Baldon WIND FARM

Scoping Report

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Case ID: PDA-22882685

Prepared by: Goldwind Australia Pty Ltd, and Lacour Energy Pty Ltd
On behalf of: Baldon Wind Farm

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Department of Planning and Environment	Application for the Secretary's Environmental Assessment Requirements

EXECUTIVE SUMMARY

Overview and Purpose

Goldwind Capital (Australia) Pty Ltd (*Goldwind*) and Lacour Energy Pty Ltd (*Lacour*), together known as the Proponent (*the Proponent*) are proposing to develop the Baldon Wind Farm (*the Project*) which will be located to the north of Moulamein in NSW. The Project could consist of up to approximately 162 wind turbine generators (*WTGs*) providing around 1,000 megawatts of power to the national electricity market (*NEM*). The Project will include all the associated infrastructure which is required to connect the Project to the NEM, provide access to construct, operate, maintain, and decommission the Project and allows for inclusion of a battery energy storage system (*BESS*).

This scoping report (*Report*) supports the Proponent's request to the Department of Planning and Environment (*DPE*) for the Secretary's environmental assessment requirements (*SEARs*) and explains the rationale for the Project, including potential related impacts, mitigation approaches and the methodology which will be used for preparing the environmental impact statement (*EIS*).

Project Location

The Project is in the Riverina-Murry region, with the majority located in the Murray River Local Government Area (*LGA*) and the northern part in the Hay Shire LGA (**Figure 1-1**). The Project area is approximately 40 km north to south and 15 km east to west, covering about 42,500 hectares and is comprised of a single rural property holding. The property is within the plains country and sits between the Murray River to the south and Murrumbidgee River to the north, mostly avoiding the higher value agricultural zones or the river floodplains. It is also within an area of low-density rural settlement and distant from the larger regional towns as listed below:

- Moulamein, approximately 15 km to the south of the Project
- Balranald, approximately 44 km to the west of the Project
- Hay, approximately 64 km to the northeast of the Project
- Deniliquin, approximately 100km to the southeast of the Project

The Sturt Highway and the existing Darlington Point-Balranald 220 kV transmission line pass through the central part of the proposed Project area. There is also a new transmission line proposed to be developed as part of '*Project EnergyConnect*'. This new transmission line is likely to follow a similar route to that of the existing line and may provide an alternative connection option for the Project.

Statutory Planning Context

The Project is considered a State significant development (*SSD*) under Clause 20, Schedule 1 of the State Environmental Planning Policy (Planning Systems) 2021 and Clause 2.36 of the State Environmental Policy (Transport and Infrastructure) 2021. These policies allow an SSD to be carried out by any person with consent on any land in a prescribed rural, industrial, or special use zone. Therefore, the Proponent is seeking consent for the Project under Division 4.7 of Part 4 of the Environmental Planning & Assessment Act 1979 (EP&A Act).

The Proponent will refer the Project to the Commonwealth Department of Agriculture, Water Environment (*DAWE*) to determine whether it will be a Controlled Action under the *Environment Protection Biodiversity Conservation Act 1999 (EPBC Act*).

Strategic Context and Justification

The Project is within the Riverina-Murry region and within the area currently proposed by the NSW Government for the NSW South-West Renewable Energy Zone (*REZ*), for which the extent is still to be confirmed (**Figure 5-2**).

NSW requires significant additional generation capacity to address end-of-life closure of existing thermal plant. The NSW state also has ambitious climate change targets to reduce $C0_2$ emissions. The NSW Government has a number of policies to support zero emission electricity generation such as the Baldon Wind Farm.

It is expected that development of the Project will provide economic stimulus and employment opportunities in the local area and broader region.

The proximity of the Project to the existing Darlington Point-Balranald 220 kV transmission line and the proposed *Project EnergyConnect* transmission line allow for low impact connection options with minimal additional transmission line construction. Additionally, avoidance of a need for additional transmission lines that may be at lower voltages can result in reduced electrical losses for the proposed development and efficiency of supply.

