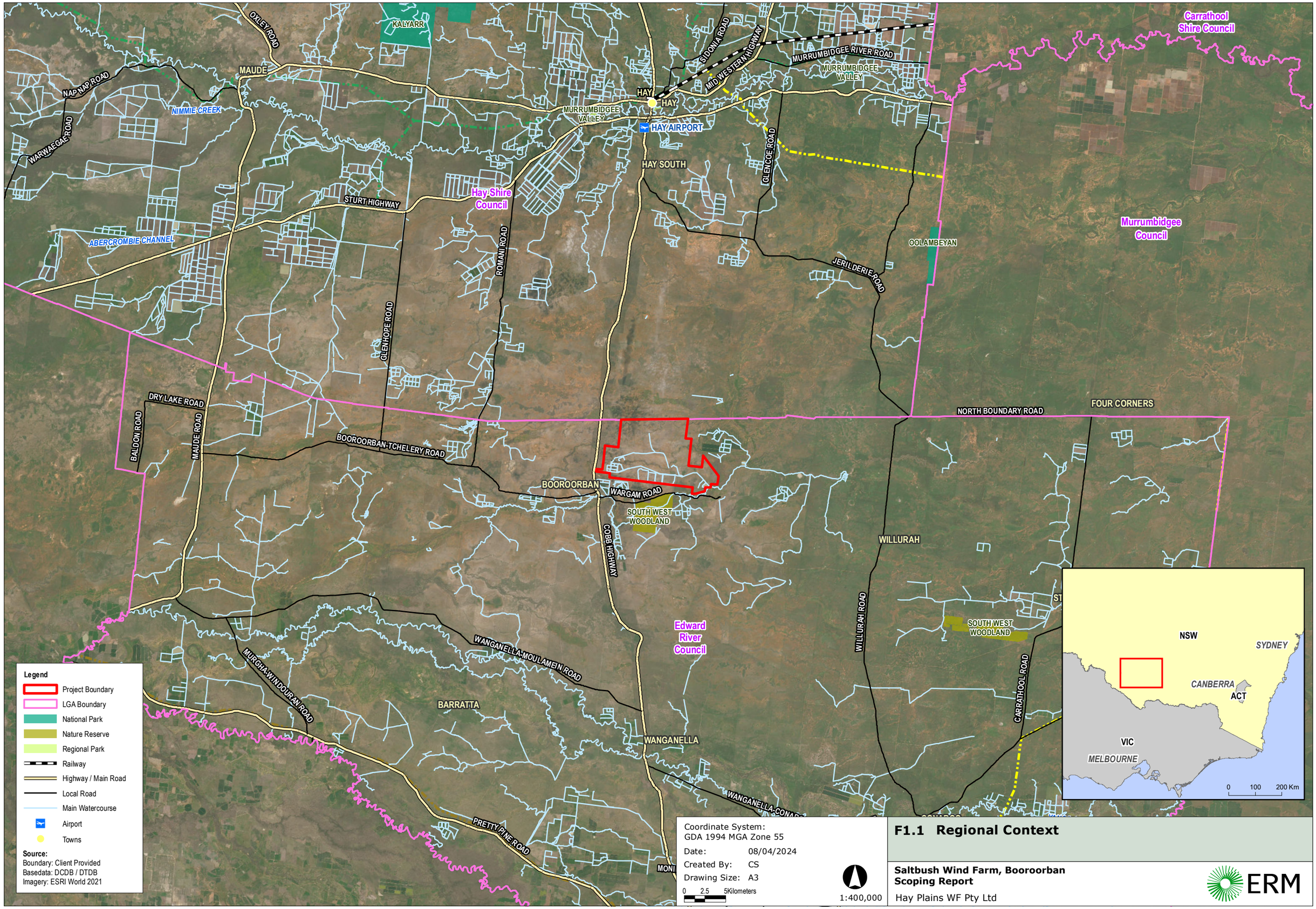
- Assist in providing network stability and reliability through battery storage;
- Contribute to NSW and Commonwealth targets for renewable energy;
- Provide both direct and indirect employment opportunities during construction and operation;
- Provide additional income streams for associated landholders and ensure minimal impact to existing agricultural activities during operations;
- Provide broader financial benefits to the community through the community enhancement fund and neighbour benefits;
- Liaise and work with the community and all potentially affected stakeholders in the identification, mitigation and/or monitoring of any potential environmental effects;
- Ensure quality, safety and environmental standards are maintained;
- Recycle and reuse materials where practical and economically feasible;
- Minimise all potential adverse environmental impacts and enhance the natural environment where possible through dedicated programs and initiatives during the operational phase; and
- Ensure the project decommissioning and rehabilitation activities at end of life allow the land to be returned to its former use.

1.4 PURPOSE OF THIS REPORT

This Scoping Report supports an application for SEARs which will guide the development of the EIS to support a future SSD application under Part 4 of the EP&A Act.

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

- State Significant Development Guidelines - Preparing a Scoping Report: Appendix A to the State Significant Development Guidelines (DPIE, 2021a) (Scoping Report Guidelines);
- Social Impact Assessment Guideline for State Significant Projects (DPIE, 2021b);
- Cumulative Impact Assessment Guidelines for State Significant Projects (DPIE, 2022c);
- Undertaking Engagement Guidelines for State Significant Projects (DPIE, 2021d);
- Wind Energy Guideline for State Significant Wind Energy Development (DPIE, 2016a); and
- Wind Energy: Visual Assessment Bulletin for State Significant Wind Energy Development (DPE, 2016).



F1.1 Regional Context

Saltbush Wind Farm, Booroorban
Scoping Report

Hay Plains WF Pty Ltd

ERM

Legend

- Project Boundary
- Crown Land
- Lot
- Highway / Main Road
- Local Road
- Track-Vehicular
- 220kV Transmission Line
- Project Energy Connect Augmentation Corridor - Eastern Section, Approved Sept 2022

Source:
Boundary: Client Provided
Basedata: DCDB / DTDB
Imagery: ESRI World 2021

WEST BURRABOGIE ROAD
COBB HIGHWAY
BOOROORBAN-TCHELERY ROAD
WARGAM ROAD
BOOROORBAN

Coordinate System:
GDA 1994 MGA Zone 55

Date: 18/04/2024
Created By: CS
Drawing Size: A3

0 1 2Kilometers

1:100,000

F1.2 Project Area and Cadastre

SALTBUSH WIND FARM Scoping Report
Hay Plains WF Pty Ltd

ERM

2. STRATEGIC CONTEXT

2.1 COMMITMENTS TO RENEWABLE ENERGY

2.1.1 FEDERAL COMMITMENTS

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

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

The Federal Government committed to achieving net zero greenhouse gas emissions by 2050 ahead of the G20 Summit in Rome and the Glasgow United Nations climate discussions (COP26). The Project will assist in delivering on this key commitment for Australia.

2.1.2 STATE COMMITMENTS

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

In May 2023 EnergyCo released the Network Infrastructure Strategy for NSW (NIS) which outlines a 20-year plan for the state's electricity network and the target to deliver a total capacity of 12 gigawatts of renewable electricity generation and 2 gigawatts of long-duration storage within the REZs by 2030. The Strategy also includes a "Secure Now" and "Plan for the Future" which seek to identify options for increases in network capacity and resilience into and beyond 2030. The Project is located within the South West REZ identified by the NIS, which is incorporates Hay NSW and surrounds.

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

The Project is consistent with the NSW Government's objectives and targets for the reduction of GHG emissions and investment in renewable energy technology and supports regional investment and development.

2.1.3 REGIONAL AND LOCAL PLANS

The development of renewable energy is supported by relevant regional and local plans and strategies which have been outlined in **Table 2-1** below, and include:

- Riverina Murray Regional Plan 2041;
- Edward River Council Local Strategic Planning Statement 2020-2040; and
- Edward River Council Community Strategic Plan 2018-2030.

2.1.4 ALTERNATIVE SOURCING OF ENERGY

Other forms of large-scale renewable energy accounted for in the RET include hydro, biomass, solar and tidal energy. With the exception of solar energy, these alternative sources are in the early stages of development and are generally not 'market ready' nor as viable as wind energy in Australia.

Due to the abundance of wind resources, sparsely populated locality, and the proposed route of Project EnergyConnect, it is considered that large-scale wind technology is an optimum form of energy generation.

The Project is at scale potentially adding significant amounts of renewable energy supply over a 30-year period.

2.1.5 CONTRIBUTION TO THE NATIONAL ELECTRICITY MARKET

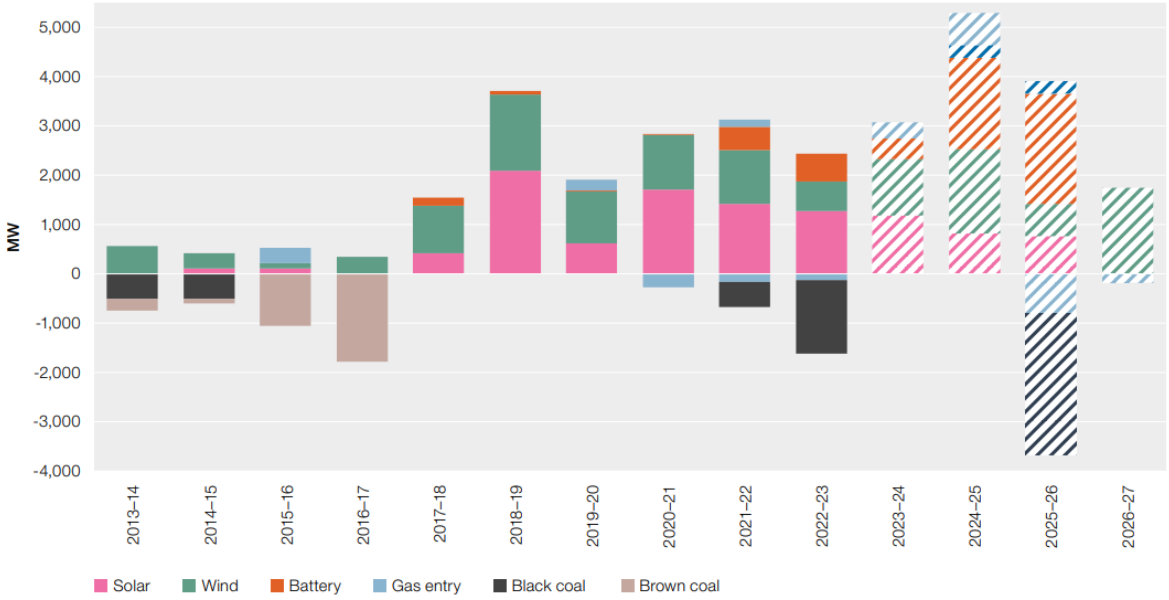
The National Electricity Market (NEM) operates as a power system to deliver electricity from generators to market consumers, through an extensive transmission and distribution network comprising of around 40,000 km of transmission lines and cables. The NEM services the entire eastern and south-eastern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

The Australian Energy Market Operator's (AEMO) 2022 Electricity Statement of Opportunities provides updated forecasts for demand and supply of electicity, focusing commentary on the next 10 years, and includes forecasts over the next 30 years (AEMO, 2022). The 2022 report noted:

- Electricity consumption is forecast to grow over the forecast horizon, as distributed wind uptake continues;
- Growth in electricity demand is driven by the commercial sector and an acceleration in the rate of electrification, particularly electric vehicles (EVs);
- Maximum electricity demand is forecast to grow over the forecast horizon, broadly in tune with drivers affecting energy consumption growth. The operation of solar farms, battery storages, EVs and demand side response is projected to partially offset the growth in underlying consumption, potentially lessening the relative impact on forecast reliability; and
- With the sustained uptake of distributed solar, minimum demand forecasts continue to show a rapid decline.

The energy sector in Australia is undergoing a necessary and inevitable transition from a centralised system of large fossil fuel generation towards a decentralised system of widely dispersed, renewable energy (mainly wind and solar) (AER, 2022). The Australia Energy Regulator (2022) identifies key drivers for the transition as:

- Increasing community concern on the impact of fossil fuel generation of carbon emissions. There has been no energy business investing in new coal fired generation in Australia since 2012, whilst investment in wind, solar and batteries continues to grow, as detailed in **Figure 2-1**;
- Technological advancements and cost reductions in grid scale wind and solar generation facilitating lower cost options for new build generation, including advancements in solar panel technology; and
- Deteriorating economics of fossil fuel generation associated with aging of the coal fired generation fleet and increase fuel costs.



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

Source: AER; AEMO (data).

FIGURE 2-1 EXIT AND ENTRY OF GENERATION CAPACITY IN THE NEM (SOURCE: (AER, 2022))

Traditionally, NSW's electricity needs have been met by coal-fired generation and some gas peaking power plants. While wind and solar power has increased and accounted for a combined 27% of total generation in 2022, fossil fuel generation continued to produce approximately 64% of electricity in the NEM, in 2022 (AER, 2022). However, about 58% of the current coal-fire capacity is expected to withdraw by 2030, initiated by the closure of Liddell's Power Station in April 2023 which marked the first of four coal station exists for the decade.

The imminent exit of much of the NEM's coal fired generation has prompted AEMO to forecast reliability gaps (risk of unserved electricity demand) as early as 2024 in some regions. AEMO's forecasts of these reliability gaps are accelerating in response to growing demand via electrification and generation investment proceeding slower than hoped. Wind and solar provide emission-free, low-cost electricity when weather conditions allow them, but their supply will need to be supplemented with adequate electricity storage technology to avoid reliability gaps as coal stations continue to retire (AER, 2022). Renewable energy generation is projected to continue to grow to 76% in 2030 and 82% in 2035 to support the NEM (AER, 2022).

The Project represents an investment in a new large scale renewable energy, providing approximately 400 MW of wind electricity generating capacity. The Project will thereby provide an essential input into the additional renewable energy sources needed in the transition from coal fired generation to renewable generation. Additionally, the proposed BESS would provide approximately 600 MW / 1,200 MWh of storage to provide firmed renewable energy to the grid during peak periods and improve the reliability of the NEM.

2.1.6 WIND FARM BENEFITS

Through the generation of renewable energy, wind farms provide significant contribution to Australia's transition to greener energy. The Australian Wind Alliance (AWA) prepared the report, *Building Stronger Communities: Wind's growing role in regional Australia* (November 2019) (AWA, 2019), which outlines ways in which wind farms deliver significant financial and social benefits to their host communities. The report also investigates how income and investment from wind farms flow to local communities in the windiest parts of Australia, from payments to landowners and community sponsorships through to community co-ownership and co-investment.

Some key notes from the AWA 2019 report have been summarised below:

- The construction of existing wind farms construction has delivered an economic boost of $5.1 billion to regional Australia, and the construction of new windfarms is expected to provide a further economic boost of $4.8 billion.
- Up to $18.3 billion could be delivered to host communities across the 25-year life span of wind farm projects, including currently operational wind farms and those currently under construction.
- Regional communities benefit each year from wind farm projects through $24.9 million in payments to host landowners and $29.4 million through wind farm Community Enhancement Funds (CEFs).
- From 2021 onwards, Community Enhancement Funds will fund up to $5 million annually for community projects.

2.1.7 PROJECT-SPECIFIC BENEFITS

The Project will deliver renewable, low-cost energy to the national grid, and will contribute to Commonwealth and the NSW Government's emission reduction targets by:

- Providing a source of renewable energy to supplement NSW and national energy requirements, supporting the transition being undertaken in the energy sector away from a centralised system of large fossil fuel generation, towards a more decentralised system of renewable energy production and assist in reducing GHG emissions.

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

- Direct investment in the region;
- Opportunities for local contractors and businesses, through creation of construction jobs and operational activities;
- Diversified income stream for rural landholders;
- Renewable low-cost energy to the national grid; and
- Development of new skilled labour in the region within the growing renewable energy industry.

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

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

FIGURE 2-2 PROJECT BENEFITS

2.2 REGIONAL AND LOCAL PLANNING CONTEXT

2.2.1 SOUTH-WEST RENEWABLE ENERGY ZONE

The Project Area is situated approximately 3.8 km south of Project EnergyConnect (**Figure 2-4**), which is a proposed 330 kV transmission line between South Australia and New South Wales with a total length of 900 km. This connection will allow for the energy generated at Saltbush Wind Farm to be supplied to the NEM. Investigations into the feasibility and suitability of this connection are to be considered as a part of the Project EIS.

The Project Area is located within the boundaries of the proposed South-West REZ, which is being developed in the areas surrounding Hay in the South West region of NSW (Energy NSW, 2021).

The South-West REZ was formally declared in 2022 and was chosen to be located in this region due to:

- The abundance of renewable energy resources;
- A strong pipeline of proposed renewable energy projects; and
- The relative compatibility of land uses within the region.

2.3 STRATEGIC FRAMEWORK

The Project will align with various strategies, policies, and plans across national, state, regional, and local contexts. The strategic framework for the Project is outlined in **Table 2-1** below.

TABLE 2-1 ALIGNMENT WITH STRATEGIC FRAMEWORK

Strategy, Policy or Plan	*Description*	*Project Alignment*
National Context		
United Nations Framework Convention on Climate Change Conference of Parties (COP28) – United Arab Emirates 2023	COP28 was the 28th climate change conference held in Dubai, UAE in 2023. One of the key outcomes of COP28 was an agreement to "triple the world's renewable energy capacity and double its energy efficiency by 2030" (WRI, 2023). This pledge was made by 130 countries, including Australia.	The Project will contribute to meeting Australia's commitments through the generation of renewable wind energy and resultant annual reduction in greenhouse gas emissions.

Strategy, Policy or Plan	*Description*	*Project Alignment*
United Nations Framework Convention on Climate Change Conference of Parties (COP21) – The Paris Agreement	The United Nations Paris Agreement on climate change (Paris Agreement) outlines a framework for all countries to take climate action from 2020, and builds upon the existing international efforts in the period up to 2020. The aim of the Paris Agreement is to limit emissions globally to net-zero in the second half of this century. Australia is one of 195 countries that signed on to the Paris Agreement, and has set a target to reduce emissions by 26-28 per cent below 2005 levels by 2030. This builds on the 2020 target of reducing emissions by five per cent below 2000 levels (PoA, 2017).	The Project will contribute to meeting Australia's commitments under the Paris Agreement through the generation of renewable wind energy and resultant annual reduction in greenhouse gas emissions. It should be noted that NSW targets are to achieve net-zero emissions by 2050, and is listed in Part 2 section 9(1)(c) of the *Climate Change (Net Zero Future) Act 2023.*
Integrated System Plan 2022	The Integrated System Plan (ISP) provides an integrated roadmap for the development of the National Electricity Market (NEM) over the next 20 years, and the most recent ISP 2022. In December 2023 the AEMO published an update to the ISP along with a draft version of the 2024 ISP (AEMO, 2022). This draft is currently subject consultation and submissions which close 16 February 2024. The final report scheduled to be released 28 June 2024.	The Project is located within the South-West REZ, which has been identified as a proposed REZ in the ISP 2022. The Project will respond to Phase 2 of the ISP: "*Renewable generation development to replace energy provided by retiring coal-fired generators and supported by the actionable ISP projects*".
NSW Context		
Net Zero Plan Stage 1: 2020-2030	The Net Zero Plan Stage 1: 2020–2030 (DPE, 2020a) sets the foundation for NSW's action on climate change and how the NSW Government will deliver on its objective to achieve net zero emissions by 2050. The Plan is the NSW Government's overarching strategy to reduce emissions and mitigate the impacts of climate change. In September 2021, the NSW Government announced ambitious new emission reductions, with an updated objective to reduce emissions by 50% below 2005 levels by 2030 under the Net Zero Plan Stage 1: 2020 – 2030 Implementation Update (September 2021).	This Project will contribute to the Net Zero Plan, including the NSW Government's updated 2030 50% target. This will be achieved through a reduction in greenhouse gas emissions.

Strategy, Policy or Plan	*Description*	*Project Alignment*
NSW Electricity Strategy	The NSW Electricity Strategy is the NSW Government's plan to provide more reliable, affordable, and sustainable electricity across in NSW (DPE, 2019). The Strategy encourages approximately $8 billion of new private investment in NSW's electricity system over the next decade, including $5.6 billion in regional NSW. It aligns closely with the NSW Government's Net Zero Plan Stage 1: 2020–2030, and supports a new affordable and reliable energy system by: • Delivering the coordinated Renewable Energy Zone in the South-West region; • Saving energy via the Energy Security Safeguard; • Supporting the development of new electricity generators; • Setting a target to increase the state's energy resilience; and • Making it easier to do energy business in NSW.	The Project is consistent with the Strategy as it provides renewable energy generation and storage capacity that, together with other renewable generation projects, is expected to result in lower cost of power in comparison to wholesale prices. The Project will also contribute to greater energy resilience through the use of BESS to support stabilising the supply of electricity to the Hunter region.
NSW Transmission Infrastructure Strategy	The NSW Transmission Infrastructure Strategy is the NSW Government's plan to unlock private sector investment in priority energy infrastructure projects, which can deliver least-cost energy to customers to 2040 and beyond (DPE, 2018). The Strategy forms part of the government's broader plan to make energy more affordable, secure investment in new power stations and network infrastructure and ensure new technologies deliver benefits for consumers. The aims of the Strategy include increasing NSW's connections with Victoria, South Australia and Queensland, and increasing NSW's energy capacity through the prioritisation of Energy Zones in the Central-West, South-West and New England regions of NSW. The Strategy seeks to help meet future energy needs by facilitating new transmission that could	The Project will contribute to the development of the South-West REZ, which will result in an overall increase to NSW's energy capacity. Additionally, with the provision of a BESS, the Project will provide energy storage and dispatch capacity to facilitate and provide electricity demand management.

Strategy, Policy or Plan	*Description*	*Project Alignment*
	support up to 17,700 MW of new electricity generation. Other benefits include improved energy reliability, security, timely project delivery, increased affordability and access to cheaper electricity.	
NSW Electricity Infrastructure Roadmap	The NSW Electricity Infrastructure Roadmap (the Roadmap), released in November 2020, is the NSW Government's plan to transform the NSW electricity sector to be cleaner, cheaper and more reliable (DPE, 2020b). The Roadmap builds on the NSW Electricity Strategy (2018) and the NSW Transmission Infrastructure Strategy (2019), and emphasises the need for NSW to transition to renewable energy. It aims to replace NSW's ageing coal-fired power stations with a coordinated portfolio of energy generation, storage and network investment. As part of this Roadmap, the NSW Government commits to Renewable Energy Zones (REZ), which will expand transmission and generation capabilities in strategic areas across NSW, including the South-West region of NSW. The Roadmap reinforces the key role of these REZs in delivering renewable energy, transitioning from coal fired power generation, and providing regional growth and investment in regional NSW.	The Project will assist in meeting the NSW Government's emissions reduction targets, NSW's energy generation and storage requirements, and NSW's transition from coal fired power generation to renewable energy. The Project will also contribute to the development of the South-West REZ, which will add to the regional growth and investment in regional NSW.
Regional Context		
Riverina Murray Regional Plan 2041	The Riverina Murray Regional Plan 2041 (RMRP) is a 20-year blueprint for the future of the Riverina Murray Region (DPE, 2023). It was developed by DPHI (DPE at the time) in 2023 following consultation with local councils, key stakeholders, and local communities. The RMRP provides a framework for guiding land use plans, development proposals, and infrastructure funding decisions over the next 20 years and includes both priority and longer-term actions. It	The Project is proposed to connect with the existing transmission lines and will therefore provide ready access to the electricity network. The Project is also consistent with relevant directions and actions of the RMRP listed under: • Objective 13: Support the transition to net zero by 2050; and • Objective 16: Support the visitor economy.

Strategy, Policy or Plan	*Description*	*Project Alignment*
	aims to grow the region's cities and local centres, support the protection of high value assets, and develop a strong, diverse and competitive economy through the following four key goals: • A growing and diverse economy; • A healthy environment with pristine waterways; • Efficient transport and infrastructure networks; and • Strong, connected and healthy communities.	
Local Context		
Edward River Council Local Strategic Planning Statement 2020-2040	The Edward River Council Local Strategic Planning Statement (LSPS) provides a framework for the social, economic, and environmental land use needs throughout the Edward River LGA over the next 20 years (ERC, 2020).	The Project will provide jobs and investment within the Edward River Council LGA which contributes to the objectives of the LSPS.
Hay Shire Council Local Strategic Planning Statement 2020	The Hay Shire Council Local Strategic Planning Statement (LSPS) provides a framework for the social, economic, and environmental land use needs throughout the Hay Shire over the next 20 years (HSC, Hay Shire Council Local Strategic Planning Statement 2020, 2020).	The Project will directly address *Planning Priority 9: Renewable Energy*, which has the following objective: 'Encourage the growth of Renewable Energy Installations'. Planning Priority 9 of the LSPS aligns with *Direction 11: Promote the diversification of energy supplies through renewable energy generation* of the Riverina Murray Regional Plan. In addition, the LSPS states that the Hay shire is in a suitable position to cater for renewable energy, and there are opportunities to develop renewable energy across all scales.

Strategy, Policy or Plan	*Description*	*Project Alignment*
Edward River Council 2018-2030 Community Strategic Plan	Edward River Council 2018-2030 Community Strategic Plan (CSP) is a 10-year plan that outlines the long-term vision and strategic directions for the Edward River community (ERC, 2018).	The Project will directly respond to *Outcome 3 – A valued and enhanced natural environment* of the CSP. It supports investigating opportunities for sustainable energy and aligns with *Strategy 3.5: Support federal and state initiatives to reduce the impacts of climate change*.
Hay Shire Council Community Strategic Plan 2017-2027	The Hay Shire Council Community Strategic Plan 2017-2027 (CSP) is a 10-year plan that outlines the long-term vision and strategic directions for the Hay Shire community (HSC, 2017).	The Project will directly respond to *Objective 1 – Environmental Sustainability* of the CSP. It aligns with *Strategy 1.1.1: Investigate renewable resource options*, and its associated Target: *Reduction in non-renewable energy and potable water usage*.
Hay Shire Council – Fundamental Principles for Successful Renewable Development in Hay LGA 2023	The draft 'Fundamental Principles for Successful Renewable Development in Hay LGA', placed on public exhibition in December 2023, outlines the position, expectations and priorities of the Hay Community in relation to renewable energy development in the region.	The Proponent considers the Fundamental Principles for Successful Renewable Development in Hay LGA when developing the strategic approach of the Project, to foster partnership with community, council and government.

2.4 SITE AND SURROUNDING DEVELOPMENT

2.4.1 LOCAL AND REGIONAL COMMUNITIES

2.4.1.1 REGIONAL CONTEXT

The Project Area is situated within the locality of Booroorban in the Edward River Local Government Area (LGA). The Project is approximately 43 km south of Hay (by road), the closest regional town with a population of approximately 2,300 (ABS, 2021).

Edward River LGA is located in the Riverina Murray Region of NSW and includes the town of Deniliquin and six rural villages of Blighty, Booroorban, Conargo, Mayrung, Pretty Pine, and Wanganella. The LGA is strategically located in Riverina Murray region, linked by highways to Adelaide, Sydney and Melbourne.

The Edward River LGA covers a total area of 8,881 km^2 and has a population of 8,456 (ABS, 2021). The key land uses within the region are centred on agriculture and food production, and its economy is reliant on tourism, agriculture and associated industries. The rice industry is of significance in the Edward River LGA, as Deniliquin is the home to Sun Rice – the largest rice mill in the southern hemisphere (ERC, 2020). The Project Area sits in the Deniliquin Local Aboriginal Land Council (LALC), and the traditional owners of the land are the Wamba Wamba and Perrepa Perrepa people.

Nearby Towns and Population Centres

The Project is approximately 43 km south of Hay (by road), the closest regional town centre with a population of approximately 2,300 (ABS, 2021). Other key towns located near the Project Area include (ABS, 2021):

- Balranald, NSW – 96 km northwest (population 2,208);
- Deniliquin, NSW – 80 km northwest (population 7,432);
- Mildura, VIC – 96 km northwest (population 56,972);
- Swan Hill, VIC – 138 km northeast (population 21,403);
- Darling Point, NSW – 180 km northeast (population 3,977);
- Griffith, NSW – 200 km northeast (population 19,505); and
- Wagga Wagga, NSW – 255 km east (LGA population 67,609).

Project EnergyConnect and South-West Renewable Energy Zone

The Project Area are situated to the south of the EneryConnect corridor (**Figure** 2-4), which is a proposed 330 kV transmission line between South Australia and New South Wales with a total length of 900km. The NSW component is being undertaken in two stages. The Western Section, which will connect the NSW and SA transmission networks, received state and federal planning approval in late 2021. The second stage, which connects the Buronga and Wagga Wagga substations, was approved in September 2022. Connection to Project EnergyConnect is proposed via the Travelling Stock Route easement which runs along the Cobb Highway.

The Project Area is also located within the boundaries of the South-West Renewable Energy Zone (REZ), which is being developed in the areas surrounding Hay in the southwest of NSW. The South-West REZ was chosen to be located in this region due to:

- The abundance of renewable energy sources;
- The proximity of the area to Project EnergyConnect;
- A strong pipeline of proposed renewable energy projects; and
- The relative compatibility of the land uses within the region.

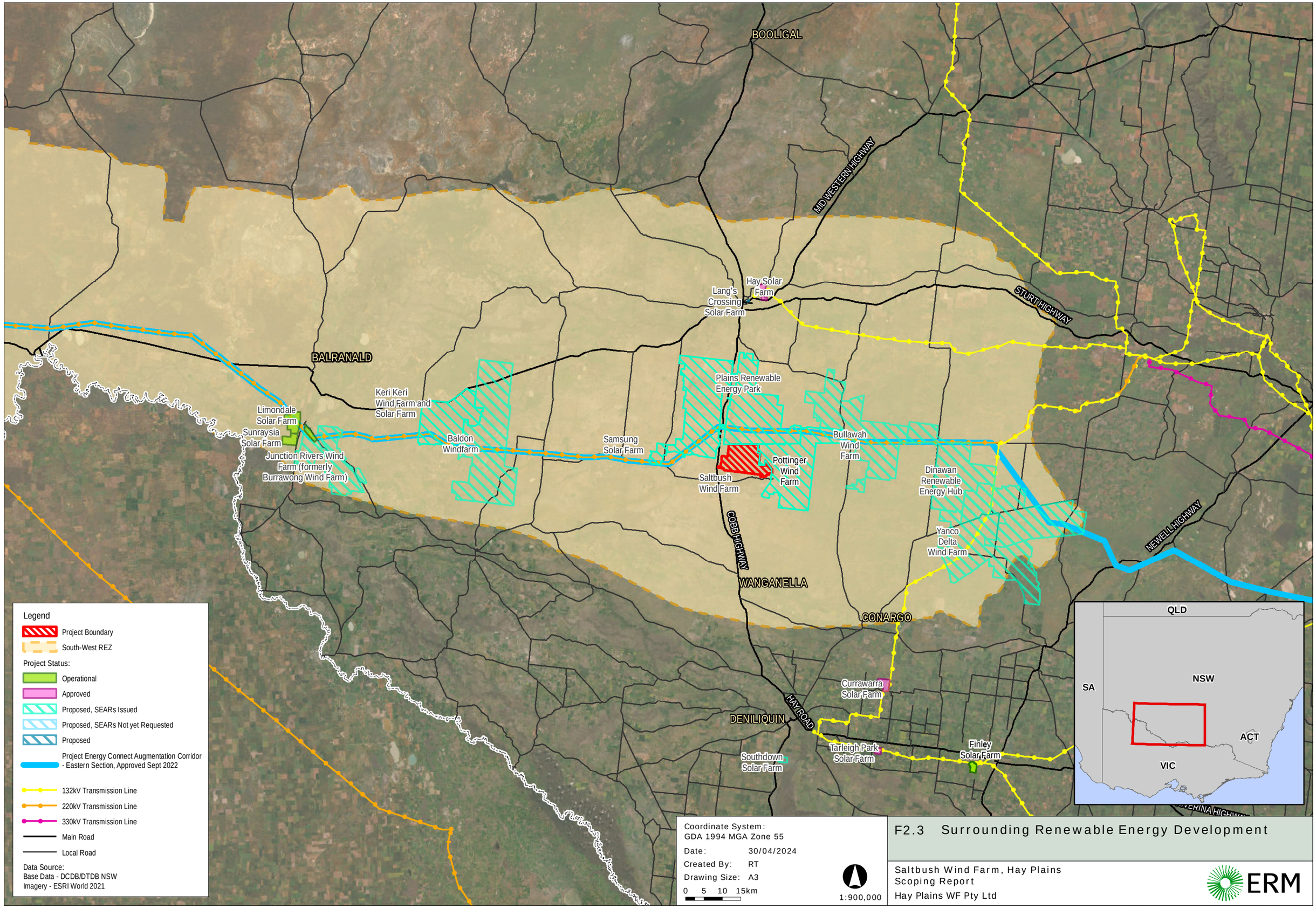
Nearby Renewable Energy and Related Projects

There are a number of existing or proposed renewable energy projects located in close proximity to the Project Area, which are listed in **Table 2-2** below. There is a high concentration of renewable energy projects within the region due to its location within the South-West REZ and proximity to EnergyConnect corridor. The location of South-West REZ, EnergyConnect corridor, and nearby renewable energy projects are shown in **Figure 2-3**.

TABLE 2-2 NEARBY RENEWABLE ENERGY AND RELATED PROJECTS

Project	*Developer*	*Energy*	*Scale*	*Proximity*	*Status*
Wind Energy Developments					
Pottinger Wind Farm	Someva Renewables	Wind	750 MW	0 km	Amend SEARs
The Plains Wind Farm	Engie	Wind	1,800 MW	0 km	Prepare EIS
Bullawah Wind Farm	BayWa r.e. Projects Australia Pty Ltd	Wind	1000 MW	17 km	Prepare EIS
Dinawan Energy Hub Wind Farm	Spark Renewables Pty Ltd	Wind	1500 MW	37 km	Prepare EIS
Yanco Delta Wind Farm	Virya Energy Pty Ltd	Wind	1,500 MW	47 km	Approved
Baldon Wind Farm	Goldwind Capital (Australia)	Wind	900 MW	55 km	Prepare EIS
Keri Keri Wind Farm	Acciona Energy Australia Global Pty Ltd	Wind	1000 MW	66 km	Prepare EIS
Junctions River Wind Farm	Windlab Developments Pty Ltd	Wind	750 MW	96 km	Approved
Solar Energy Developments					
The Plains Solar Farm	Engie	Solar	400 MW	3 km	Amend SEARs
Romani Solar Farm	Samsung C&T	Solar	250 MW	14 km	Prepare SEARs
Lang's Crossing Solar Farm	IT Power (Australia) Pty Ltd	Solar	5 MW	39 km	Approved
Hay Solar Farm	Plains SF No1 Pty Limited	Solar	110 MW	39 km	Approved
Southdown Solar Farm	juwi Renewable Energy Pty Ltd	Solar	130 MW	47 km	SEARs issued
Currawarra Solar Farm	RES Australia Pty Ltd	Solar	195 MW	63 km	Approved

Project	*Developer*	*Energy*	*Scale*	*Proximity*	*Status*
Keri Keri Solar Farm	Acciona Energy Australia Global Pty Ltd	Solar	400 MW	66 km	Prepare EIS
Dinawan Energy Hub Solar Farm	Spark Renewables Pty Ltd	Solar	800MW	72 km	Response to Submissions
Tarleigh Solar Farm	RES Australia Pty Ltd	Solar	90 MW	80 km	Approved
Finley Solar Farm	ESCO Pacific	Solar	175 MW	95 km	Operational
Limondale Solar Farm	OVERLAND Sun Farming Company Pty Ltd	Solar	349 MW	110 km	Approved
Sunraysia Solar Farm	Sunraysia Solar Farm Two Pty Ltd	Solar	225 MW	115 km	Approved
Other					
Project EnergyConnect (NSW – Eastern Section)	Transgrid	High voltage interconnector	375 km of new 330 kV double circuit transmission and associated infrastructure	4 km	Approved



F2.3 Surrounding Renewable Energy Development

Saltbush Wind Farm, Hay Plains
Scoping Report
Hay Plains WF Pty Ltd

ERM

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2.4.1.2 LOCAL CONTEXT

The Project Area is situated in Booroorban, which is characterised by a generally flat topography, with elevation ranging from 78 m to 96 m above sea level. The gradient gradually increases on the eastern side of the Project Area.

The existing land uses surrounding the Project Area are predominantly agricultural and primarily used for irrigated cropping and grazing. Nyangay Creek and Curtains Creek traverse through the Project Area, within the Murrumbidgee and Lake George Catchment which covers an area of 84,000 km^2.

The nearest national parks are the Kalyarr National Park and the Oolambeyan National Park, located 52 km northwest and 29 km northeast of the Project Area, respectively (refer **Figure 1-1** and **Figure 2-4**). Toogimbie Indigenous Protected Area is located 43 km northwest, and the closest conservation area is the Yanga State Conservation Area 45 km west of the Project Area.

2.4.2 THE SITE

The Project Area is zoned in its entirety as *RU1 – Primary Production* under Conargo Local Environmental Plan 2013 (Conargo LEP). The Project Area is primarily used for agricultural purposes, and is located north of South West Woodland Nature Reserve. The proposed grid connection will be via Project EnergyConnect (PEC) 330 kV transmission line which is located about 3.8 km north of the Project Area. The Project Area will include a corridor alongside Cobb Highway for transmission infrastructure to PEC.

Access to the Project Area is provided via the Cobb Highway and an unnamed unsealed road intersecting with Cobb Highway at the southwest corner of the Project Area (refer **Figure 3-1**). The local road network near the Project Area links up with the Sturt Highway in the north which runs east-west between Wagga Wagga and Balranald. Cobb Highway meets up with the Riverina Highway to the south in Deniliquin.

A map of the Project Area and its zoning is provided at **Figure 2-4**. It covers 61 land parcels across approximately 8,105.6 ha. The Travelling Stock Route along the Cobb Highway (i.e. the Crown land corridor shown in **Figure 2-4**) will facilitate connection of the Project to Project EnergyConnect, which covers 11 land parcels.

The allotments within which the Project and transmission route are outlined in **Table 2-3**. The Project Area cadastre is detailed in **Figure 1-2**.

TABLE 2-3 LAND CADASTRE

DP	***Lot***
Project Area	
756313	1, 2, 3, 4, 5, 6, 7, 8, 10, 11, 12, 13, 16, 17, 18, 20, 21, 22, 23, 24, 25, 26, 27, 28, 23, 30, 31 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 44, 45, 46, 47, 48, 49, 50, 62
756315	1, 2, 3, 4, 14, 15, 38, 39, 43, 45, 46, 48, 49, 50, 62
756277	22

DP	***Lot***
1250435	342
Transmission Line via Travelling Stock Route	
1157228	7301, 7302, 7303
1077040	7001, 7002, 7003, 7004, 7305,
756778	12
1149704	7303, 7304

The Project Area has been historically used for agricultural activities and consists of manmade crops and water retention dams. The closest business is Burraburoon Farmstay, located 0.7 km south of the Project Boundary.

The topography of the Project Area is generally flat, with a maximum height of 92 metres Australian Height Datum (AHD). Vegetation is scarce and randomly dispersed within the Project Area, and vegetation fringing the Nyangay Creek through the centre of the Project Area. The Coleambally Outfall Drain is located immediately south of the Project Area. Rural and agricultural activities, including grazing of livestock and the production of crops and fodder, are prominent land uses surrounding the Project Area as shown in **Figure 2-4**.

Hay Shire Council LGA

Edward River Council LGA

10,000m

5,000m

3,750m

RU1

C1

ROMAN ROAD

COBB HIGHWAY

JERILDERIE ROAD

WILLURAH ROAD

BOOROORBAN-TCHELERY ROAD

WARGAM ROAD

EUROLIEC CREEK

R1 R2 R3 R4 R5 R6 R7 R8 R9 R10 R11 R12 R13 R14 R15 R16 R17 R18 R19 R21

Legend

- Involved Dwelling
- Non-involved Dwelling
- Indicative Proposed Turbine Location
- Project Area
- Provisional BESS and Substation
- Access Road
- Main Road
- Minor Road
- Main Watercourse

Transmission Line

- 220kV Transmission Line
- Black line of visual magnitude (3,750m from Project Area)
- Blue line of visual magnitude (5,500m from Project Area)
- Study Area
- LGA Boundary
- Cadastre (Lot)
- C1 National Parks and Nature Reserves
- RU1 Primary Production
- SP2 Infrastructure

Data Source:
Base Data - DCDB/DTDB NSW
Imagery - ESRI World 2021

Coordinate System:
GDA 1994 MGA Zone 55

Date: 10/04/2024
Created By: RT
Drawing Size: A3

0 1.5 3 4.5km

1:150,000

F2.4 Local Context

Saltbush Wind Farm, **Booroorban**
Scoping Report
Hay Plains WF Pty Ltd

ERM

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3. THE PROJECT

3.1 PROJECT AREA

The Project Area is defined as the area of land corresponding to property boundaries on which that Project is located. The Project Area covers a total area of 8,105.6 ha and is situated to the east of the Cobb Highway. A map of the Project Area is provided in **Figure 3-1**.

3.2 PROJECT DESCRIPTION AND LAYOUT

An indicative layout consisting of up to 70 WTGs has been prepared as shown in **Figure 3-1**. The development footprint is approximately 266 ha. Further details of the project layout including ancillary infrastructure, transmission corridor and access roads will be prepared during the EIS phase.

3.2.1 PROJECT DESIGN – COMPONENTS AND SPECIFICATION

The Project involves the construction, operation, and decommissioning of a wind farm of up to 70 WTGs and associated infrastructure. **Table 3-1** summarises the key indicative Project components and specifications.

TABLE 3-1 INDICATIVE PROJECT DESIGN – COMPONENTS AND SPECIFICATION

Component	*Feature*	*Specification*
Energy generation	Wind turbine generators	Approximately 70 turbines
		Up to 280 m tip height.
		Capacity of approximately 400 MW
Electrical Reticulation Network	On-site substations	New high voltage substation proposed on the western side of the Project Area.
	Internal electrical reticulation network, underground and overhead	Electrical reticulation is subject to further detailed design.
	Switchyard	Switchyard and other electrical equipment providing connection to Project EnergyConnect.
	Grid connection	Transmission infrastructure between the site and PEC proposed within Travelling Stock Route along Cobb Highway
	Battery Energy Storage System	Capacity of approximately 600 MW / 1,200 MWh.
Access Roads	Access to site and turbines	Access via Cobb Highway and internal access roads.

Ancillary infrastructure and associated works are proposed to be located within the proposed development footprint for the wind farm as detailed in **Figure 3-1**. This is subject for further assessment and confirmation during the EIS phase.

The indicative preliminary Project layout is displayed in **Figure 3-1**, which shows the indicative location of the WTGs. The Project layout is subject to further design development and assessment as a part of the EIS preparation. The EIS and associated technical assessments will further assess identified constraints to facilitate further layout design changes and refinements in response to identified values and constraints, as well as strategies to minimise and mitigate impacts.

3.2.2 WIND TURBINE GENERATORS

The Project is a proposed wind farm that will consist of up to 70 turbine locations with a combined estimated maximum installed capacity of up to approximately 400 MW. The wind turbines will have a hub height of up to 194 m and a tip height of up to 280 m. The Project will likely utilise Vestas turbines and specifically the Vestas V172-7.2 MW™ model. The turbines will be fixed to a concrete footing and mounted on tubular steel towers, with adjacent hardstand areas for installation and maintenance. The indicative turbine specifications are provided in **Table 3-2.**

TABLE 3-2 INDICATIVE TURBINE SPECIFICATION

Component	*Feature*	*Specification*
Wind turbine generator	Make / Model / Power	Turbine model Vestas V172-7.2 MW™
	Blade Length (incl. nacelle)	Up to 172 metres diameter
	Hub height	Up to 194 metres
	Tip height	Up to 280 metres
	Rotor Swept Area	Up to 23,235 m^2
	Cut-In Wind Speed	3 metres per second (m/s)
	Cut-Out Wind Speed	25 m/s
	Potential Maximum Sound Power Level	106.9 dB(A)

3.2.3 BATTERY ENERGY STORAGE SYSTEM

A centralised large-scale battery energy storage is proposed for the Project. The BESS has a storage capacity of 600 MW / 1,200 MWh. The BESS will be located adjacent to the switching station / substation in the southwest portion of the Project Area, (refer **Figure 3-1**).

3.2.4 ELECTRICAL RETICULATION SYSTEM AND GRID CONNECTION

Electrical infrastructure to support the Project includes a substation, inclusive of associated transformers, switchgear, protection, communications equipment and a control room. The Project also includes one switching station to change the voltage for the electricity network.

A network of underground and overhead electrical reticulation will connect the WTGs to the substations. These will generally follow the alignment of the proposed internal access tracks between the WTGs and the main access road to the substation.

The Project includes the construction of a new transmission line within the Travelling Stock Route along the Cobb Highway (i.e. the Crown land corridor shown in **Figure 2-4**) and will facilitate connection of the Project to Project EnergyConnect (refer **Figure 3-1**).

Legend

- Indicative Proposed Turbine Location
- Involved Dwelling
- Non-involved Dwelling
- Project Boundary
- Crown Land
- Disturbance Corridor
- Provisional Switchyard and Substation Area
- Provisional BESS Area
- Access Road
- Highway / Main Road
- Local Road
- Track-Vehicular
- Perennial Watercourse
- Non-perennial Watercourse
- Indicative Transmission Line
- 220kV Transmission Line
- Project Energy Connect Augmentation Corridor - Eastern Section, Approved Sept 2022

Source:
Boundary: Client Provided
Basedata: DCDB / DTDB
Imagery: ESRI World 2021

WEST BURRABOGIE ROAD
COBB HIGHWAY
BOOROORBAN-TCHELERY ROAD
WARGAM ROAD
BOOROORBAN
COLEAMBALLY OUTFALL

T01 T02 T03 T04 T05 T06 T07 T08 T09 T10 T11 T12 T13 T14 T15 T16 T17 T18 T19 T20 T21 T22 T23 T24 T25 T26 T27 T28 T29 T30 T31 T32 T33 T34 T35 T36 T37 T38 T39 T40 T41 T42 T43 T44 T45 T46 T47 T48 T49 T50 T51 T52 T53 T54 T55 T56 T57 T58 T59 T60 T61 T62 T63 T64 T65 T66 T67 T68 T69 T70

R1 R2 R3 R4 R5 R6 R7 R8 R9 R10 R11 R12 R13 R14 R15 R16 R17 R18 R19 R21

Coordinate System:
GDA 1994 MGA Zone 55

Date: 24/04/2024
Created By: CS
Drawing Size: A3

0 1 2Kilometers

1:100,000

F3.1 Project Layout

Saltbush Wind Farm, **Booroorban**
Scoping Report
Hay Plains WF Pty Ltd

ERM

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3.2.5 OTHER INFRASTRUCTURE AND ASSOCIATED WORKS

The Project will also require additional project infrastructure and associated works including:

- Underground and overhead electrical cabling;
- Internal access roads;
- Operations and Maintenance Building;
- Substation for connection to PEC; and
- One Switchyard.

3.2.6 CONSTRUCTION AND TEMPORARY FACILITIES

The Project will potentially require the following construction and temporary facilities:

- Temporary construction facilities such as offices, car park and amenities;
- Fencing and landscaping works;
- Delivery of project components, including panels, battery modules, substations, transformers and associated components;
- Installing maintenance and environmental managements processes and equipment;
- Earthworks required to establish hardstand and laydown areas ;
- and
- Access to project site via Cobb Highway and unsealed roads extending east from Cobb Highway.
- Access through Travelling Stock Route to install transmission infrastructure to connect Saltbush to PEC

3.2.7 DEVELOPMENT FOOTPRINT

The Development Footprint represents the maximum potential area of impact associated with the construction and operation of the Project. For the purposes of this Scoping Report the indicative Development Footprint is 266 ha, consisting of:

- Temporary Development Footprint: the area of land that will be temporarily disturbed during construction of the Project with areas to be rehabilitated following construction; and
- Permanent Development Footprint: the area of land that will remain disturbed throughout the operational life of the Project and will not be suitable for agricultural use. This will include infrastructure areas such as the WTGs hardstand areas, switchyard, substation and associated facilities.

Further refinements and changes to the project layout may be proposed in the EIS as well as strategies to minimise and mitigate potential impacts from the Project.

3.2.8 ANCILLARY ACTIVITIES

The Project may also include the following ancillary activities:

- sourcing of gravel, rock and other materials for construction (this may include cut and fill activities and gravel pits within the Project Area);

- sourcing of water for construction (this may include offsite or onsite water sourcing, including the construction or bores and / or manmade dams onsite);
- subdivision and boundary adjustments relating to lease arrangements, where required;
- visual screening, where required; and
- geotechnical investigations to inform the siting and location of Project layout and infrastructure.

Ancillary activities will be subject to further assessment, including the outcomes of technical and environmental assessments as part of the EIS.

3.2.9 TRANSPORT ROUTE AND SITE ACCESS

Access to the Project Area during construction and operations is proposed via the existing road network. Primary access for construction and operation vehicles is proposed via an unnamed, unsealed road intersecting with Cobb Highway at the southwest corner of the Project Area, that borders the western boundary of the Project Area. The transport route of WTG components and other Project related materials are subject to a Transport and Traffic Route Assessment, which will be prepared as part of the EIS, the outcomes of which will be incorporated into the Traffic and Transport Impact Assessment. This will identify a proposed transport route from either the Port of Geelong or Port of Melbourne to the Project Area, as well as any required road upgrades.

3.3 STAGING

The anticipated staging of the Project is summarised in **Table 3-3** and presented in **Figure 3-2**. The Project is currently in Stage 1, during the planning and approvals process, involving the preparation of the Scoping Report and EIS. The planning and approval process is expected be completed by 2027. Construction of the Project is expected to commence in 2028, with operations commencing mid-2030.

TABLE 3-3 PROJECT STAGING

Stage of Project	*Estimated Date of Completion*
Planning and Approvals Process	2026
Construction	2028
Commissioning and Operations	Mid-2030

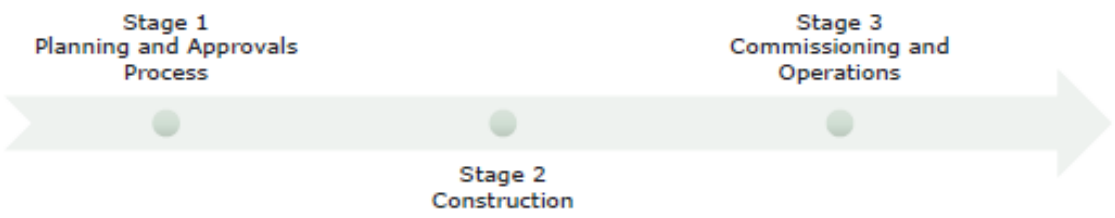


FIGURE 3-2 PROJECT STAGING MAP

3.4 PHASES

3.4.1 CONSTRUCTION

Construction of the Project is anticipated to begin in 2028 with design and procurement activities leading into groundworks commencing. Construction is anticipated to take approximately 30 months to complete, including commissioning of the Project to achieve full grid export.

During the construction phase of the Project, approximately 280 full time employees will be required.

3.4.2 OPERATIONS

The operational phase of the Project is currently planned to commence mid-2030 for a 30-40 year period minimum and the workforce will consist of approximately 28 full time equivalent (FTE) permanent staff.

Ongoing maintenance will be required for all infrastructure associated with the Project, including:

- Landscaping;
- Maintaining asset protection zones (if required); and
- Repair and replacement of Project components.

3.4.3 DECOMMISSIONING

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

At the end of the operational life of the wind farm, approximately 30-40 years, the Project Area could be formally decommissioned. A decision will be made at this point whether to erect new turbines (re-power) or to remove the existing turbines and rehabilitate the site.

This process of decommissioning will be undertaken in accordance with the relevant legal requirements, regulations and conditions of approval. The Project will remove all aboveground infrastructure, however access roads may be retained subject to landowner agreement.

3.5 ALTERNATIVES

Alternatives to the Project have been explored, including the alternative sourcing of energy, site locations, site layouts, and the 'do nothing' approach for the Project.

3.5.1 ALTERNATIVE SITE LAYOUT OPTIONS

The design of the Project will be refined during the EIS phase. These design revisions will be an iterative process, allowing for improvement in WTG siting based on information from environmental assessment, landowner feedback and broader community consultation.

The design process will be focused around four main principles:

- Minimising and/or avoiding negative environmental and social impacts;
- Avoiding serious and irreversible impacts on threatened species such as the Plains Wanderer;
- Maximising wind energy production; and
- Incorporating feasible and reasonable mitigation/management measures, safeguards and provisions (e.g. for compliance monitoring) into the construction and operational aspects of the Project.

The preliminary layout of the WTGs has been refined to avoid Plains Wanderer habitat in the southeast of the Project Area to avoid serious and irreversible impacts to this species. The design of the Project will be subject to further assessments to minimise potential environmental impacts and respond to community feedback throughout the Project development.

3.5.2 DO NOTHING

The Project Area is currently used for agricultural land uses. The 'do nothing' scenario would lead to a slower transition to renewable energy and a missed opportunity to generate additional renewable energy to reduce Australia's dependency on fossil fuels for energy generations and the consequential emissions of GHGs. The Project could supply to 173,000 NSW households with energy annually.

In addition, the local area and wider region would not benefit from the Project outcomes including:

- The economic benefits to the local and regional community provided directly and indirectly by the employment associated with the Project; and
- A capital investment creating direct and indirect employment during construction and operations.

Failing to adequately transition to renewable energy sources will result in the continued use of fossil fuels, including coal (both black and brown) and natural gas. The reliance on these energy sources results in the release of GHG emissions such as CO_2, which contributes to the harmful effects of climate change. The RET discussed in **Section 2.1** outline the commitment by Australia and NSW in reducing greenhouse gas emissions and have set targets for increasing the generation of renewable energy.

4. STATUTORY CONTEXT

4.1 POWER TO GRANT CONSENT

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

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

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

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

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

> *Development for the purpose of electricity generating works or heat or their co-generation (using any energy source, including gas, coal, biofuel, distillate, waste, hydro, wave, solar or wind power) that:*
>
> *(a) has an estimated development cost l investment value of more than $30 million*

The Project meets the definition of 'electricity generating works', which are defined in Clause 2.35 of the Transport and Infrastructure SEPP:

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

The Project involves development for the purpose of electricity generating works using wind power which will have a estimated development cost of more than $30 million. Therefore, the Project is classified as SSD under Part 4 of the EP&A Act.

4.2 PERMISSIBILITY

The permissibility of wind farm developments in NSW is determined by *State Environmental Planning Policy (Transport and Infrastructure) 2021* (Transport and Infrastructure SEPP)**.**

Clause 2.36 (1) of the Transport and Infrastructure SEPP states that 'electricity generating works' may be carried out with development consent on land within a prescribed rural, industrial or special use zone.

The Project Area is zoned in its entirety as RU1 – Primary Production under the Conargo Local Environmental Plan 2013 (Conargo LEP). As RU1 is a prescribed rural zone, the

Project is permissible with consent under the provisions of Clause 2.36 (1) of the Transport and Infrastructure SEPP.

4.3 OTHER APPROVALS

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

TABLE 4-1 OTHER APPROVALS REQUIRED UNDER NSW AND COMMONWEALTH LEGISLATION

Approval Category	*Legislation*	*Requirement*
Consistent Approvals Section 4.42 of the EP&A Act outlines that these approvals cannot be refused if necessary for carrying out an approved SSD and are to be consistent with the terms of the SSD approval.	*Roads Act 1993 (Roads Act)*	The Project will require consent from the appropriate road authority under Section 138 of the Roads Act for any works undertaken on public roads. The impacts of the Project on roads and traffic will be assessed within the EIS.
	Protection of the Environment Operations Act 1997 (POEO Act)	Under the provisions of Schedule 1, Clause 17 of the POEO Act, activities requiring an environment protection licence (EPL) include "electricity works (wind farms)". Accordingly, an EPL will be required for the Project.
EPBC Act Approval	*Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act)*	Approval from the Minister for the Commonwealth Department of Climate Change, Energy, the Environment and Water (DCCEEW) is required for any action that will or is likely to have a significant impact on one or more MNES. The findings of the Preliminary Biodiversity Assessment and field survey events identified 11 threatened species listed under the EPBC Act and/or BC Act within the Project Area. Further targeted surveys are required to confirm the presence of threatened species.
Other Approvals	*Conveyancing Act 1919*	Subdivision consent is not required under Section 23G of the Conveyancing Act 1919. However, Section 23G of the Conveyancing Act 1919 may apply if subdivision for the purpose of construction, operation and maintenance of a substation is required.
	Crown Land Management Act 2016 (CL Act)	The CL Act provides for the administration and management of Crown land in NSW. Crown land may not be occupied, used, sold, leased, licensed, dedicated, reserved, or otherwise dealt with unless authorised by the CL Act.

Approval Category	*Legislation*	*Requirement*
Approvals not required under SSD Section 4.41 of the EP&A Act outlines the following approvals, permits etc. are not required for an approved SSD.	*Fisheries Management Act 1994*	The Project will not require a dredging or reclamation work permit under Section 201, a marine vegetation regulation of harm permit under Section 205, or a passage of fish not to be blocked permit under Section 219.
	Heritage Act 1977	The Project will not require a Part 4 approval to carry out an act, matter or thing referred to in Section 57(1), or an excavation permit under Section 139.
	National Parks and Wildlife Act 1979	The Project will not require an Aboriginal heritage impact permit under Section 90.
	Rural Fires Act 1997	The Project will not require a bush fire safety authority under Section 100B, as the development does not involve subdivision for residential or rural residential development. A Bushfire Assessment will be prepared as part of the EIS.
	Water Management Act 2000	The Project will not require a water use approval under Section 89, a water management work approval under Section 90, or an activity approval (other than an aquifer interference approval) under Section 91.

4.4 MANDATORY MATTERS FOR CONSIDERATION

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

TABLE 4-2 MANDATORY CONSIDERATIONS

Statutory Reference	*Mandatory Consideration*
Considerations under the EP&A Act and Regulation	
Section 1.3 – Objects of the Act	Pursuant to Section 1.3 of the EP&A Act, the Objects of the Act are: *(a) to promote the social and economic welfare of the community and a better environment by the proper management, development and conservation of the State's natural and other resources,* *(b) to facilitate ecologically sustainable development by integrating relevant economic, environmental and social considerations in decision-making about environmental planning and assessment,* *(c) to promote the orderly and economic use and development of land,* *(d) to promote the delivery and maintenance of affordable housing,* *(e) to protect the environment, including the conservation of threatened and other species of native animals and plants, ecological communities and their habitats,*

Statutory Reference	*Mandatory Consideration*
	(f) to promote the sustainable management of built and cultural heritage (including Aboriginal cultural heritage), *(g) to promote good design and amenity of the built environment,* *(h) to promote the proper construction and maintenance of buildings, including the protection of the health and safety of their occupants,* *(i) to promote the sharing of the responsibility for environmental planning and assessment between the different levels of government in the State,* *(j) to provide increased opportunity for community participation in environmental planning and assessment.*

Section 4.15 – Evaluation	In accordance with Section 4.40 and Section 4.15 of the EP&A Act, the consent authority is required to take the following matters into consideration in determining a development application:
	• Relevant environmental planning instruments including:
	  ◦ State Environmental Planning Policy (Resilience and Hazards) 2021;
	  ◦ State Environmental Planning Policy (Transport and Infrastructure) 2021;
	  ◦ State Environmental Planning Policy (Biodiversity and Conservation) 2021; and
	  ◦ Conargo Local Environmental Plan 2013.
	• The likely impacts of that development, including environmental impacts on both the natural and built environments, and social and economic impacts in the locality;
	• The suitability of the site for the development;
	• Any submissions made in accordance with this Act or the regulations; and
	• The public interest.
	These will be considered in the EIS.

Considerations under other legislation	
Biodiversity Conservation Act 2016 – Section 7.14	A Biodiversity Development Assessment Report (BDAR) will be prepared to accompany the EIS and will provide a discussion of the management and protection of listed threatened species of native flora and fauna and threatened ecological communities (TECs) and assess biodiversity offsets consistent with the Biodiversity Offset Scheme. Given the Project is SSD, entry into the Biodiversity Offset Scheme is automatically triggered. The Minister for Planning is required to take into account the impact of the development on biodiversity values as assessed in the BDAR. The Minister may (but is not required to) further consider under the Act the likely impact of the proposed development on biodiversity values.
Considerations under relevant EPIs	
State Environmental Planning Policy (Resilience and Hazards) 2021 (Resilience and Hazards SEPP) – Chapter 3	Chapter 3 of the Resilience and Hazards SEPP assesses the potential hazards associated with the proposed development by providing definitions and guidelines for hazardous industry, offensive industry, hazardous storage establishments, and offensive storage establishments. In accordance with Section 3.7 of the Resilience and Hazards SEPP, consideration will be given to current circulars or guidelines published by the Department of Planning relating to hazardous or offensive development.

Statutory Reference	*Mandatory Consideration*
State Environmental Planning Policy (Resilience and Hazards) 2021 (Resilience and Hazards SEPP)– Chapter 4	Chapter 4 of the Resilience and Hazards SEPP provides a state wide planning approach to the remediation of contaminated land. Under Section 4.6 (1) of the Resilience and Hazards SEPP, a consent authority is required to consider whether a proposed development site is contaminated before granting consent. An assessment will be prepared as part of the EIS to determine the potential contamination risk associated with the Project.
Conargo Local Environmental Plan 2013	The EIS will address relevant components of the LEP, including the objectives of the RU1 zone in clause 2.3(2).

5. COMMUNITY AND STAKEHOLDER ENGAGEMENT

From the Project's inception, Octopus Investments has worked to understand and identify key stakeholders and designed engagement approaches for each stakeholder group and project stage. Initial interactions with host landowners, neighbouring residents in the Booroorban community, Local Aboriginal Land Councils (LALCs), Traditional Owner Groups (TOGs), and local councils have provided their preference for the engagement methods and channels outlined in **Table 5-1**. This section provides a summary of the results and findings of the Community and Stakeholder Engagement Strategy prepared by Premier Strategy in March 2024.

5.1 ENGAGEMENT OBJECTIVES

During the Scoping Phase, Octopus Investments' approach to engagement and consultation has focussed on meeting the objectives below:

- Sharing relevant information about the Project in a timely and accessible way;
- Engaging a broad cross-section of community members and other stakeholders through a mix of traditional and online consultation tactics;
- Managing stakeholder and community expectations and providing clear information about what levels of influence they have on the Project;
- Understanding community ideas and aspirations for renewable energy solutions and the sustainable and sympathetic integration of these into the landscape;
- Gathering early insights into emerging stakeholder issues and concerns about the Project and the transition to renewable energy more generally;
- Contributing to positive planning outcomes for the Project and NSW;
- Responding to public feedback in an open and transparent manner; and
- Meeting the public consultation guidelines set out by the NSW Government, relevant Acts and regulations and peak body best practice charters and guidelines.

5.2 PREFERRED ENGAGEMENT METHODS

Consultation methods will continue to be modified based on stakeholder feedback, as new stakeholders emerge and monitoring data is gathered, providing increasingly tailored and comprehensive processes.

TABLE 5-1 PREFERRED ENGAGEMENT METHODS

Relevance	***Engagement tool***
High	Face-to-face meetings
	Emails communications (for project updates, administration on meetings, notifications of engagement activities)
	Phone calls (check in with stakeholder, confirm meetings)
Medium	Meetings (video and conference and phone calls)
	Surveys with follow up via email
	Letters and newsletters
Low	Mass community communications including newspaper, radio, social media, flyers, website, community drop-in and information sessions

5.3 STAKEHOLDER IDENTIFICATION

Table 5-2 outlines the identified stakeholder groups to engaged throughout the project phases. Additional stakeholder groups will be added as planning and development progresses. A detailed stakeholder database is maintained by Octopus Investments' cloud based management system to ensure privacy and confidentiality.

TABLE 5-2 EARLY STAKEHOLDER IDENTIFICATION

Stakeholder Group / details	***Areas of interest / impacts***	***Relevance***
Host landowner	• One landowner • Direct impacts from construction and operational activities including traffic management, land management, electrical infrastructure, road maintenance, visual amenity, acoustics.	High
Near neighbours	• 10 neighbours identified within 12km of the Project Area • Direct impacts from construction and operational activities, visual amenity and acoustics.	Medium
State and Federal Government	• Penny Sharpe, NSW Minister for Climate Change, Minister for Energy, Minister for the Environment, and Minister for Heritage • Tara Moriarty, NSW Minister for Regional New South Wales • Chris Bowen, Federal Minister for Climate Change and Energy • Catherin King MP, Federal Minister for Regional Development • Helen Dalton, State Member for Murray • Sussan Ley, Federal Member for Farrer • Perin Davey, National Party Senator for NSW	High
NSW Agencies, Departments	• AEMO Services • EnergyCo • Transgrid • Department of Climate Change, Energy, the Environment and Water (DCCEEW) • Biodiversity and Conservation Directorate (BCD) • Transport NSW	High
First Nations	• Deniliquin Local Aboriginal Land Council (LALC) • Hay Local Aboriginal Land Council (LALC) • Yarkuwa Indigenous Knowledge Centre • Southern West Yiradyuri Clans • Nari Nari Tribal Council (Hay)	High

Stakeholder Group / details	***Areas of interest / impacts***	***Relevance***
	• Registered Aboriginal Parties • Hay Aboriginal Working Party • Hay Aboriginal Medical Service • NSW Aboriginal Land Council	
Local government	• Edward River Shire Council • Council representatives: Mark Dalzell (Acting CEO); Shelley Jones (Director Corporate Services) • Councillors: Cr Pete Betts (Mayor); Cr Paul Fellows (Deputy Mayor); Cr Shirlee Burge; Cr Harold Clapham; Cr Linda Fawns; Cr Pat Fogarty; Cr Tarria Moore; Cr Marc Petersen; Cr Shannon Sampson • Hay Shire Council • Council representatives: David Webb (General Manager); Jack Treblanche (Director Planning and Development); Alison McLean (Economic Development Officer); Mark Dowling (Director Corporate and Community Services) • Councillors: Cr Carol Oataway (Mayor); Cr Lionel Garner (Deputy Mayor); Cr Geoff Chapman; Cr Jenny Dwyer; Cr Martyn Quinn; Cr Paul Porter; Cr Peter Handford; Cr Darren Clarke	Medium
Emergency Service Providers	• Hay / Deniliquin Hospital and Health Service • Fire and Rescue NSW Fire Station – Deniliquin and Hay • NSW Ambulance– Deniliquin and Hay • NSW Police Service– Deniliquin and Hay	Medium
Neighbouring Town Centres / local community members	• Hay • Deniliquin	Low
Outer neighbouring Town Centres	• Moulamein, Wanganella, Willurah, Conargo, Maude, Carathool	Low
Education providers	• Hay Public School; St Mary's Anglican; War Memorial High School; Hay School of the Air; Deniliquin North PS, Deniliquin High School; Deniliquin South PS; Edward PS; St Michael's Primary School; Gulpa Pre School; Riverina Community College Inc; TAFE NSW Deniliquin.	Low
Renewable energy developers in South West REZ	• Someva - Pottinger Energy Park • Engie – Plains Energy Park • Kilara Energy – Wilan Wind Farm	Low
Media	• The Riverina Grazier, Deniliquin Pastoral Times, community Facebook groups, radio including 2QN, EdgeFM	Low

Stakeholder Group / details	***Areas of interest / impacts***	***Relevance***
Airports	• Hay Airport • Deniliquin Airport	Low
Local businesses and employment agencies	• Regional/local businesses, suppliers • Local Business/Commerce Chambers	Low
Industry and interest groups	• Clean Energy Council, NSW Farmers Association, Irrigation Farmers Network	Low

5.4 ENGAGEMENT CONDUCTED

The Project team has undertaken three in-region visits (September 2023, December 2034 and February/March 2024) to engage with key stakeholders. Engagement activities undertaken are outlined in **Table 5-3**.

TABLE 5-3 ENAGEMENT ACTIVITIES TO DATE

Key Stakeholder	***Date***	***Activity***	***Purpose***	***Sentiment***
Landholder	12 Sep 23 5 Dec 23 27 Feb 24	Face-to-face meetings 10> phone calls and emails	• Provide Project updates including planning and development timelines, engagement activities schedule, and survey work. • Collaborate on project name and socialise commitment to community benefit initiatives. • Discuss any concerns, issues and impacts.	Positive
Neighbours (within 12km)	5-7 Dec 23 27 Feb – 1 Mar 24	Face-to-face meetings 3> phone calls per neighbour Email Letters & brochure	• Introduce project, Project updates including planning and development timelines. • Discuss any concerns, issues, impacts. • Socialise commitment to direct shared benefits for Booroorban community and seek views on community valued initiatives. • Confirm communication preferences and appetite for frequency of communication and ongoing engagement opportunities.	Positive / Neutral

Key Stakeholder	***Date***	***Activity***	***Purpose***	***Sentiment***
Hay Shire Council	6 Dec 23 21 Feb 24 27 Feb 24	Face-to-face meeting with executive team Presentation to Councillors Round table discussion with council and renewable proponents in area 10> phone calls and emails	• Provide Project updates including planning and development timelines, engagement activities schedule, and survey work. • Determination of project name • Socialise commitment to benefit sharing initiatives and how funds could be considered for both Hay and Edward River LGAs • Round table: build relationships with other proponents to facilitate cooperation to enhance community outcomes	Positive
Edward River Council	6 Dec 23 4 Mar 24	Face-to-face meetings and presentation with executive team 10> phone calls and emails	• Provide Project updates including planning and development timelines, engagement activities schedule, and survey work. • Determination of project name • Early benefit sharing initiatives and how funds could be considered for both Hay and Edward River LGAs	Positive
Hay Public School	28 Feb 24	Face-to-face meeting Emails	• Discussed opportunities for school incursion for renewable energy education programs facilitated by Octopus Investments. • Discussed ways Octopus could invest in meaningful and sustainable shared benefit initiatives.	Positive
Hay and Deniliquin Community	1-2 Mar 24	Community drop-in session Public survey Advertising: Social media, newspaper, radio, letterbox drop	• Raise awareness of the Project and Octopus Investments • Encourage community to provide feedback, advise any concerns/issues/benefits • Provide platform for community to learn more about renewable energy	Survey: Positive Drop-ins: Positive/ neutral/ Social media: negative

Key Stakeholder	***Date***	***Activity***	***Purpose***	***Sentiment***
Deniliquin LALC	7 Dec 2	Face-to-face meeting	• Raise awareness of the Project and Octopus Investments • Seek feedback from First Nations groups on engagement methods, areas of interest/influence, opportunities for collaboration in project design, cultural studies • Socialise proposed options for benefit sharing initiatives for Aboriginal and Torres Strait Islander people in the community and discuss opportunities for ongoing community engagement and collaboration on co-design of social and economic investment initiatives.	Positive
Yarkuwa Indigenous Knowledge Centre	6 Dec 23 4 Mar 24	Face-to-face meetings Email and phone call	• Provide update on progress, and communicate name of project – Saltbush Wind Farm • Advise progress on Scoping Report activities and share next steps • Seek feedback from First Nations groups on engagement methods, areas of interest/influence, opportunities for collaboration in project design, cultural studies • Socialise proposed options for benefit sharing initiatives for Aboriginal and Torres Strait Islander people in the community and discuss opportunities for ongoing community engagement and collaboration on co-design of social and economic investment initiatives.	Positive/neutral
Nari Nari Tribal Council / Hay LALC	Ongoing	Phone calls and emails to arrange face-to-face	• Raise awareness of the Project and Octopus Investments • Seek feedback from First Nations groups on engagement methods, areas of interest/influence, opportunities for collaboration in project design, cultural studies • Socialise proposed options for benefit sharing initiatives for Aboriginal and Torres Strait Islander people in the community and discuss opportunities for ongoing community engagement and collaboration on co-design of social and economic investment initiatives.	Unknown
Helen Dalton MP	Ongoing	4> phone calls 2> email with briefing pack	• Raise awareness of the Project and Octopus Investments • Early benefit sharing initiatives and how funds could be considered for both Hay and Edward River LGAs.	Unknown

5.5 SUMMARY OF KEY THEMES

Consultation and engagement outcomes from the Scoping Phase were broadly identified as neutral and/or positive, with ten key areas of impact/interest identified in **Table 5-4** below. Given the relative infancy of renewable development projects in the Hay and Edward River Local Government Areas and the evident neutrality from the local community toward the South West REZ generally, Octopus Investments recognise the need to:

- continue to engage the community on the development of Saltbush Wind Farm;
- communicate the broad benefits of a transition to renewable energy; and
- actively explore opportunities to work with other renewable developers in the area, local and state government and energy agencies to maximise social and economic benefits to the region and to plan for the anticipated demand for housing, accommodation and local goods and services during the construction phase of renewable projects.

TABLE 5-4 SUMMARY OF KEY THEMES FROM CONSULTATION ACTIVITIES

SSD Classification	***Description of issues/impacts***	***Source***
Biodiversity Requiring further consultation and assessment	Environmental impacts – flora and fauna • Some near neighbours raised concerns around the impacts to local native bird life, in particular the Plains Wanderer (ground-dwelling grassland bird) and the Major Mitchell cockatoo. Stakeholders were interested in understanding the velocity of wind turbines and the potential impact on birdlife and; • provisions to protect the Plains Wanderer habitat given its prevalence in the region • the impact of wind turbines on the flight patterns of birds, particularly birds that travel around tree-top height (Major Mitchell cockatoo)	Booroorban community
	Environmental impacts – flood and fire resilience • Some near neighbours noted the importance of using local knowledge and expertise to ensure site design and development would not increase the risk of flooding in the region, which generally can easily flood and is known to have slow drainage of flood water, which is important for the ecology of the area. • Some concerns were raised about the risk of wind farms increasing the prevalence of bush fires in the region, and what measures would be in place to mitigate the risk of fire.	Booroorban community >12km radius of project site

SSD Classification	***Description of issues/impacts***	***Source***
Requiring further consultation and assessment	Aboriginal Heritage • Concerns were raised on adequate cultural heritage practises to be employed as the region is rich with cultural heritage including burial mounds and meeting places. • Concerns were raised about how to encourage collaboration between interested Traditional Owner groups as part of the Cultural Heritage Assessment process as these processes can otherwise cause distress and quarrelling between TO groups • First Nations groups queried the excavation practices for the Project and the measures in place if areas of cultural significance were found during early construction of the site.	Nari Nari Tribe Deniliquin LALC Yarkuwa Indigenous Knowledge Centre
	Noise • Near neighbours located adjacent to the Project site were interested in understanding the noise impacts of operational wind turbines. Whilst noise was raised by a number of near neighbours, it was not considered a significant cause of concern, given the distance between near neighbour dwellings and the proposed site layout of the turbines. Neighbours were interested in understanding the predicted noise levels as part of the noise impact assessment.	Booroorban community >8km radius of project site
	Visual impacts • A small number of near neighbours raised questions about the visual impact of the project, and what they would be able to see from their homes, particularly properties with main living and bedroom windows facing the Project site. Given the flat topography of the region, near neighbours are anticipating a significant change to the visual amenity and natural environment, however, this has not been identified as a significant concern to those who reside in the region.	

SSD Classification	*Description of issues/impacts*	*Source*
Strategic context	Workforce housing and accommodation • Both the Hay and Edward River Shire Councils are concerned about the anticipated strain on demand for housing and accommodation as renewable developments in the region approach construction, possibly concurrently. This included concerns from the Hay Council that whilst there are several vacant properties in the town centre, many of these homes are uninhabitable and would require significant refurbishment/renovation to make them liveable. A coordinated solution between all developers to plan for appropriate housing and accommodation solutions in construction is needed.	Edward River Council Hay Shire Council

EIS preparation consultation	Shared benefits initiatives
	• During the second round of in-region engagement the Project team sought early feedback from community on their values and preferences for benefit sharing initiatives and how the project could best contribute to the long-term vitality and success of the region. Early initiatives for broad community benefits indicated preferences for:
	  ° employment and training opportunities
	  ° investment in local arts and culture
	  ° upgrades to local community facilities
	  ° sponsorship of community led events, groups, sporting clubs.
	• Legacy benefit sharing initiatives for the Booroorban community were noted as being of value to bring long-term benefits to the host region. Direct benefits that could be delivered prior to construction and operation were also noted as important to the Booroorban community.
	• Voluntary Planning Agreements with Hay and Edward River Councils were noted as an opportunity to bring more region wide benefits to the LGAs, and that partnership agreements between other energy developers in the area may be considered to fund more substantial investment in areas such as health, education and community infrastructure and assets.
		First Nations groups
		Booroorban community
		Edward River Council
		Hay Shire Council

SSD Classification	*Description of issues/impacts*	*Source*
	Consultation fatigue • Booroorban is a small community with a population of approximately 33 people. Within a 15km vicinity of the Saltbush Wind Farm project site, there are two other renewable energy projects in development – Pottinger Energy Park and the Plains Renewable Energy Park. Some near neighbours have requested proponents consider working together to undertake assessments, particularly those requiring the property owner to approve access to their property.	Booroorban community
Strategic context Broader policy issues	Cumulative impacts • Some community members in the Edward River LGA expressed concerns about the VNI West Transmission Line, and the impact of the proposed transition line to the visual amenity along the preferred corridor. Similarly concerns were raised about the need for the VNI West connection to support renewable energy development in the area, without necessarily directly benefiting the local community through powering local homes, and that the infrastructure was located too close to homes and the town centre.	Booroorban community Hay Shire community Deniliquin community Edward River Council Hay Shire Council
	Project decommissioning • A small number of stakeholders in the Booroorban community and at Council sought information on the process for decommissioning at the end of the Project. This included how wind turbine assets were removed from the site, whether they could be recycled and the process for returning the land to its original state.	Booroorban community Edward River Council Hay Shire Council
	Wind and solar as intermittent energy sources • A small number of community members raised concerns around how the intermittent nature of solar and wind generated electricity would be able to support fluctuating electricity demand, particularly given battery storage is currently limited to maximum of 4 hours of storage capacity.	Deniliquin community

5.6 PROPOSED FUTURE ENGAGEMENT

Preparation for the EIS assumes a 12-month engagement process before the public exhibition of the EIS, which is anticipated to be displayed via the DCCEEW website in Q2 2025. Consultation and engagement activities to support the EIS preparation phase include:

- Review and update of CSEP to align with the EIS phase;
- Continued management of the Project 1800 line and Project email;
- Continued management of the Project website, including regular content updates;
- Continued management of stakeholder relationship matrix and database;
- Quarterly community drop-in sessions, two sessions per quarter, including collaborative opportunities to sponsor and attend community events and festivals;
- Quarterly 1:1 engagement with tier-one stakeholders:
  - Landowners;
  - Near neighbours;
  - Local Council;
  - Traditional owner groups;
  - Community connector groups (commerce groups, education and training groups, etc);
- Produce summary fact sheets for each environmental survey/study completed, Project notification update to support community understanding of ecological studies and assist with their preparation of submissions during the EIS exhibition period;
- Produce advertising materials to promote attendance and participation at community consultation sessions;
- Prepare media releases to announce achievements at key Project milestones;
- Establish and implement a Community Reference Group to develop a robust community benefit-sharing scheme and test ideas for initiatives with the broader community through feedback sessions;
- Prepare a community consultation outcomes report that will be included in a summarised format with the EIS documentation as well as available in full as a public-facing document;
- Plan and implement school education programs on renewable energy;
- Continue to engage in collaborative forums with other renewable energy project developers in the area to determine approaches to region-wide social and economic benefit opportunities and innovative and sustainable ways to address anticipated constraints during construction on housing, accommodation and local services; and
- Develop neighbour benefit sharing framework and negotiate agreements with each nearby neighbour.

5.7 NEXT STEPS: ENGAGEMENT AND CONSULTATION DURING EIS PREPARATION

The Environmental Impact Statement (EIS) is critical to the planning approval process for large-scale renewable energy projects. Octopus Investments' engagement and consultation approach during the preparation of the EIS supports our transparent and fair approach to environmental assessment activities and our consultation objectives to proactively seek diverse feedback from all stakeholders and community proactively.

Engagement and consultation activities to support the preparation of the EIS consider the relevant legislative and regulatory requirements, including:

- NSW Department of Climate Change, Energy, the Environment and Water (DCCEEW) community participation objectives (open and inclusive, accessible, relevant, timely and meaningful)
- Requirements set out in the Secretary's Environmental Assessment Requirements (SEARs)
- Spectrum for Public Participation of the International Association of Public Participation (IAP2)
- NSW Government Guiding Principles to First Nations Engagement
- Clean Energy Council guide to benefit sharing options for renewable energy.

6. PROPOSED ASSESSMENT OF IMPACTS

6.1 CATEGORISATION OF ASSESSMENT MATTERS

This section outlines matters requiring further assessment in the EIS and the level of assessment that should be undertaken for each matter. A preliminary environmental assessment was undertaken to identify the potential matters associated with the proposed construction and operation of the Project. The following were considered in the identification of matters requiring further assessment in accordance with the Scoping Report Guidelines (DPE, 2022a):

- The scale and nature of the likely impacts of the Project and the sensitivity of the receiving environment;
- Whether the Project is likely to generate cumulative impacts with other relevant future projects in the area;
- The ability to avoid, minimise and/or offset the impacts of the Project, to the extent known at the scoping stage; and
- The complexity of the technical assessment of the Project.

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

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

TABLE 6-1 PROPOSED ASSESSMENT

Level of Assessment	*Aspect*
Detailed (potential constraint)	• Amenity –Visual • Amenity – Noise, vibration • Biodiversity – Terrestrial flora and fauna • Heritage - Aboriginal • Access - Traffic and transport • Aviation – Aviation impact • Social – surroundings, livelihoods
Standard	• Heritage – Historic • Hazards and Risks – bushfire, environmental hazards, waste, EMI/EMF • Water - hydrology • Land – land capability

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

6.2 VISUAL AMENITY

This section provides a summary of the results and findings of the Preliminary Visual Impact Assessment (PVIA) prepared by MOIR in February 2024 and contained as **Appendix C** to this Scoping Report. The PVIA was prepared in accordance with the:

- Wind Energy: Visual Assessment Bulletin December (the Bulletin) (2016) (DPE, 2016);
- Draft Wind Energy Guideline (November 2023) (DPE, 2023) ;
- Draft Wind Energy Guideline – Technical Supplement: Landscape and Visual Impact Assessment (November 2023) (DPE, 2023b); and
- State Significant Development Guidelines - Preparing a Scoping Report (DPE, 2022a).

In accordance with the requirements of the Bulletin, the PVIA includes a preliminary landscape character assessment and a preliminary visual impact assessment.

6.2.1 EXISTING VISUAL AND LANDSCAPE CHARACTER

The Project is sited within the Riverina Bioregion in southwest NSW which is characterised by extensive salt bush plain with small depressions and low isolated rises. The topography is flat. Given the flat nature of the terrain, the Study Area for the preliminary landscape assessment has been extended to 10 km.

Land use within and around the Project Area are predominantly dedicated to agricultural production activities, primarily grazing. The South West Woodland Nature Reserve is located to the south of the Project Area. Ephemeral creek lines and lakes form floodplains are present providing fertile zones for agricultural activities. A large portion of these areas remain dry most of the year. Cobb Highway serves as an important road corridor and connects the towns of Hay, Balranald and Deniliquin.

6.2.2 ASSESSMENT APPROACH

6.2.2.1 PRELIMINARY ASSESSMENT TOOL

In accordance with the Bulletin, the preliminary assessment tools have been used to analyse the key visual parameters being the visual magnitude and multiple wind turbines.

Visual Magnitude

The Visual Magnitude threshold is based on the maximum turbine height and the distance from the non-associated dwellings or key public viewpoints. A maximum tip height of 280m has been adopted. A total of five (5) associated and fifteen (15) non-associated dwellings have been identified within the Study Area.

The results for non-associated dwellings within the Visual Magnitude thresholds are:

- Eight (8) non-associated dwellings are located within the Black Line of Visual Magnitude (3,750m from nearest turbine)
- Three (3) non-associated dwellings are located between the Black and Blue Lines of Visual Magnitude (5,500m from nearest turbine); and

- Four (4) non-associated dwellings have been identified between 5,500m and 8,000m from the nearest turbine, i.e. outside the Blue Line of Visual Magnitude yet within 8,000m.

Multiple Wind Turbines

The Multiple Wind Turbine Tool provides a preliminary indication of potential cumulative impacts arising from the Project. To establish the degree to which dwellings or key public viewpoints may be impacted by multiple WTG, the Proponent must map into six sectors of 60° any proposed, existing or approved turbines within 8 km of each dwelling or key public viewpoint. The tool considers a bare ground scenario without intervening elements such as s topography, vegetation and structures. The analysis considers both the Project and nearby renewable energy projects including The Plains Energy Park (EP), Pottinger EP and Bullawah Wind Farm.

When applied to the non-associated dwellings identified within the visual magnitude of the Project, the Multiple Wind Turbine Tool identified:

- Six (6) non-associated dwellings consisting of three (3) or more 60 degree sectors within the Study Area will be subject to further assessment during the EIS phase in accordance with the Bulletin;
    - Turbines are located in up to six (6) 60 degree sectors for two non-associated dwellings;
    - Turbines are located in up to three (3) 60 degree sectors for four (4) non-associated dwellings; and
- All remaining non-associated dwellings within 8,000m of the nearest turbine have two (2) 60 degree sectors or less. This is deemed an acceptable level in accordance with the Bulletin this is deemed an and no further assessment is required.

6.2.2.2 PRELIMINARY ZONE OF INFLUENCE

In accordance with the Bulletin, a Zone of Visual Influence (ZVI) diagram has been prepared to illustrate the theoretical visibility of the Project (**Figure 6-1**).

The results of the preliminary ZVI are:

- Due to the relatively flat topography - the majority of the WTGs associated with the Project are likely to be visible from most areas within the Study Area;
- Views to the majority of WTGs associated with the Project are likely to be available from all dwellings within 8 km of the Project. This assessment is based on a consideration of topography alone which does not consider intervening elements including but not limited to vegetation and existing structures.
- Further assessment from these areas identified in the ZVI will be undertaken in the EIS Phase of the assessment.

The preliminary assessment tools were applied to all 15 non-associated dwellings within 8,000m of the Project. The results are summarised below in **Table 6-2**. Further assessment and individual onsite inspections of non-associated dwellings deemed as sensitive receivers will be undertaken during the EIS phase.

TABLE 6-2 NON-INVOLVED DWELLING VIEWPOINTS LOCATED WITHIN 8,000 M OF A WIND TURBINE

	The Project						***Cumulative (The Project, Plains EP, Pottinger EP, Bullawah WF)***				
Dwelling	***Nearest WTG***	***No. of 60 degree sectors***	***No. WTGs within Black Line***	***No. WTGs between Black and Blue Line***	***No. WTGs between Blue Line and 8,000m***	***ZVI visibility (based on topography alone)***	***No. of 60 degree sectors***	***No. WTGs within Black Line***	***No. WTGs between Black and Blue Line***	***No. WTGs between Blue Line and 8,000m***	***ZVI visibility (based on topography alone)***
Non-Associated Dwellings (with turbines within Black Line 3,750m)											
R2	996m	3	8	13	16	65-100%	3	8	13	22	100%
R3	1,704m	1	2	6	8	65-100%	3	3	15	11	100%
R4	2,873m	2	2	7	14	65-100%	6	4	13	30	100%
R12	1,664m	1	2	6	8	65-100%	3	4	14	11	100%
R13	1,646m	1	2	6	8	65-100%	3	5	13	12	100%
R21	5,763m	2	0	6	7	65-100%	6	11	9	26	100%
Non-Associated Dwellings (with turbines within Black Line 3,750m & Blue Line 5,500m)											
R5	3,391m	2	0	6	5	65-100%	2	0	6	5	100%
R6	3,802m	1	0	5	5	65-100%	1	0	5	5	100%
R16	3,893m	1	0	4	7	65-100%	1	0	4	7	100%
R17	3,367m	1	0	5	6	65-100%	1	0	5	6	100%
R18	3,368m	1	0	5	6	65-100%	1	0	5	6	100%

	The Project						***Cumulative (The Project, Plains EP, Pottinger EP, Bullawah WF)***				
Dwelling	***Nearest WTG***	***No. of 60 degree sectors***	***No. WTGs within Black Line***	***No. WTGs between Black and Blue Line***	***No. WTGs between Blue Line and 8,000m***	***ZVI visibility (based on topography alone)***	***No. of 60 degree sectors***	***No. WTGs within Black Line***	***No. WTGs between Black and Blue Line***	***No. WTGs between Blue Line and 8,000m***	***ZVI visibility (based on topography alone)***
Non-Associated Dwellings (with turbines between Blue Line and Study Area 8,000m)											
R7	5,569m	1	0	0	5	65-100%	1	0	0	5	100%
R8	5,814m	1	0	0	6	65-100%	1	0	0	6	100%
R14	5,860m	1	0	0	6	65-100%	1	0	0	6	100%
R15	4,950m	1	0	0	7	65-100%	1	0	0	7	100%

6.2.2.3 POTENTIAL CUMULATIVE VISUAL IMPACTS

In accordance with the *Cumulative Impact Assessment Guidelines* (DPE, 2022d), the area chosen to assess relevant cumulative impacts from other developments should not be unnecessarily large or include areas where the cumulative impacts are likely to be negligible, relative to the baseline condition of the relevant Project. Visibility research suggests the WTGs and objects recede into the background in terms of visibility at 8 km (DPIE, 2022c).

The occurrence of large-scale renewable energy projects within a region has the potential to alter the perception of the overall landscape character irrespective of being viewed in a single viewshed as these projects could become part of the existing landscape. It is important to determine whether the effect of multiple projects and other major infrastructure within the region would combine to become the dominant visual element, altering the perception of the general landscape character.

The Project Area is located adjacent to The Plains Renewable Energy Park, which is expected to consist of both wind and solar energy generation components. The EIS will consider the cumulative visual impacts of the Project and the neighbouring development. Other renewable energy projects within the South West REZ (such as Lang's Crossing Solar Farm and Hay Solar Farm) are located more than 10km from the Project Area, and unlikely to be visible simultaneously with the project and therefore do not require detailed assessment in the EIS.

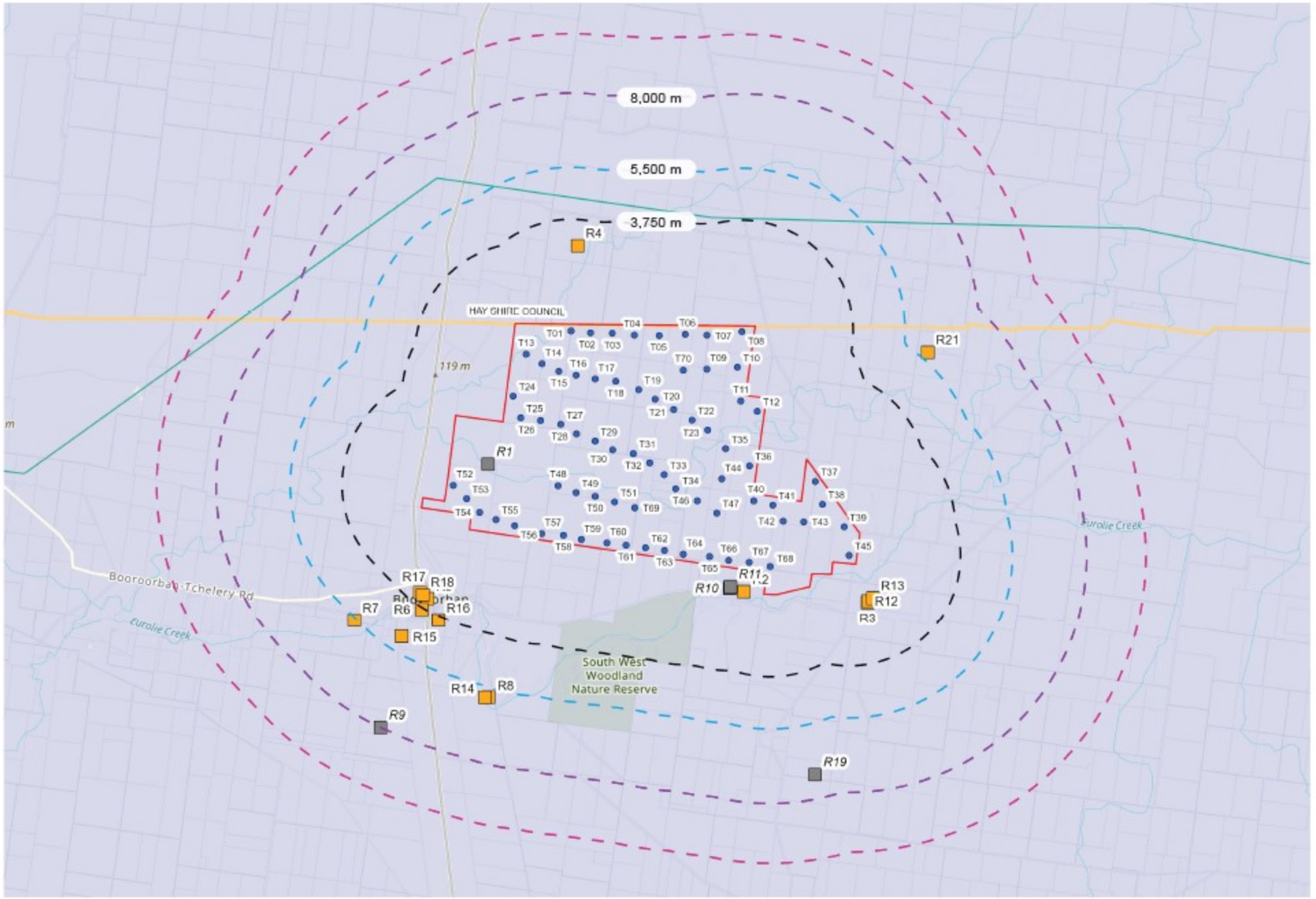
6.2.2.4 LANDSCAPE AND VISUAL IMPACT ASSESSMENT

A landscape and visual impact assessment will be undertaken as part of the EIS for the Project, which will assess the likely visual impacts resulting from the Project. The assessment will consider the potential impacts of the Project (including reflectivity, glare, and night lighting) on nearby receptors, and scenic or significant views, including public viewpoints in accordance with the requirements of the Draft Wind Energy Guideline (DPE, 2023).

Specialised modelling tools and visualisations (including photomontages) will be developed to illustrate potential views of the Project from key public viewpoints identified through this report. In addition, site inspections will be undertaken from key public viewpoints identified as requiring further assessment.

The LVIA will include an assessment of the landscape and visual impact resulting from all associated infrastructure and ancillary structures, and consideration of cumulative impacts of nearby infrastructure. Further assessment will be undertaken to assess potential impacts of glint and glare using industry standard methodology.

Cumulative impacts on visual and landscape amenity associated with other renewable energy developments in the region will also be further considered in the EIS.



Zone of Visual Influence

Blade Tip Height - 280 m

Refer to Section 7.1

LEGEND

- Project Boundary
- Proposed Turbine (WTG)
- Black Line of Visual Magnitude (3,750 m from nearest WTG)
- Blue Line of Visual Magnitude (5,500 m from nearest WTG)
- Study Area (8,000 m from nearest WTG)
- Landscape Baseline Extent (10,000 m from nearest WTG)
- Dwelling (Associated)
- Dwelling (Non-Associated)
- Existing 220kV Transmission Line
- Local Government Area
- Lot

LEGEND

(65% - 100%) between 45 WTGS and up to 77 WTGS

NOTE

ZVI is a preliminary assessment tool that represents a bare ground scenario - ie. a landscape without screening, structures or vegetation. As accurate information on the height and coverage of vegetation and buildings is unavailable, it is important to note the map is based solely on topographic information. Therefore this form of mapping should be acknowledged as representing the worst case scenario.

Figure 6.1 – Zone of Visual Influence (Blade Tip Height)
Basemap Source: Esri, 2023

6.3 NOISE

6.3.1 EXISTING ENVIRONMENT

Based on a review of available online aerial imagery, the existing noise environment at the closest dwellings to the Project Area are characterised to be that of a typical rural area, dominated by natural sounds and generally characterised by low background noise levels. Residential receptors are identified to be scattered with low human activity on local roads in the area of the influence of the project (approximately 1.5 km from the Project Area boundary) with some residences experiencing some traffic noise influence from Cobb Highway, Wargam Road and Booroorban-Tchelery Road.

6.3.2 LEGISLATIVE CONTEXT & ASSESSMENT APPROACH

6.3.2.1 WIND TURBINE NOISE

The NSW Department of Planning and Environment (DPE *Wind Energy: Noise Assessment Bulletin - for State Significant Wind Energy Developmen*t (the Bulletin) (DPIE, 2016c), provides practical guidance to proponents, planners, regulatory authorities, acoustic specialists and the broader community on how to measure and assess environmental noise impacts from wind energy projects.

As per the Bulletin, an preliminary noise assessment involving conservative noise modelling of wind turbine noise levels at sensitive receivers has been conducted as part of this submission to request for SEARs.

ASSESSMENT CRITERIA

The assessment criteria in the Noise Bulletin is as follows:

> *The predicted equivalent noise level ($L_{Aeq,10\ minute}$), adjusted for tonality and low frequency noise in accordance with these guidelines, should not exceed 35 dB(A) or the background noise ($L_{A90(10\ minute)}$) 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.*

As per the Bulletin, the indicative wind turbine noise predictions provided in the preliminary noise assessment in this report are compared against the base criteria adopted in NSW of 35 dB(A).

6.3.2.2 CONSTRUCTION AND OPERATIONAL NOISE

In the EIS stage of the project, construction and operational noise impacts will be assessed at the nearest noise sensitive receptors.

During the construction phase, noise and vibration impacts from machinery, equipment and vehicle movements on access roads may adversely impact nearby sensitive receptors. Construction noise generated by the project will be assessed at the EIS stage, including noise impact levels and duration.

During the operational phase of the Project, noise impacts will likely be associated with noise sources such as vehicle movements on local roads within the study area and electrical infrastructure (substation transformers and BESS) and wind turbine noise. The preliminary noise assessment for wind turbine noise conducted for this report will be refined during the EIS stage with up-to-date information and assessed against criteria derived from background noise monitoring.

It is not anticipated that the operation of the wind farm and BESS will produce vibration impacts.

In addition to the Bulletin, the following standards and guidelines will apply during the EIS stage:

- NSW Interim Construction Noise Guideline (DECC 2009);
- NSW Noise Policy for Industry (EPA 2017);
- NSW Road Noise Policy (DECCW 2011); and
- Assessing Vibration: A Technical Guideline (DECC 2006) (if blasting for the construction of wind turbine foundations is required).

6.3.2.3 PRELIMINARY NOISE ASSESSMENT – WIND TURBINE NOISE

The potential noise impacts from wind turbine noise at identified dwellings were modelled and assessed based on the Noise Bulletin. This preliminary assessment considers the worst-case noise propagation conditions based on the preliminary wind turbine layout and proposed wind turbine specifications.

Modelling Software

The wind farm and its area of influence (10km zone from the wind farm boundary) were modelled using SoundPLAN Version 9.0 environmental noise modelling software package to predict noise emission levels at identified receptors through the implementation of the ISO 9613-2:1996 noise propagation algorithm.

SoundPLAN allows 3D elevation data to be combined with wind turbine noise sources, ground absorption and receptor locations, to create a detailed representation of the Project Area and surrounding area. The noise model allows the quantification of noise levels from multiple wind turbines based on sound power levels emitted from each wind turbine.

Modelling Parameters

The Noise Bulletin requires that the conditions and settings associated with worst-case noise propagation conditions be assessed even though the Project is still in the concept stage of development. Indicative wind turbine specifications (refer to **Table 3-2**) have been used to model the wind turbine to reflect a worst-case noise propagation scenario.

The following data and conservative assumptions were adopted to predict noise propagation in worst-case conditions:

- all 70 wind turbines operating concurrently as per the locations identified in Figure 6-2;
- topography at 2m contour intervals;
- modelling propagation extent of 10 km
- dwellings (involved and non-involved) within a 10km zone from the wind farm boundary as identified in Figure 6-2 (note: involved dwellings have an agreement pertaining to wind farm noise exposure with the Proponent)
- wind turbine Vestas V172-7.2MW operating in Mode PO7200, with the following specifications:
  - cut-in speed of 3 m/s and cut-out speed of 25 m/s;
  - Sound Power Level of 106.9 dB(A) L_W;
  - 194 m hub height;
  - 172 m rotor diameter;
- Ground Factor of 0.5 (50% hard ground and 50% soft ground);
- Humidity 70%;
- Temperature 10°C and
- Downwind conditions - noise level at each receiver is predicted based on being simultaneously downwind of every wind turbine;

Predicted Noise Levels

The noise modelling method described above was used to predict noise levels ($L_{Aeq,10\ minute}$) at the identified noise sensitive receptors. The predicted wind turbine noise levels and a preliminary compliance assessment at the closest and/or potentially most affected receptors are presented in **Table 6-3**. A noise contour map graphically showing wind turbine noise propagation is presented in **Figure 6-3**.

TABLE 6-3 PREDICTED NOISE LEVELS

Receptor ID	*Dwelling Status*	*Co-ordinates [m] (UTM GDA94 Zone 55)*		*Distance to nearest turbine (m)*	*Predicted Noise Level, $L_{Aeq,10\ min}$ [dB]*	*Achieves 35 dB(A) Criterion (Margin of exceedance [dB])?*
		Easting	***Northing***			
R1	Involved	297542	6136796	1374	**37.1**	No (+2.1)
R2	Non-Involved	306258	6132698	994	**38.1**	No (+3.1)
R3	Non-Involved	310435	6132419	1703	30.9	Yes (-4.1)
R4	Non-Involved	300405	6144200	2875	30.2	Yes (-4.8)
R5	Non-Involved	295598	6132231	3390	27.8	Yes (-7.2)
R6	Non-Involved	295417	6131861	3801	26.8	Yes (-8.2)
R7	Non-Involved	293154	6131434	5569	22.0	Yes (-13.0)
R8	Non-Involved	297731	6128930	5813	24.0	Yes (-11.0)
R9	Involved	294119	6127826	7998	17.1	Yes (-17.9)
R10	Involved	305780	6132807	933	**38.7**	No (+3.7)
R11	Involved	305804	6132864	878	**39.1**	No (+4.1)
R12	Non-Involved	310448	6132468	1663	31.1	Yes (-3.9)
R13	Non-Involved	310610	6132570	1646	31.1	Yes (-3.9)
R14	Non-Involved	297619	6128916	5859	23.9	Yes (-11.1)
R15	Non-Involved	294760	6130915	4949	24.0	Yes (-11.0)

Receptor ID	*Dwelling Status*	*Co-ordinates [m] (UTM GDA94 Zone 55)*		*Distance to nearest turbine (m)*	*Predicted Noise Level, $L_{Aeq,10\ min}$ [dB]*	*Achieves 35 dB(A) Criterion (Margin of exceedance [dB])?*
		Easting	***Northing***			
R16	Non-Involved	295984	6131502	3892	26.9	Yes (-8.1)
R17	Non-Involved	295340	6132425	3366	27.7	Yes (-7.3)
R18	Involved	295434	6132359	3367	27.8	Yes (-7.2)
R19	Non-Involved	308787	6126568	7188	19.7	Yes (-15.3)
R21	Non-Involved	312292	6140867	5765	24.1	Yes (-10.9)

Summary of Findings

The predicted noise impact results presented in **Table 6-3** indicate non-compliances at R1 (by 2.1 dB), R2 (by 3.1 dB), R10 (by 3.7 dB) and R11 (by 4.1 dB). Receptor R2 is a non-involved dwelling while R1, R10 and R11 are involved dwellings.

Involved dwellings may be subject to less stringent criteria than the base limit of 35 dB(A) due to a negotiated agreement with the Proponent and this will be considered during the EIS stage.

Other than the four predicted base limit non-compliances mentioned above, the most impacted dwellings are R12 and R13 which are Involved dwellings. At these receptors, compliance is predicted to be achieved by 3.9 dB. All other dwellings have compliance margins greater than 4.1 dB.

Limitations

The preliminary assessment summarised above is based on indicative wind turbine specifications and a preliminary wind turbine layout and the finding may only be considered indicative of wind turbine noise impacts. In addition, the margin of exceedance presented in **Table 6-3** may change with hub-height wind speed-based noise limits derived from background noise monitoring during the EIS stage.

Assessment Approach during the EIS Stage

Predicted wind turbine noise levels at all dwellings within the area of influence (approximately 10km from the Project boundary) shall be further assessed during the detailed noise impact assessment during the EIS stage.

The EIS assessment shall include a noise and hub-height wind speed monitoring campaign to establish wind speed-based noise limits at the assessed dwellings.

The EIS noise impact assessment will provide further assessment of worst-case operational noise emissions and shall involve the following:

- A baseline noise monitoring campaign to quantify existing background noise levels and corresponding hub-height wind speeds at selected non-involved dwellings. From the collected data, wind speed-based noise limits shall be established through regression analysis;
- Detailed wind turbine noise assessment using finalised wind turbine specifications and wind turbine layout as well as wind speed-based noise limits based on the noise monitoring campaign;
- Construction noise and vibration assessment;
- Road traffic noise assessment (construction and operational phases);
- Operational ancillary noise assessment from substation transformers and BESS;
- Cumulative operational noise impacts associated with other nearby wind farms, other renewable energy projects or surrounding industry (as relevant) and
- Provision of recommendations for noise and vibration mitigation measures, management measures, safeguards and/or provisions for monitoring.

Legend

- Project Boundary
- Non Involved Dwellings
- Involved Dwellings
- Turbines
- LAeq 35dB(A)
- LAeq 40dB(A)
- LAeq 45dB(A)
- LAeq 50dB(A)

Source:
Boundary: Client Provided
Contours: Client Provided
Basedata: DCDB / DTDB
Imagery: ESRI World 2021

T01 T02 T03 T04 T05 T06 T07 T08 T09 T10 T11 T12 T13 T14 T15 T16 T17 T18 T19 T20 T21 T22 T23 T24 T25 T26 T27 T28 T29 T30 T31 T32 T33 T34 T35 T36 T37 T38 T39 T40 T41 T42 T43 T44 T45 T46 T47 T48 T49 T50 T51 T52 T53 T54 T55 T56 T57 T58 T59 T60 T61 T62 T63 T64 T65 T66 T67 T68 T69 T70

R1 R2 R3 R5 R6 R7 R10 R13 R15 R16 R17 R21

Coordinate System:
GDA 1994 MGA Zone 55

Date: 09/04/2024
Created By: RT
Drawing Size: A3

0 1,000 2,000m
1:50,000

F6.2 Operational Noise Contours

Saltbush Wind Farm, **Booroorban**
Scoping Report
Hay Plains WF Pty Ltd

ERM

6.4 BIODIVERSITY

ERM has prepared a Preliminary Biodiversity Assessment (PBA) to inform this Scoping Report. The PBA is presented as **Appendix D**. This section summarises the methodology, results and recommendations presented in the PBA.

The objective of chapter is to provide an initial assessment of the ecological constraints that occur and have the potential to occur within the Project Area. This assessment has been based on desktop review, GIS, and field surveys completed in December 2023. This assessment allows preliminary recommendations to be provided in terms of avoidance, mitigation and/or additional assessment for biodiversity values.

6.4.1 SITE CONTEXT

The Project Area is located within the Riverina Interim Biogeographic Regionalisation for Australia (IBRA) Bioregion and the Murrumbidgee Subregion. The Project area forms part of a larger area of continuous mixed open woodland, grassland, and shrubland that is characteristic of the local area. Curtains Creek and Nyangay Creek intersect the proposed Project Area, however both these waterways are ephemeral and did not have any flow apparent during the 2023 field survey. Large portions of land within the Project Area have been disturbed and are characterised by grazed native and modified grasslands resulting from vegetation clearing and livestock grazing.

The State Vegetation Type Map (SVTM) was used to initiate the vegetation mapping for the Project Area. Fourteen (14) plant community types (PCTs) were identified within the locality of the Project, and approximately one quarter of the Project Area was classified as having no PCT association. Further assessment will be completed in subsequent field investigations to accurately define areas of native vegetation and their PCT classification.

Areas of native vegetation that occur within the Project Area were calculated using data extracted from the recently published draft Native Vegetation Regulatory (NVR) Map. Broad assumptions have been made in determining the extent of native vegetation cover as outlined below:

- Category 1 – Exempt lands (draft): These lands are likely to have been cleared in the past for cropping and other high intensity agricultural activities. While native vegetation may occur across lands in this category, it is likely to be substantially disturbed and may be cleared without any requirement for regulatory approvals.
- Category 2 – Vulnerable Regulated Land (In-Force): These lands, which include riparian zones, steep lands and specially mapped areas are assumed to be 100% covered by native vegetation.
- Category 2 – Regulated land (Draft): These lands are likely to comprise native vegetation cover as the predominant land use of the area (excluding cropping lands) is livestock grazing with limited pasture improvement. It has been assumed that the conservation value of the groundcover is at least medium.

The extent of native vegetation cover in the Project Area is provided in **Table 6-4.**

TABLE 6-4 AREA OF NATIVE VEGETATION

Aspect	*Value*
Assessment Area (ha)	10,507.20 ha
Total Area of Native Vegetation Cover (ha)	9,236.11 ha
Total Area of Exotic vegetation (ha) Category 1 exempt lands (draft)	1,041.55 ha
Percentage of Native Vegetation Cover (%)	87.9%
Class (0-10, >10-30, >30-70 or >70%)	>70%

6.4.2 PLANT COMMUNITY TYPES

Review of the NSW SVTM and a total of 28 BAM plots were completed during the survey event to identify the following PCTs within the Project Area. The PCTs, TEC associations and percentage area identified on site are listed in **Table 6-5**.

TABLE 6-5 PLANT COMMUNITY TYPES WITHIN THE PROJECT AREA

PCT No.	*PCT Name*	*Vegetation Class*	*TEC Association*	*Cleared Extent (%)*
15	Black Box open woodland wetland with chenopod understory mainly on the outer floodplains in south-western NSW (mainly Riverina Bioregion and Murray Darling Depression Bioregion)	Inland Floodplain Woodlands	N/A	50%
17	Lignum shrubland wetland of the semi-arid (warm) plains (mainly Riverina Bioregion and Murray Darling Depression Bioregion)	Inland Floodplain Shrublands	N/A	63%
28	White Cypress Pine open woodland of sand plains, prior streams and dunes mainly of the semi-arid (warm) climate zone	Riverine Sandhill Woodlands	BC Act Listed, Endangered, Sandhill Pine Woodland in the Riverina, Murray-Darling Depression and NSW South Western Slopes bioregions. BC Act Listed, Endangered, Acacia melvillei Shrubland in the Riverina and Murray-Darling Depression bioregions.	73%

PCT No.	***PCT Name***	***Vegetation Class***	***TEC Association***	***Cleared Extent (%)***
46	Curly Windmill Grass – Speargrass – Wallaby Grass grassland on alluvial clay and loam on the Hay Plain, Riverina Bioregion	Riverine Plain Grasslands	EPBC Act listed, critically endangered, Natural Grasslands of the Murray Valley Plains.	20%
160	Nitre Goosefoot shrubland wetland on clays of the inland floodplains	Inland Floodplain Shurbland	BC Act listed, critically endangered, Artesian Springs Ecological Community in the Great Artesian Basin	28%
163	Dillon Bush (Nitre Bush) shrubland of the semi-arid and arid zones	Riverine Chenopod Shrublands	BC Act listed, critically endangered, Artesian Springs Ecological Community in the Great Artesian Basin	26%
164	Cotton Bush open shrubland of the semi-arid (warm) zone	Riverine Chenopod Shrublands	N/A	8%

Legend

- BAM Plot Location
- Project Area
- Highway / Main Road
- Local Road

PCT (ID - Name)

- 0 - Category 1 Land
- 0 - Farm Dams
- 0 - Infrastructure
- 0 - Planted Vegetation
- 15 - Black Box open woodland wetland with chenopod understorey mainly on the outer floodplains in south-western NSW
- 17 - Lignum shrubland wetland of the semi-arid (warm) plains (mainly Riverina Bioregion and Murray Darling Depression Bioregion)
- 28 - White Cypress Pine open woodland of sand plains, prior streams and dunes mainly of the semi-arid (warm) climate zone
- 44 - Forb-rich Speargrass - Windmill Grass - White Top grassland of the Riverina Bioregion
- 46 - Curly Windmill Grass - speargrass - wallaby grass grassland on alluvial clay and loam on the Hay Plain, Riverina Bioregion
- 163 - Dillon Bush (Nitre Bush) shrubland of the semi-arid and arid zones
- 164 - Cotton Bush open shrubland of the semi-arid (warm) zone

Source:
Boundary: Client Provided
Basedata: DCDB / DTDB
Imagery: ESRI World 2021

COBB HIGHWAY

BOOROORBAN-TCHELERY ROAD

BOOROORBAN

WARGAM ROAD

Coordinate System:
GDA 1994 MGA Zone 55

Date: 11/04/2024

Created By: CS

Drawing Size: A3

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1:50,000

F6.3 Plant Community Types and BAM Plot Locations

Saltbush Wind Farm, **Booroorban**
Preliminary Biodiversity Report
Hay Plains WF Pty Ltd

ERM

6.4.3 THREATENED ECOLOGICAL COMMUNITIES

The PCTs identified across the Project are and review of desktop sources identified the potential for eight (8) TECs to occur within the Project Area. The TECs along with their potential to occur within the Project Area are listed in **Table 6-6**.

TABLE 6-6 TECS IDENTIFIED ON THE SUBJECT LAND

TEC	***EPBC Act***	***BC Act***	***Likelihood to occur within the Project Area***
Sandhill Pine Woodland in the Riverina, Murray-Darling Depression and NSW South Western Slopes bioregions.	-	E	**Likely** Associated PCT 28 present.
Acacia melvillei Shrubland in the Riverina and Murray-Darling Depression bioregions.	-	E	**Unlikely** No *Acacia Melvillei* shrubands present.
Artesian Springs Ecological Community in the Great Artesian Basin.	-	CE	**Unlikely** Project Area is outside known distribution.
Natural Grasslands of the Murray Valley Plains.	CE	-	**Potential** Associated PCTs present. Further investigation required.
Grey Box (*Eucalyptus microcarpa*) Grassy Woodlands and Derived Native Grasslands of South-eastern Australia	E	-	**Unlikely** No Grey Box, *Eucalyptus macrocarpa,* present.
Buloke Woodlands of the Riverina and Murray-Darling Depression Bioregions	E	-	**Unlikely** No Buloke present.
Plains mallee box woodlands of the Murray Darling Depression, Riverina -and Naracoorte Coastal Plain Bioregions	CE	-	**Unlikely** No mallee present.
Weeping Myall Woodlands	E	-	**Unlikely** No Weeping Myall present.

Based on the survey effort completed to date, the following interim conclusions can be made:

- **Potentia**l presence of Natural Grasslands of the Murray Valley Plains TEC; and
- **Likely** presence of Sandhill Pine Woodland in the Riverina, Murray-Darling Depression and NSW South Western Slopes bioregion.

6.4.4 LISTED FLORA AND FAUNA SPECIES

Ten (10) listed species have been recorded during the survey effort completed to date. These species and their listing under the BC and EPBC Acts are shown in **Table 6-7**.

TABLE 6-7 LISTED SPECIES RECORDED WITHIN THE PROJECT AREA

Common Name	***Scientific Name***	***BC Act***	***EPBC Act***
Flora			
Chariot Wheels	*Maireana cheeli*	Vulnerable	Vulnerable
Slender-darling Pea	*Swainsona murrayana*	Vulnerable	Vulnerable
Fauna			
Fork Tailed Swift	*Apus pacificus*	-	Migratory
Grey-crowned Babbler (eastern subspecies)	*Climacteris picumnus victoriae*	Vulnerable	Vulnerable
Little Eagle	*Hieraaetus morphnoides*	Vulnerable	-
Pink Cockatoo	*Lophochroa leadbeateri leadbeateri*	Vulnerable	Endangered
Spotted Harrier	*Circus assimilis*	Vulnerable	-
Southern Bell Frog	*Litoria raniformis*	Endangered	Vulnerable
Southern Whiteface	*Aphelocephala leucopsis*	Vulnerable	Vulnerable
White-fronted Chat	*Epthianura albifrons*	Vulnerable	-

Additional candidate species identified by the BAM-Calculator (BAM-C) that have the potential to occur within the Project Area are listed in **Table 6-8**.

TABLE 6-8 CANDIDATE SPECIES LIST

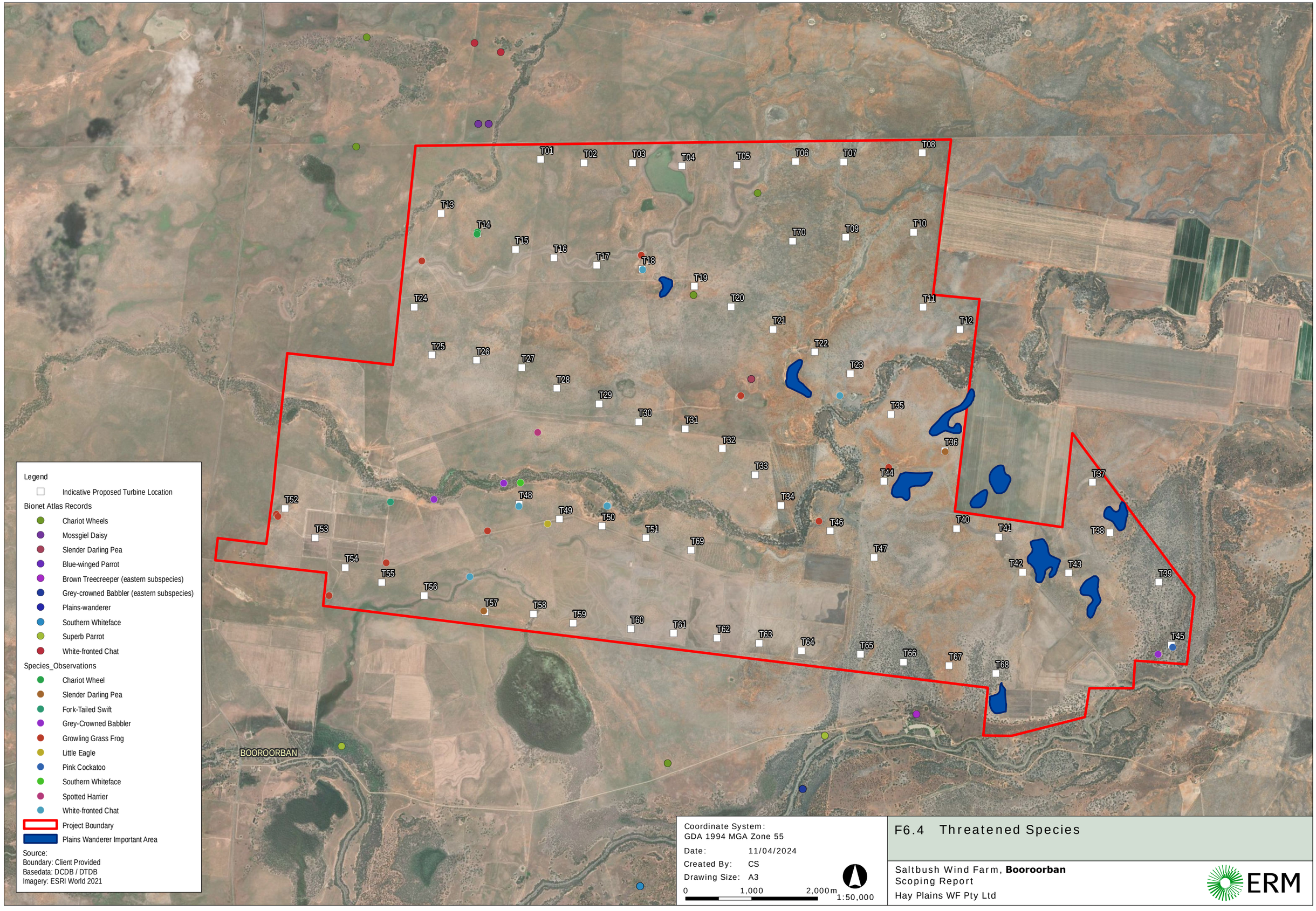
Common Name	***Scientific Name***	***BC Act***	***EPBC Act***	***Recommended Survey period***	***Likelihood to occur within Project Area***
Flora					
Austral Pillwort	*Pilularia novae-hollandiae*	E	-	-	**Unlikely** Project Area does not meet TBDC listed geographic constraint, site is situated west of Deniliquin.
Spear Grass	*Austrostipa wakoolica*	E	E	October, November, December	**Potential** Project Area within distribution, however no records in locality.

Common Name	***Scientific Name***	***BC Act***	***EPBC Act***	***Recommended Survey period***	***Likelihood to occur within Project Area***
Claypan Daisy	*Brachyscome muelleroides*	V	V	October, November, December	**Potential** Project Area within distribution, however no records in locality.
Mossgiel Daisy	*Brachyscome papillosa*	V	V	September, October, November	**Likely** Project Area within distribution, suitable habitat is present, and there are records in locality.
Bindweed	*Convolvulus tedmoorei*	E	-	June, July, August, September	**Potential** Project Area within distribution, however no records in locality.
Yellow Gum	*Eucalyptus leucoxylon subsp. Pruinosa*	V	-	All year	**Potential** Project Area within distribution, however no records in locality.
Winged Peppercress	*Lepidium monoplocoides*	E	E	September, October, November, December	**Likely** Project Area within distribution, suitable habitat is present, and there are records in locality.
Lanky Buttons	*Leptorhynchos orientalis*	E	-	September, October, November	**Potential** Project Area within distribution, however no recent records in locality.
Chariot Wheels	*Maireana cheelii*	V	V	September, October, November, December	**Known** Recorded during survey event.
Turnip Copperburr	*Sclerolaena napiformis*	E	E	September, October, November, December	**Potential** Project Area within distribution, however no records in locality.
Menindee Nightshade	*Solanum karsense*	V	V	-	**Unlikely** Project Area does not meet TBDC listed geographic constraint, the site is situated east of Maude, NSW.
Slender Darling Pea	*Swainsona murrayana*	V	V	September	**Known** Recorded during survey event.
Red Darling Pea	*Swainsona plagiotropis*	V	V	September	**Potential** Project Area within distribution, however no records in locality.

Common Name	***Scientific Name***	***BC Act***	***EPBC Act***	***Recommended Survey period***	***Likelihood to occur within Project Area***
Silky Swainson-pea	*Swainsona sericea*	V	-	September, October, November	**Potential** Project Area within distribution, however no records in locality.
Fauna					
Pink-tailed Legless Lizard	*Aprasia parapulchella*	V	V	-	**Unlikely** Project Area does not meet TBDC listed habitat constraint, the site does not contain rocky areas.
Australian Bustard	*Ardeotis australis*	E	-	All year	**Potential** Project Area within distribution, however no records in locality.
Bush Stone Curlew	*Burhinus grallarius*	E	-	All year	**Likely** Project Area within distribution, suitable habitat is present, and there are records in locality.
White-bellied Sea Eagle	*Haliaeetus leucogaster*	V	M	July, August, September, October, November, December	**Likely** Project Area within distribution, suitable habitat is present, and there are records in locality.
Little Eagle	*Hieraaetus morphnoides*	V	-	August, September, October	**Known** Presence of breeding habitat within Project Area to be confirmed during future targeted survey events.
Swift Parrot	*Lathamus discolor*	E	CE	-	**Unlikely** No mapped areas of importance are present across the Project Area.
Southern Bell Frog	*Litoria raniformis*	E	V	January, October, November, December	**Known** Presence of breeding habitat within Project Area to be confirmed during future targeted survey events.
Major Mitchell's Cockatoo	*Lophochroa leadbeateri*	V	-	September, October, November, December	**Known** Presence of breeding habitat within Project Area to be confirmed during future targeted survey events.

Common Name	***Scientific Name***	***BC Act***	***EPBC Act***	***Recommended Survey period***	***Likelihood to occur within Project Area***
Square-tailed Kite	*Lophoictinia isura*	V	-	January, September, October, November, December	**Likely** Project Area within distribution, suitable habitat is present, and there are records in locality.
Barking Owl	*Ninox connivens*	V	-	May, June, July, August, September, October, November, December	**Likely** Project Area within distribution, suitable habitat is present, and there are records in locality.
Plains-wanderer	*Pedionomus torquatus*	E	CE	-	**Known** Mapped areas of importance are present across the Project Area.
Koala	*Phascolarctos cinereus*	E	E	All year	**Potential** Project Area within distribution, however no records in locality.
Regent Parrot	*Polytelis anthopeplus monarchoides*	E	V	-	**Unlikely** Project Area does not meet TBDC listed geographic constraint, the site is not within 10 km of the junction of the Murray River.
Superb Parrot	*Polytelis swainsonii*	V	V	September, October, November	**Likely** Project Area within distribution, suitable habitat is present, and there are records in locality.

Targeted surveys will be conducted for the species listed in the table in accordance with the BAM, to determine their presence or absence.



F6.4 Threatened Species

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6.4.5 MATTERS OF NATIONAL ENVIRONMENTAL SIGNIFICANCE

Matters of National Environmental Significance (MNES) are environmental matters that are listed and protected by the Commonwealth EPBC Act.

Based on the desktop review of the Protected Matters Search Tool (PMST) identified a total of thirty-three (33) listed species with the potential to occur. Of these species, fifteen (15) have been addressed in **Table 6-8**. The remaining species are addressed in **Table 6-9**.

TABLE 6-9 THREATENED SPECIES WITH THE POTENTIAL TO OCCUR WITHIN THE PROJECT AREA

Common Name	***Scientific Name***	***BC Act***	***EPBC Act***	***Likelihood to occur within the Project Area***
Flathead Galaxias	*Galaxias rostratus*	CE	CE	**Potentia**l Project Area within distribution, however no records in locality.
Silver Perch	*Bidyanus bidyanus*	V	CE	**Unlikely** Outside mapped distribution for the species. Noting the adjacent Coleambally Outfall Drain is mapped as suitable habitat on the DPI Fisheries NSW Spatial Data Portal, however no records in locality and no suitable habitat in the form of fast-flowing water on site.
Macquarie Perch	*Macquaria australasica*	E	E	**Unlikely** Project Area within distribution, however no suitable habitat nor records in locality.
Murray Cod	*Maccullochella peelii*	-	V	**Unlikely** Outside mapped distribution for the species. Noting the adjacent Coleambally Outfall Drain is within distribution.
Trout Cod	*Maccullochella macquariensis*	E	E	**Unlikely** Outside mapped distribution for the species.
Curlew Sandpiper	*Calidris ferruginea*	E	CE, Mi	**Potential** Project Area within distribution, suitable habitat present, however no records in locality.
Australasian Bittern	*Botaurus poiciloptilus*	E	E	**Potential** Project Area within distribution, suitable habitat present, however no records in locality.
Australian Painted Snipe	*Rostratula australis*	E	E	**Potential** Project Area within distribution, suitable habitat present, however no records in locality.

Common Name	***Scientific Name***	***BC Act***	***EPBC Act***	***Likelihood to occur within the Project Area***
South-eastern Hooded Robin	*Melanodryas cucullata cucullata*	E	E	**Potential** Project Area within distribution, suitable habitat present, however no records in locality.
Painted Honeyeater	*Grantiella picta*	V	V	**Potential** Project Area within distribution, suitable habitat present, however no records in locality.
Grey Falcon	*Falco hypoleucos*	V	V	**Likely** Project Area within distribution, suitable habitat present, and a record from 1999 in the locality.
Sharp-tailed Sandpiper	*Calidris acuminata*	-	V, Mi	**Potential** Project Area within distribution, suitable habitat present, however no records in locality.
Diamond Firetail	*Stagonopleura guttata*	V	V	**Likely** Project Area within distribution, suitable habitat present, and multiple records in the locality.
Latham's Snipe	*Gallinago hardwickii*	-	V, Mi	**Potential** Project Area within distribution, suitable habitat present, however no records in locality.
Corben's Long-eared Bat	*Nyctophilus corbeni*	V	V	**Potential** Project Area within distribution, suitable habitat present, however no records in locality.
Blue-winged Parrot	*Neophema chrysostoma*	V	V	**Likely** Project Area within distribution, suitable habitat present, and multiple records in the locality.
Grey Snake	*Hemiaspis damelii*	E	E	**Potential** Project Area within distribution, suitable habitat present, however no records in locality.
Sloane's Froglet	*Crinia sloanei*	E	E	**Potential** Parts of the Project Area within distribution, suitable habitat present, however no records in locality.

Eight (8) species listed as migratory were identified by the PMST with the potential to occur within the Project Area. These species are listed in **Table 6-10**.

TABLE 6-10 MIGRATORY SPECIES WITH THE POTENTIAL TO OCCUR WITHIN THE PROJECT AREA

Common Name	***Scientific Name***	***BC Act***	***EPBC Act***	***Likelihood to occur within the Project Area***
Yellow Wagtail	*Motacilla flava*	-	Mi	**Potential** Project Area within distribution, however no records in locality.
Sharp-tailed Sandpiper	*Calidris acuminata*	-	Mi, V	**Potential** Project Area within distribution, however no records in locality.
Latham's Snipe	*Gallinago hardwickii*	-	Mi, V	**Potential** Project Area within distribution, however no records in locality.
Common Sandpiper	*Actitis hypoleucos*	-	Mi	**Potential** Project Area within distribution, however no records in locality.
Fork-tailed Swift	*Apus pacificus*	-	Mi	**Known** Identified during field surveys
Satin Flycatcher	*Myiagra cyanoleuca*	-	Mi	**Potential** Project Area within distribution, however no records in locality.
Curlew Sandpiper	*Calidris ferruginea*	E	Mi, CE	**Potential** Project Area within distribution, however no records in locality.
Pectoral Sandpiper	*Calidris melanotos*	-	Mi	**Potential** Project Area within distribution, however no records in locality.

Under the EPBC Act, developments that are expected to have a significant impact on MNES are required to refer the project (proposed action) to the Commonwealth Minister for Environment and Water. This process involves a formal assessment and determination by the minister. If the minister determines the proposed action is likely to have a significant impact on MNES then the action is deemed to be a 'controlled action' under the EPBC Act.

NSW maintains a bilateral agreement with the Commonwealth Government with regards to biodiversity. Therefore, assessments completed under the NSW BAM by an accredited assessor comply with both state and federal standards.

6.4.6 ASSESSMENT APPROACH

The construction and operation of the proposed Project has the potential to impact species, communities and other matters listed under the BC Act and the EPBC Act. Therefore, the Project SEARs are likely to require a Biodiversity Development Assessment Report (BDAR). This will require the implementation of Stage 1 and Stage 2 of the BAM.

Stage 1 of the BAM will require additional survey efforts completed across distinct seasons in order to satisfy the relevant requirements. The BDAR will document the methods and results of each survey period and how they comply with the relevant survey guidelines listed in section 7.1 of the PBA. Remaining investigations include:

- Review of category -1 exempt land
- Mapping of field verified PCTs and condition states to determine vegetation zones
- Review of candidate species list following confirmation of PCT mapping
- Conduct targeted surveys for updated candidate species list.

Stage 2 of the BAM will be used to demonstrate how the Project will meet the "No Net Loss" requirement under the BC Act. The calculation of impacts is based on the extent of biodiversity values being impacted, and whether the impact is direct, indirect or prescribed. These impacts are to be assessed using the mitigation hierarchy. This assessment is used by the BAM to calculate the offset liability of the Project in units known as biodiversity credits. A biodiversity offset strategy will be defined using these assessments to demonstrate the "No Net Loss" for the proposed Project.

The preparation of the Project BDAR which addresses the above items is to be prepared to support the Project EIS.

6.5 ABORIGINAL CULTURAL HERITAGE

6.5.1 EXISTING ENVIRONMENT

The Project is located on the traditional land of the Wiradjuri Nation, the largest Aboriginal language group in NSW. The Wiradjuri Nation is reported to be bounded by the Lachlan, Macquarie and Murrumbidgee Rivers (HO and DUAP 1996).

A localised landscape based predictive model for Aboriginal cultural heritage sites of significance has been developed as a part of the Murrumbidgee Province Aboriginal Cultural Heritage Study. This study included the Project Area and has been used as a part of this assessment. The Project Area is largely comprised of landscape features that have been identified in these studies as having the potential to contain Aboriginal sites.

Preliminary Aboriginal cultural heritage sensitivity mapping using landscape features and soil types has been provided in **Figure 6-5**. This has been based on desktop review of previous assessments in the locality of the Project. Areas associated with scalded plains and paleo environments were assessed to contain high sensitivity associated with the potential to contain burial sites and intact deposits. Areas associated with low lying landforms, grey cracking clay subject to periodic inundation have been identified as low sensitivity, although it should be noted that regional data identifies sites that have been located in this context.

Further field assessment would be required to identify any additional environmental or landscape features which may also be archaeologically sensitive. Detailed environmental modelling and ground-truthing would be required to adequately categorise the archaeological and cultural sensitivity of the Project Area.

Cultural Heritage studies completed in the region also note intangible ceremonial, dreaming and story sites throughout the locality of the Project. These areas are often associated with waterholes, hills, trees and other landscape features.

6.5.2 AHIMS SEARCH RESULTS

The Aboriginal Heritage Information Management System (AHIMS) database provides information concerning previously recorded Aboriginal sites in NSW. An extensive search of the AHIMS database was conducted on 02 November 2023 to encapsulate the Project Area. The search was conducted utilising the parameters provided in **Table 6-11** and shown in **Figure 6-6**.

TABLE 6-11 AHIMS DATABASE SEARCH DETAILS

Parameters	*Search*
Client Service ID	835827
Datum	GDA Zone 55
Latitude, Longitude From:	-34.9441, 144.7351
Latitude, Longitude To:	-34.8033, 144.9823
Number Sites	34

A total of 34 sites were identified within proximity to the Project Area. Site types include Artefacts, Hearths, Earth Mounds, Potential Archaeological Deposits (PADs), and Culturally Modified Trees (CMTs). Many of the registered sites contain multiple site types in one location (e.g. Artefact and Hearth). While no known sites in the immediate vicinity of the Project Area contain burials, the presence of earth mounds within the AHIMS search results and sensitive soils within the Project Area suggest that burials may also be with this landscape.

The results of the full AHIMS search are summarised in **Table 6-12**.

TABLE 6-12 AHIMS REGISTERED SITE TYPES

Site Type	*Total Number of Site types across Search parameters*	*Number of Sites within Project Area*
Artefact	10	0
Artefact, Potential Archaeological Deposit (PAD)	2	0
Artefact, Hearth	8	0
Earth Mound	2	0
Hearth	4	0
Modified Tree (Carved or Scarred)	8	0
Total	**34**	**0**

6.5.3 NATIVE TITLE ACT 1994

The *Native Title Act 1994* was introduced to work in conjunction with the *Commonwealth Native Title Act 1993*. The Native Title Act recognises and protects the traditional and continuing rights and interests of Aboriginal and Torres Strait Island people. This may include the right to protect places and areas that area important under traditional law where Native Title has been determined.

The Project Area is not located within the boundaries of a native title claim or determination.

6.5.4 ARCHAEOLOGICAL CONTEXT

There are no existing archaeological investigations within the Project Area, therefore a desktop review of available information has been completed to inform the archaeological context.

Several studies within the Project locality in the Hay Shire Council have identified a range of Aboriginal sites including:

- Transmission line project between Deniliquin and Darlington Point project identified 27 Aboriginal sites.
- Sunraysia solar farm project near Balranald identified 3 Aboriginal sites.
- Balranald Mineral Sands project identified 548 Aboriginal sites.
- Investigations at Cooey Point lagoon near the Murrumbidgee River identified 125 Aboriginal sites.
- Investigations completed by Pardoe and Martin (2001) within the Murrumbidgee catchment identified 347 Aboriginal sites.

These surveys demonstrate that stone artefacts, hearths, mounds and some modified/scarred trees are the most common site types in the area. Due to the landscape and soil type within the Project Area, it is very likely that this pattern of hearths and mounds will be similarly evident. The presence and durability of stone artefacts in the previously surveyed areas suggests a similar frequency may occur within the Project Area.

6.5.5 ASSESSMENT APPROACH

Based on the results of the preliminary assessment and the AHIMs search results, it is considered likely that there are significant areas within the project boundary which contain evidence of past Aboriginal land use. Predictive modelling prepared at this stage of the process can assist in determining sensitive landscapes; however, it is acknowledged that more detailed investigation and assessment will be required to inform the next phase of project planning and design. In consideration of these factors, the following recommendations are made:

- Comprehensive investigation that includes pedestrian field survey, consultation with Aboriginal stakeholders, sensitivity mapping, and archaeological test excavation (as required) should be undertaken during the development application stage;

- The investigations are to be undertaken in accordance with all NSW legislation and relevant guidelines including the *Guide to investigating, assessing and reporting on Aboriginal cultural heritage in NSW* (OEH 2011), the *Code of Practice for the Archaeological Investigation of Aboriginal Objects in NSW* (DECCW 2010), and *Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010* (DECCW, 2010);
- Results of the investigations are to be detailed in an Aboriginal Cultural Heritage Assessment Report (ACHAR), in accordance with the *Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW* (DECCW, 2010); and
- Upon completion of the ACHAR, a Cultural Heritage Management Plan (CHMP) should be prepared in consultation with the projects registered Aboriginal parties (RAPs) to ensure appropriate management of any identified cultural heritage throughout the construction process.

Legend

- Indicative Proposed Turbine Location
- Highway / Main Road
- Local Road
- Track-Vehicular

Cultural Heritage Constraints

- High
- Moderate
- Low

Source:
Boundary: Client Provided
Basedata: DCDB / DTDB
Imagery: ESRI World 2021

T01 T02 T03 T04 T05 T06 T07 T08 T09 T10 T11 T12 T13 T14 T15 T16 T17 T18 T19 T20 T21 T22 T23 T24 T25 T26 T27 T28 T29 T30 T31 T32 T33 T34 T35 T36 T37 T38 T39 T40 T41 T42 T43 T44 T45 T46 T47 T48 T49 T50 T51 T52 T53 T54 T55 T56 T57 T58 T59 T60 T61 T62 T63 T64 T65 T66 T67 T68 T69 T70

COBB HIGHWAY

BOOROORBAN-TCHELERY ROAD

BOOROORBAN

WARGAM ROAD

Coordinate System:
GDA 1994 MGA Zone 55

Date: 10/04/2024
Created By: CS
Drawing Size: A3

0 1,000 2,000m
1:50,000

F6.5 Cultural Heritage Constraints

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48-5-0553
48-5-0552
48-5-0436
48-5-0452
48-5-0437
48-5-0348
48-5-0198
COBB HIGHWAY
BOOROORBAN
WARGAM ROAD

Legend

AHIMS Location

- Artefact : -
- Artefact : -, Hearth : -
- Artefact : -, Potential Archaeological Deposit (PAD) : -
- Hearth : -
- Modified Tree (Carved or Scarred) : -
- Project Boundary
- Highway / Main Road
- Local Road

Source:
Boundary: Client Provided
Basedata: DCDB / DTDB
Imagery: ESRI World 2021

Coordinate System:
GDA 1994 MGA Zone 55

Date: 08/04/2024
Created By: CS
Drawing Size: A3

0 1,000 2,000m
1:50,000

F6.6 AHIMS Sites

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6.6 NON-ABORIGINAL CULTURAL HERITAGE

6.6.1 HISTORICAL BACKGROUND

Early colonial exploration of the Murrumbidgee Region began in the 1820s with Charles Sturt's exploration along the Murrumbidgee River. Throughout the 1830s, stockholders gradually encroached westward into the region explored by Sturt and his men. By 1839, the area surrounding Hay had been occupied by squatters with an initial focus on cattle and sheep farming, and later grain crops.

Development of a township at Balranald followed thereafter, with the first investigation taking place in 1848 when the Commissioner for Crown Lands for the Lower Darling District, George James MacDonald, arrived in the region. In the same year Leighton Robinson and Thomas Duggan established a general store at Balranald and the Balranald Inn was erected by a Mr Robertson. The township of Balranald was formally gazetted in April 1851 and the first land sale held on 14 January 1852, with thirty-five lots submitted to public auction.

The Colonial Secretary ordered that a number of reserves on the lower Murrumbidgee River be surveyed, and these were then gazetted in October 1852. One of these was the Pimpampa Reserve. In the 1860s, surveyors Adams and Twynam laid out plans for a township at Pimpampa Reserve. They proposed the name Pimpaympa, after the original stock runs, however the town was to be called Maude (located approximately 60 km north-west of the Project Area). Despite valid concerns of the area's proclivity to flooding and high river levels, construction of a hotel was completed in 1862, and a post office by 1863. Locals' requests for land to be posted for sale were initially rebuked with officials citing a lack of traffic and desire for colonial settling of the area, however land was eventually offered for sale in 1865.

In the October 1858, Henry Leonard completed construction of an inn at Lang's-Crossing-Place, and by mid-1859, the Department of Lands had proclaimed reservations either side of the Murrumbidgee River. A township coalesced here, and by October 1859, Lang's-Crossing-Place was renamed Hay. In 1859 the first Post office was opened and in 1860 the original courthouse was built (now present location of the Post Office). Cobb & Co Coaches made Hay the headquarters of their Victoria and Riverine operations from 1862 to 1896, setting up a coach factory on the corner of Lachlan and Randall Streets; this became the largest coach factory in Australia outside of Sydney (Hay Shire Council, 2023)

Given the amount of traffic from Langs Crossing to Deniliquin in the south, there was a need for a place to rest and be reliably watered. In 1859, Hay citizens raised money to dig a well at Pine Ridge (now Booroorban, approximately 16 km south-east of the Project Area). In 1868 the Royal Mail Hotel was built adjacent to the well, and it became a vibrant Cobb & Co staging post. By 1885 Booroorban was formerly proclaimed as a village and two hotels, a school, post office, and general store had been established (Aussie Towns, 2023).

The Project Area is within the historic Miranda Parish of Wakool County. Historical maps and aerials of the Project Area indicate that historic land use comprised agricultural pursuits. Land use associated with pastoral properties would have included the construction of homesteads as well as a variety of structures associated with grazing activities including sheds, tanks, and shearing quarters. Little has changed in the use of these properties, as pastoral grazing of sheep and cattle is still the principal industry of the region.

6.6.2 STATUTORY HERITAGE REGISTERS

The following Statutory Heritage Registers were searched on 1 November 2023, and the results of these searches are included below:

6.6.2.1 WORLD HERITAGE LIST

The United Nations Educational, Scientific and Cultural Organisation (UNESCO) World Heritage List includes properties in Australia that are matters of national environmental significance and are protected and managed under the EPBC Act. There are no World Heritage places within or within proximity to the Project Area.

6.6.2.2 COMMONWEALTH HERITAGE LIST

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

6.6.2.3 NATIONAL HERITAGE LIST

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

6.6.2.4 STATE HERITAGE REGISTER

The NSW State Heritage Register contains places and objects significant to the heritage of the state of NSW and are protected under the Heritage Act 1977.

A review of the State Heritage Register identified no State Heritage listed places within or in proximity to the Project Area.

6.6.2.5 LOCAL ENVIRONMENTAL PLANS

Local Environmental Plans (LEPs) include listings of locally significant heritage places as individual items, or areas containing multiple items and potential items. Heritage places listed in LEPs may relate to environmental, Aboriginal, archaeological, or general built fabric heritage. They are protected under the EP&A Act through the respective LEP provisions but may jointly be recorded on a high-order heritage list or register, the legislation of which generally takes precedence. A review of the LEP map (HER_003A) relevant to the Project Area identified the below that are within 10 km of the Project Area:

1. (Edward River) Conargo LEP 2013 –
    a. Item 03, Royal Mail Hotel for its historic significance and ties to Cobb & Co, located approximately 2.7 km south of the Project Area.

The Project is not expected to have any direct impacts to the Royal Mail Hotel, this is due to the Project's distance from the site and proposed access locations occurring on the Cobb Highway, north of this location.

6.6.2.6 SECTION 170 HERITAGE REGISTERS

Section 170 of the Heritage Act 1977 requires all NSW state agencies to identify, conserve and manage the heritage assets owned, managed, and occupied by that agency. In order to facilitate this, Section 170 heritage registers were established for all NSW government agencies. These registers are held and maintained by each state agency and updated as assets are acquired, altered, or decommissioned. They are made publicly available through the State Heritage Inventory. There are no Section 170 heritage register records identified in the Project Area or within proximity to the Project Area.

6.6.3 NON-STATUTORY CONSIDERATIONS

6.6.3.1 REGISTER OF NATIONAL ESTATE

The Register of the National Estate (RNE) is a non-statutory archive of significant natural, historic, and Indigenous places and incorporates over 13,000 places. Originally compiled between 1976 and 2003 by the Australian Heritage Commission, the register is now maintained by the Australian Heritage Council.

Following amendments to the Australian Heritage Council Act 2003, the RNE was frozen on 19 February 2007, which means that no new places can be added, or removed. Since February 2012, the RNE has been maintained as a non-statutory archive.

A search of the RNE identified no RNE listed places within or in proximity to the Project Area.

6.6.3.2 NATIONAL TRUST OF AUSTRALIA (NSW) HERITAGE REGISTER

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

The National Trust Heritage Register is not publicly accessible, and search has not been requested for this preliminary investigation. However, a general desktop search of the Project Area has not indicated the presence of any National Trust listed properties within or within proximity to the Project Area.

6.6.4 ASSESSMENT APPROACH

Preliminary assessment has shown there are no historic heritage items within the Project Area listed on national, state, or local statutory heritage registers. While no registered historic heritage items are located within the Project Area, further assessment would be required to better establish the non-Indigenous archaeological potential of the Project Area. Based on this information, it is recommended that a preliminary historic heritage assessment be prepared as part of the EIS.

6.7 HAZARDS AND RISKS

6.7.1 PRELIMINARY HAZARD ANALYSIS

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

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

Appendix 3 of the *Applying SEPP 33* Guidelines (DoP, 2011) lists the industries that may fall within the Resilience and Hazards SEPP (former SEPP 33), which do not include wind farms, however a BESS is part of the Project infrastructure. Therefore, a Hazards Assessment is expected to be a requirement of the Project SEARs and will require consideration as a part of the EIS.

This assessment will evaluate likely risks to public safety, with key focus on transport, and the handling and use of hazardous materials. The assessment will also determine whether the Project should be considered a hazardous or potentially hazardous industry under the Resilience and Hazards SEPP.

6.7.2 BUSHFIRE

6.7.2.1 EXISTING ENVIRONMENT

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

The Project Area is characterised by a relatively flat landscape consisting of grazed agricultural land with stands of native vegetation associated with ephemeral creek lines that maintain connectivity to vegetation to adjacent areas.

A review of the NSW RFS Bushfire Prone Land mapping confirms that the Project Area is currently recognised as Vegetation Category 3 Risk (refer to **Figure 6-7**). The South West Woodland Nature Reserve south of the Project Area is largely mapped as Vegetation Category 1 Risk. In line with the NSW RFS Guide for Bush Fire Prone Land Mapping (RFS, 2015), Vegetation Category 3 is considered to be medium bush fire risk vegetation. NPWS Fire History data indicates a 91,241 ha fire occurred 10 km south of the Project Area in 1986. Although there are no records past this point, grassfires have the potential to occur within the Project Area and still carry a risk to human health and Project infrastructure.

6.7.2.2 ASSESSMENT APPROACH

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

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

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

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

6.7.3 BLADE THROW

Blade throw refers to the risk of wind turbine blades breaking during operation, which may result in human injury or potential damage to infrastructure. Blade throw is generally considered to be a low risk during the operation phase of the Project, which will utilise wind turbine technology that has been proven to be both safe and reliable.

A Blade Throw Risk Assessment will be prepared as part of the EIS, which will describe the potential impacts associated with blade throw to nearby residential receptors during operation of the Project. The assessment will be undertaken having consideration of applicable international standards concerning the design of wind turbine components.

The Blade Throw Risk Assessment will likely include the following scope of works:

- assessment of the likelihood of occurrence for a blade throw event;
- assessment of theoretical distance radii for a blade throw event;
- review of distances between turbines and nearby dwellings;

review of historical blade throw occurrences in Australian wind farms; and

- provision of relevant mitigation measures for Project implementation.

6.7.4 ELECTROMAGNETIC FIELD (EMF) AND ELECTROMAGNETIC INTERFERENCE (EMI)

6.7.4.1 EMF

Electromagnetic Fields (EMF) are associated with all electrical wiring and equipment. Electrical fields are caused by the voltage of the equipment, while magnetic fields are caused by the current flowing (amperage). Electric fields and magnetic fields are independent of one another and, in combination, cause energy to be transferred along electric wires.

The Project will involve the generation of EMFs during operation from the proposed transmission lines and substations. Over the past 50 years, concerns have been expressed that the EMFs associated with electrical equipment might have adverse health effects. There are known health effects from very high levels of EMFs and health standards have been established to protect against these effects. However, the World Health Organisation (WHO, 2020) recognise that no adverse health effects from long-term exposure to extremely low frequency (ELF) EMF have been confirmed.

An EMF assessment will be prepared as a component of the EIS, which will assess the potential impacts and risks to human health associated with the EMF generated by the solar farm electrical infrastructure. While adverse health effects from exposure to ELF EMFs have not been established, the possibility remains that such effects may exist, and it remains a risk during the construction and operational phases of the Project.

6.7.4.2 EMI

The operation of a wind farm has the potential to interfere with the electromagnetic signals associated with telecommunication services. Existing telecommunication services in the vicinity of the Project Area include mobile phone services, radio communication services, television and radio broadcast services, and aircraft navigation services, which local residents and local towns including Balranald are reliant upon.

A search of the Australian Communication and Media Authority (ACMA) database identified 10 sites within 20 km of the Project Area, as presented in **Figure 6-8**.

An electromagnetic interference (EMI) assessment will be undertaken as a component of the EIS, which will consider the potential impacts of the Project on telecommunications services. It will involve the preparation of a detailed desktop assessment of existing electromagnetic services within the Project Area, and recommended measures to avoid or minimise potential impacts to telecommunications services during construction and operation of the Project

COBB HIGHWAY

BOOROORBAN TANK

BOOROORBAN

WARGAM ROAD

Legend

- Project Boundary
- Waterbody

Bushfire Prone Land

- Vegetation Category 1
- Vegetation Category 2 & 3
- Vegetation Buffer

Source:
Boundary: Client Provided
Basedata: DCDB / DTDB
Imagery: ESRI World 2021

Coordinate System:
GDA 1994 MGA Zone 55

Date: 08/04/2024
Created By: CS
Drawing Size: A3

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F6.7 Bushfire Prone Land

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Legend

- ACMA Site Location
- Project Boundary
- Highway / Main Road
- Local Road
- Track-Vehicular

Source:
Boundary: Client Provided
Basedata: DCDB / DTDB
Imagery: ESRI World 2021

Mobile Spectrum Licensing Site COBB HIGHWAY

Telstra Radio Terminal Godfrey MAUDE

290 Princes Hway BOMADERRY

154 Princes Highway NOWRA

ViaSat Earth Station, 7219 Cobb Highway Booroorban

Telstra Site, 7306 Wargum Rd BOOROORBAN

Mobile Spectrum Licensing Site COBB HIGHWAY

Essential Energy 35m Lattice Tower 75 Warwillah Rd WANGANELLA

NSWTA 100m Guyed Mast 75 Warwillah Road WANGANELLA

Telstra DRCS Base WARWILLAH

Telstra DRCS Site WARWILLAH

RAHEEN ROAD

JERILDERIE ROAD

WEST BURRABOGIE ROAD

ROMANI ROAD

COBB HIGHWAY

BOOROORBAN-TCHELERY ROAD

BOOROORBAN

WARGAM ROAD

WILLURAH ROAD

WILLURAH

EAST-WEST ROAD

WANGANELLA-MOULAMEIN ROAD

Coordinate System:
GDA 1994 MGA Zone 55

Date: 08/04/2024

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Drawing Size: A3

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F6.8 ACMA Sites within 20 km of the Project

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6.8 TRAFFIC AND TRANSPORT

6.8.1 EXISTING ENVIRONMENT

The Project Area is located approximately 388 km from Melbourne, 650 km from Adelaide and 770 km from Sydney (by road). Access to the Project Area during construction and operations is expected via the regional council road network, Cobb Highway and Wargam Road, that extend from the Cobb Highway each with a 100 km/h speed limit. The Cobb Highway is a State Road under the management of Transport for New South Wales (TfNSW). It runs in a general north-south alignment between the Barrier Highway in the north and Echuca in the south. It has a speed limit of 100km/hr within the vicinity of the Project Area, and a carriageway width of approximately 7 metres accommodating one lane of traffic in each direction with grassed verges on both sides of the road. Traffic volume data from 2006 to 2012 suggests that the Cobb Highway in the vicinity of the Project carries in the order of 600 vehicles per day (two-way volume).

The delivery port for materials used to construct the Project is yet to be determined. Potential port options include the Port of Geelong or the Port of Melbourne. Materials will then be transported by road to the Project location.

6.8.2 ASSESSMENT APPROACH

As part of the Scoping Report, a Desktop Transport Assessment (DTA) was prepared by Amber in November 2023 which considers potential transportation routes for construction traffic and potential impacts of the size, loads, and volumes of vehicles on the road network. The DTA was prepared in accordance with:

- Guide to Traffic Generating Developments (RTA, 2002);
- Austroads Guide to Road Design; and
- Austroads Guide to Traffic Management (Austroads, No Date).

The delivery port is yet to be determined. The Port of Geelong and the Port of Melbourne are being considered for this Project. The adopted delivery port will be confirmed and assessment of the potential transport routes will be undertaken as part of the EIS.

Vehicle access for construction and operation vehicles is proposed by an unnamed, unsealed road intersecting with Cobb Highway at the southwest corner of the Project Area (refer **Figure 3-1**). The details of the site access will be determined as part of the EIS.

A Traffic and Transport Impact Assessment (TTIA) will be prepared to inform the EIS. This will identify a proposed transport route from the port to the Project Area, as well as any required road upgrades.

6.9 AVIATION

6.9.1 EXISTING ENVIRONMENT

A preliminary review of aircraft landing areas (ALAs) was undertaken of the Project Area and its surrounding regions. Two ALAs were identified within the vicinity of the Project Area, which include:

- Hay Airport (YHAY) - a regional airport located 35 km north of the Project Area that is operated by Hay Shire Council and services the Hay region;
- Ravensworth Airport (YRWH) - a small airport located 53 km northwest of the Project Area that is likely only used for local transport and aerial application operations; and
- Deniliquin Aerodrome – a small airport located 70 km south of the Project Area that is not currently operating as regular public transport.

6.9.2 ASSESSMENT APPROACH

An aviation impact assessment will be undertaken for the EIS, which will assess any potential impacts to aviation safety associated with the Project. The assessment will include consideration of:

- potential impacts to aviation safety including wake / turbulence issues;
- the need for aviation safety lighting;
- air traffic routes, heights procedures, radar and communications systems and navigation aids; and
- potential impacts on aerial emergency services, aerial firefighting, and aerial agricultural operations.

The assessment will address any aviation concerns raised during consultation with the community and key stakeholders, and identify relevant mitigation strategies to be implemented where required. Consultation with the Civil Aviation Safety Authority (CASA) will also be undertaken to determine relevant aviation safety lighting requirements, notification and reporting requirements, and the potential marking of turbines, wind monitoring towers, and overhead transmission lines and poles.

6.10 SOCIAL

This section provides an overview of the first phase Social Impact Assessment (SIA) undertaken for the Project, found in **Appendix E**. The first phase SIA aligns with the DPE's Social Impact Assessment Guideline for State Significant Projects (SIA Guideline) (DPIE, 2021b) and DPE's Technical Supplement: Social Impact Assessment Guideline for State Significant Projects (SIA Technical Supplement) (DPE, 2021a).

The first phase SIA involves scoping and preliminary assessment, identifies the level of assessment to be applied, and sets further parameters for the second phase SIA (the assessment report to be appended to the EIS) (DPE 2021, p.12). Accordingly, the first phase SIA includes:

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

6.10.1 EXISTING ENVIRONMENT

The Project is located on the northern boundary of the Edward River LGA, which borders on the Hay LGA. The Project is approximately 46 km south of the town of Hay; the site is accessible via the Cobb Highway, which crosses through Hay from north to south. The regional centres that are nearby and may provide goods and services to support the construction and operation phases of the Project include:

- Hay (UCL population of 2,208 and approximately 46 km by road from the Project);
- Deniliquin (UCL population 6,431 and approx. 75 km by road from the Project);
- Balranald (UCL 1,063 population and approx. 150 km by road from the Project);
- Darlington Point (UCL population 868 and approx. 160 km by road from the Project);
- Swan Hill (UCL population 10,869 and approx. 160 km by road from the Project); and
- Griffith (UCL 20,799 population and Community approx. 185 km by road from the Project).

This first phase SIA draws on the 2021 ABS, which are the most recent statistics at the time of writing, for the purpose of providing a socio-economic baseline analysis (refer to Table 1-3 of **Appendix E**). Socio-economic Indexes for Areas data outlined highlights that the level of socio-economic disadvantage in the two Statistical Area Level 1's (SA1), one containing the Project and the other adjacent to the Project Area, are moderately advantaged compared to both the Hay and Edward River LGAs (refer to Table 1-3 of the **Appendix E**). The Project social locality is shown in **Figure 6-9**.

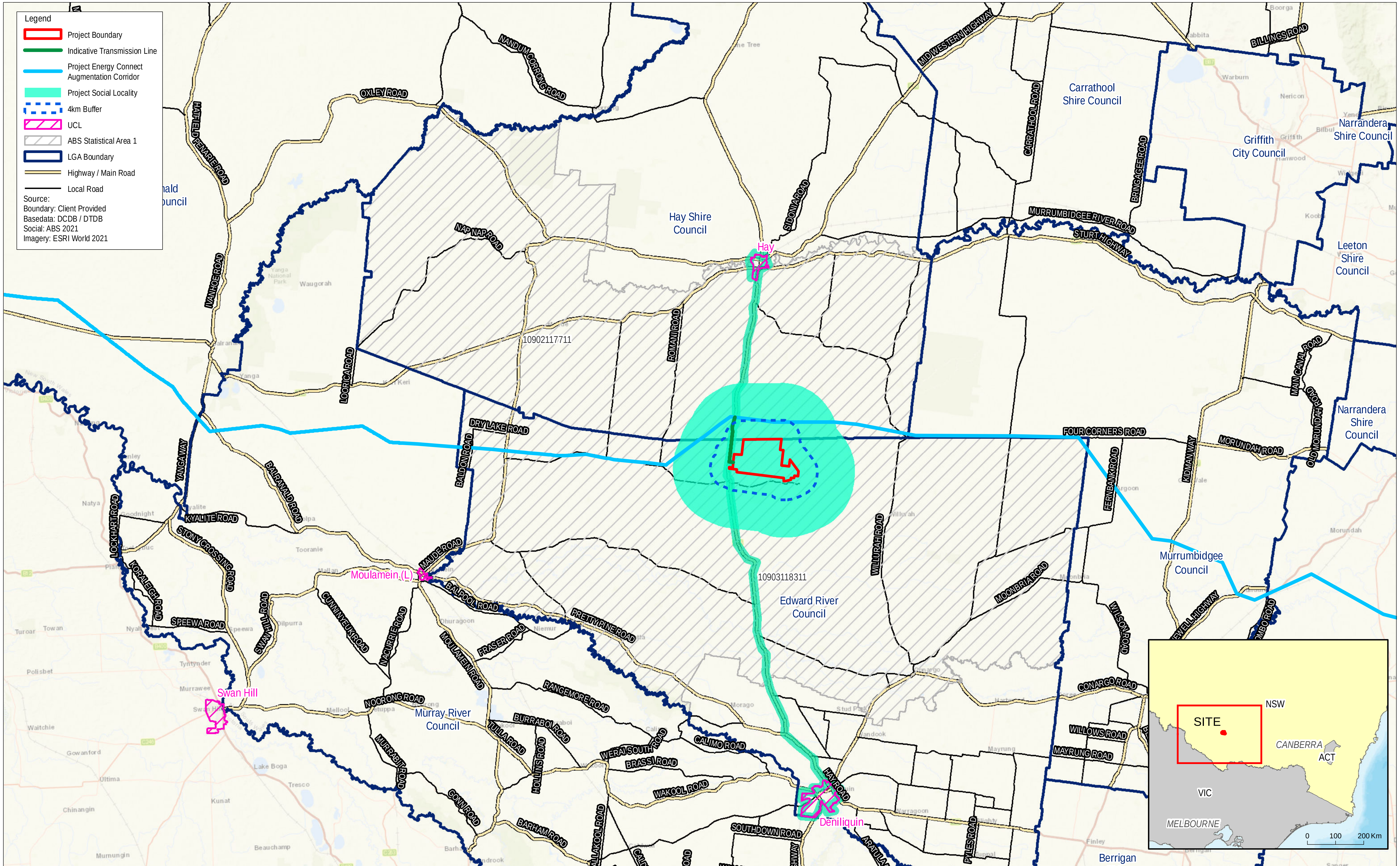
6.10.2 SOCIAL INFRASTRUCTURE

The three regional centres that are most likely to provide social infrastructure for the Project are Hay, Deniliquin, and Griffith due to their size, proximity, and accessibility to the Project via Cobb Highway. Social infrastructure is a term that covers a wide range of services and facilities that meet community needs for education, health, social support, recreation, cultural expression, social interaction, and community development; including schools and other education institutions, medical services, emergency services, recreational facilities and community organisations.

The preliminary desktop assessment has determined that the social infrastructure provided by Hay, Deniliquin and Griffith will likely be sufficient to meet the demands during the construction and operation phases of the Project, however, the desktop assessment has also included the nearby regional centres of Balranald, Swan Hill and Darlington Point, which will be investigated further in the second phase SIA. The investigation in the second phase SIA will focus on the capacity of social infrastructure in the Social Locality through drawing on engagement activities undertaken with relevant stakeholders, including local Government, local businesses, and the wider community.

6.10.3 ASSESSMENT APPROACH

The desktop analysis of social impacts in Table 1-7 of **Appendix E** has revealed a range of positive and negative social impacts that will be assessed in detail in the second phase SIA. The negative social impacts identified were mainly to local amenity, and landscape and land use changes; whereas positive impacts regarded local employment and procurement opportunities, and community benefits. The identified potential impacts listed Table 1-7 will be ground-truthed, supplemented by stakeholder feedback, and reviewed against any changes associated with further design development subsequent to issuing the SEARs.



Coordinate System:
GDA 1994 MGA Zone 55
Date: 02/05/2024
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F6-9 Project Social Locality

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6.11 WATER RESOURCES

6.11.1 EXISTING ENVIRONMENT

6.11.1.1 SURFACE WATER

The Project Area is located within the Murrumbidgee and Lake George Catchment which covers an area of 84,000 km^2. Elevations across the catchment vary from over 1,400 metres in the high mountain ranges north of the catchment, to less than 50 metres associated with floodplains. It contains a number of sites of international ecological significance, including the RAMSAR listed NSW Central Murray State Forests Wetlands located over 100 km south of the Project Area, and 16 wetlands listed as nationally significant in the directory of important wetlands.

The Lowbidgee floodplain, between Maude and Balranald, is the largest remaining wetland in the Murrumbidgee Valley covering an area of over 2,000 km^2. The Catchment also includes the second largest red gum forest in Australia along the river downstream of Redbank Weir (Australian Government, 2023).

The ephemeral Nyangay and Curtains Creeks and run in a general east-west alignment and traverse through the Project Area. The Coleambally Outfall Drain runs in a general west-east alignment below the Project Area, and traverses at the southeastern-most corner of the Project Area. A circular patch of land south of the Project Boundary is classified as wetland under the Conargo LEP.

There are no known threatened freshwater fish species within either Nyangay or Curtains Creek. There are no wetlands of international importance, nationally important wetlands, or large waterbodies within the Project Area. There are several farm dams, and three larger dams dispersed within the Project Area. The watercourses present within the Project Area and the surroundings are presented in **Figure 6-10**.

6.11.1.2 GROUND WATER AND GROUND WATER DEPENDENT ECOSYSTEMS

There are three (3) groundwater bore within the Project Area and several more near the Project Area. One of the boreholes near the southern boundary of the Project Area has been regularly monitored up to October 2022, with the most depth to water level sitting at 18.26 m below ground level. The Project Area is not within an area mapped as 'Groundwater Vulnerability' under the Conargo LEP.

Groundwater Dependent Ecosystems (GDEs) rely on access to groundwater to maintain water requirements for plants and animals. There are no GDEs mapped within the Project Area (BOM, 2017).

A map of the local hydrology present within the Project Area and its surroundings is provided in **Figure 6-10**.

6.11.1.3 FLOODING

The Project Area and wider Hay Plains are relatively flat in nature with several constructed dams and drainage channels. Natural water features include Nyangay Creek, Curtains Creek and associated ephemeral waterways. The built components of the Project Area include farming infrastructure and isolated buildings such as sheds.

There are no current flood maps available in the Conargo LEP which incorporates the Project Area. However, it should be noted that Hay and Maude have experienced several flood events since the 1880s associated with the Murrumbidgee flood plain, north of the Project Area (HSC, 2023).

6.11.1.4 WATER USE

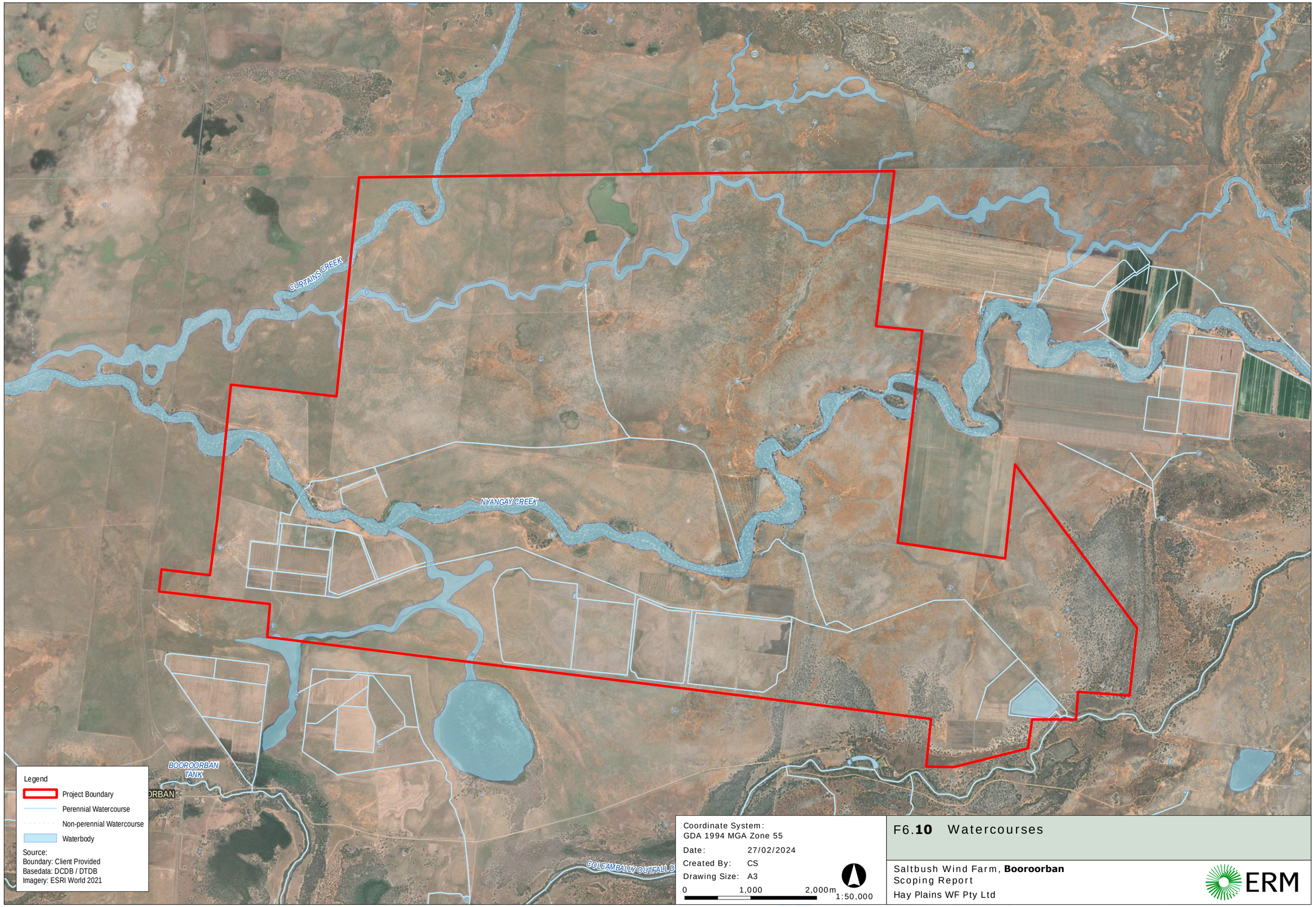
The Project will require water for construction purposes (e.g. concrete mixing and standard dust suppression measures) and can be sourced from groundwater bores or purchased from associated landowners, adjacent landowners or Edward River Council. Water use may be subject to licences under the *Water Management Act 2000*.

6.11.2 ASSESSMENT APPROACH

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

Flooding and Hydrology Assessment will consider:

- Existing flood behaviour of the local area;
- Existing flood behaviour through review of existing available data, developing computer models and defining flood levels, depths, velocities and flood hazard category for the Project Area for existing topographic conditions; and
- Post development flood behavior, including quantifying flood levels, depths, velocities and flood hazard category with the Project in place.
- A Water Impact Assessment will be undertaken which will include a review of standard construction environmental management plans to ensure that impacts during excavation, road works, transport of machinery, etc. are adequately mitigated through avoidance, minimisation, and management.
- The assessment will consider the potential impacts of the Project on hydrology and groundwater and will determine the need for further hydrological investigations.
- The assessment will also identify and quantify sources of water required during construction and operation of the Project and determine whether any water access licences under the *Water Management Act* 2000 will be required. All required licences and approvals will be obtained prior to the commencement of construction activities.
- The water impact assessment will be generally undertaken in accordance with the following guidelines and resources:
    - Managing Urban Stormwater; Soils & Construction (Landcom, 2004);
    - Guidelines for Controlled Activities on Waterfront Land (DPI Water, 2018);
    - Relevant Water Sharing Plans (DPI Water); and
    - Guidelines for Watercourse Crossings on Waterfront Land (DPI Water, 2012).



F6.**10** Watercourses

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6.12 LAND RESOURCES

6.12.1 EXISTING ENVIRONMENT

The land and soil capability (LSC) assessment scheme gives an indication of the land management practices that can be applied to a parcel of land without causing degradation to the land and soil at the Project Area and to the off-site environment (BCD, 2012).

A preliminary review of the Soil and Land Capability Mapping data for NSW (DPE, 2020d) suggests that the majority of the Project Area is within LSC *Class 5 – Severe limitations* and the Nyangay and Curtains Creek are associated with *Class 6- Very severe limitations*. The LSC Class 5 and 6 has severe to very severe limitations for high impact land management uses such as cropping. A map of soil classes in the vicinity of the Project Area is provided in **Figure 6-11.**

A search of the Australian Soil Classification (ASC) Soil Type Map of NSW (DCCEEW, 2017) reveals that the Project Area is predominantly Vertosols (VE) soils, which are also known as cracking clay soils. They have a clay texture throughout the profile, display strong cracking when dry, and shrink and swell significantly during wetting and drying phases. Vertosols generally have high soil fertility and have a large water-holding capacity.

A review of Biophysical Strategic Agricultural Land (BSAL) data (DCCEEW, 2013) showed that there are no areas of BSAL mapped within, or in close proximity to the Project Area.

6.12.2 ASSESSMENT APPROACH

The *Wind Energy Guideline for State Significant Wind Energy Development (December 2016)* does not provide guidance on agricultural impact assessments. However, DPHI has published guidance on levels of assessment required under the *Large-Scale Solar Energy Guideline.* This document can be used for guidance in the event that the Project SEARs require an agricultural and land impact assessment.

Whilst the guidelines apply to large scale solar developments, the guideline may also be relevant to large scale wind farm developments and the Project EIS proposes to follow the approach to soils and agricultural impact assessment as detailed in Appendix A of the guideline. Figure 4 of Appendix A of the *Large-Scale Solar Energy Guideline* (DPE, 2022a) provides a flow chart outlining various levels of assessment.

As the Project Area is on land zoned RU1, is not mapped BSAL, and is mapped as LSC Class 5 and 6 a Level 1 Basic Agricultural Impact Assessment is required which includes:

- Land and soil capability mapping, and site investigation results;
- Include consultation with neighbouring landholders to identify potential project impacts (if any) on immediately adjacent agricultural land;
- Describe project impacts (if any) on immediately adjacent land;
- Describe consultation undertaken; and

Consider measures to reduce impacts on neighbouring agricultural land.

Legend

Land and Soil Capability

- 4 - Moderate to severe limitations
- 5 - Severe limitations
- 6 - Very severe limitations
- Project Boundary
- Highway / Main Road
- Local Road
- Track-Vehicular

Source:
Boundary: Client Provided
Basedata: DCDB / DTDB
Imagery: ESRI World 2021

COBB HIGHWAY

BOOROORBAN-TCHELERY ROAD

BOOROORBAN

WARGAM ROAD

Coordinate System:
GDA 1994 MGA Zone 55

Date: 06/03/2024

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F6.1**1** Soils and Land Capability

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Preliminary Biodiversity Report
Hay Plains WF Pty Ltd

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6.13 AIR QUALITY

The Project is not expected to have significant impacts on air quality in the region. Impacts during construction will generally relate to dust generation from construction works, while impacts during operation are expected to be minimal. More broadly, the Project will also have a positive impact on air quality by contributing to the overall reduction of greenhouse gas emissions.

The EIS will consider the potential impacts to air quality and propose appropriate management and mitigation measures during the construction and operational phases of the Project. Air quality and dust management will generally be assessed in accordance with relevant guidelines and policies including:

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

6.14 WASTE MANAGEMENT

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

6.15 CUMULATIVE IMPACTS

The Cumulative Impact Assessment Guidelines for State Significant Projects (DPIE, 2022c). provides a framework for assessing and managing project-level cumulative impacts.

A cumulative impact assessment will be undertaken as a component on the EIS in accordance with the Cumulative Impact Assessment Guidelines for State Significant Projects (DPIE, 2022c).

TABLE 6-13 CUMULATIVE IMPACTS AND TIMEFRAMES

Project Phase	*Estimated Timeframe*	*Likely Scale of Impact*	*Duration of Impact*	*Potential Cumulative Impacts*
Assessment	2024	Minor	Temporary	Social – community health and wellbeing
Approval	2027	Minor	Temporary	Social – community health and wellbeing
Construction	2028	Moderate to Major	Temporary	Amenity – visual, noise Social – community health and wellbeing Transport and traffic
Operation	Mid-2030	Minor to Moderate	Ongoing during operations	Amenity – visual Social – community health and wellbeing
Decommissioning	2060-2070	Moderate	Temporary	Social – community health Amenity – air quality and noise Transport and traffic

7. CONCLUSION

The Project Area is considered suitable for the proposed wind farm due to the following reasons:

- It is located within the corridor of existing TransGrid transmission lines and the Project EnergyConnect corridor, which will allow for the renewable energy generated from the Project to be supplied to the region;
- It is located within the boundaries of the proposed South-West REZ, and the Project will contribute to the future development of the REZ;
- There are a number of other existing and proposed renewable energy projects located within the region and in close proximity to the Project Area;
- It is easily accessible via Cobb Highway, Booroorban;
- The Project is consistent with the *RU1 – Primary Production* zoning and will meet the following objective of the RU1 zone to encourage sustainable primary industry production;
- The Project is compatible with the existing land uses of the Site and its surrounding areas, as wind farms have a relatively small footprint, which would allow for existing grazing activities to continue;
- The Project is located within a remote and sparsely populated area with limited receptors in close proximity to the Project Area;
- The Project is located within an area of mapped high wind speeds; and
- The Project will contribute to diversifying the local economy and creating new employment opportunities.

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

- The scale and nature of the likely impacts of the Project and the sensitivity of the receiving environment;
- Whether the Project is likely to generate cumulative impacts with other relevant future projects in the area;
- The ability to avoid, minimise and/or offset the impacts of the Project, to the extent known at the scoping stage; and
- The complexity of the technical assessment of the Project.

Detailed assessments will be undertaken for environmental aspects that present a potential constraint to the development, or where detailed assessment is required. These assessments are listed in **Table 7-1**.

TABLE 7-1 PROPOSED ASSESSMENT

Level of Assessment	*Aspect*
Detailed (potential constraint)	• Amenity –Visual • Amenity – Noise, vibration • Biodiversity – Terrestrial flora and fauna • Heritage - Aboriginal • Access - Traffic and transport • Aviation – Aviation impact • Social – surroundings, livelihoods
Standard	• Heritage – Historic • Hazards and Risks – bushfire, environmental hazards, waste, EMI/EMF • Water - hydrology • Land – land capability

The EIS will be prepared in accordance with the SEARs to be issued by DPHI in response to this Scoping Report. All assessments (including specialist assessments) will be completed by taking into consideration consultation with stakeholders, industry best practice guidelines, and the experiences from other wind farm projects.

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APPENDIX A COMMUNITY AND STAKEHOLDER ENGAGEMENT STRATEGY

APPENDIX B SCOPING SUMMARY TABLE

APPENDIX C PRELIMINARY VISUAL IMPACT ASSESSMENT

APPENDIX D PRELIMINARY BIODIVERSITY ASSESSMENT

APPENDIX E SOCIAL IMPACT ASSESSMENT

APPENDIX F CUMULATIVE IMPACTS ASSESSMENT SCOPING SUMMARY

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Hong Kong
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Ireland
Italy
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Kazakhstan
Kenya
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Mexico
Mozambique
The Netherlands
New Zealand
Peru
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