Preliminary Environment Assessment

This Report presents a preliminary assessment of the potential impacts of the Project. The EIS will focus on the following key topics which have been identified in this Report, as well as other matters which may be required by the SEARs:

- Biodiversity - Several sensitive flora and fauna species have been identified within specific ecological habitats on the Project site. These will be the subject of targeted ecological studies, together with any additional concerns which may be identified in the SEAR's report.
- Noise - emissions during construction and operation. Noise impacts will primarily be mitigated by significant setbacks to sensitive receivers
- Landscape and Visual Impact – A preliminary assessment is appended to this Report and further assessment on potentially impacted locations will be provided in the EIS. In the flat terrain and with the height of proposed structures, there will be an extensive viewfield that will be considered by a landscape architect to identify any specific impacts warranting re-design or other mitigation.
- Traffic and Transport – Transport of over-dimensional components to site will be a key assessment topic. There are several potential route options and each of these will be reviewed to determine the most suitable and any improvements needed to facilitate the transport,
- Cultural Heritage (Aboriginal and Historic) - detailed assessments will be undertaken as part of the EIS preparation and where heritage values are identified, specialist advice will be sought on mitigation and management of the potential impacts.
- Community / Socio-Economic – the EIS will provide detailed review of ongoing community consultation and socio-economic circumstances affected by the development and how these can be best managed to avoid adverse impacts and equitably benefit the local community
- Environmental (Water, Soils, Air Quality) - the EIS will assess the impacts of the various parts of the development on the site's natural features and identify practical mitigation measures to minimise impacts
- Hazards (Bushfire) – while the fuel quantities are low, the hot dry summer conditions warrant attention to management of bushfire risk, to ensure that the development does not present a source of bushfire and that proposed infrastructure will not be impacted by bushfire. The EIS will address these matters in consultation with NSW Rural Fire Services (RFS).

The Project design provided in this Report will be refined during preparation of the EIS as more information becomes available in respect of project design and constraints. These changes may include adjustments to the Project boundary, wind farm layout, turbine model, associated infrastructure, construction and operations processes, and other measures as the proponent seeks to optimise the Project and minimise potential impacts on the environment and/or community.

Once all the studies have been completed as required by the SEARs, a final EIS will be prepared and submitted to DPE for review, exhibition and subsequently review of submissions and analysis of matters relevant to determination of the application.

Community and Stakeholder Engagement

A stakeholder and community engagement plan (*SCEP*) has been prepared to guide the process of engaging meaningfully with the local community. The Proponent has also considered the social impact assessment (*SIA*) guidelines and completed an SIA worksheet (**Appendix 1**) to help guide the community engagement process.

The Proponent is committed to best-practice engagement with surrounding communities which is appropriate to the stage of the Project. Early engagement carried out during the scoping stage focused on identifying key stakeholders and building relationships with the host landowner, near neighbours and communities closest to the Project area. A variety of consultation methods have been used such as meetings, newsletters and phone calls to assist with community engagement, as outlined in the relevant section of this document.

Feedback received during early consultation covered a range of issues, including jobs, economic benefits, community benefits package, local accommodation (constraints and opportunities), potential visual and noise impacts and the proposed *Project EnergyConnect* transmission upgrades.

The community and stakeholders can access information about the Project through:

- This Report
- The Project website: www.baldonwindfarm.com
- Email: info@baldonwindfarm.com
- Feedback: www.baldonwindfarm.com/community/feedback-form/
- Telephone: 1 800 050 209
- Direct engagement: telephone and face-to-face meetings
- Council briefings: Face-to-face meetings with department heads and elected members
- Community Drop-in Information Sessions – proposed as project design develops and impacts can be better communicated
- Community Consultative Committee (to be established)

Community and stakeholder engagement will continue following issue of the SEARs and during conduct of site investigations and the preparation of the EIS. The community engagement strategy will continue to ensure that all possible stakeholders are consulted about the project and any feedback is considered and incorporated into the Project design.

Conclusion

It is anticipated that this Report provides the relevant detail necessary for the NSW Department of Planning and Environment (*DPE*) to understand the scope of the proposal, the potential environmental issues relevant to the proposal and key matters to be further assessed in the EIS.

The Proponent is aware of a range of other renewable energy projects being considered in the area and also the transmission infrastructure for *Project EnergyConnect*. The proponent expects that DPE will be well informed of these other projects and their potential environmental issues for Southwest NSW and based on that knowledge and this Report, will be well placed to prepare, and issue the SEARs for the Project.

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1.0 INTRODUCTION

1.1 Project Overview

Goldwind Capital (Australia) Pty Ltd (*Goldwind*) and Lacour Energy Pty Ltd (*Lacour*), together known as the proponent (*the Proponent*) are proposing to develop the Baldon Wind Farm (*the Project*) which will be located to the north of Moulamein in NSW. The Project will consist of up to approximately 162 wind turbine generators (*WTGs*) providing about 1,000 megawatts of power to the national electricity market (*NEM*). The Project will include all the associated infrastructure which would be required to connect the Project to the NEM, provide access to construct, operate, maintain, and decommission the Project. The proposal will allow for inclusion of a battery energy storage system (*BESS*) to optimise use of the available wind energy resource by storing the energy generated and aligning its supply to the NEM demand periods.

It is estimated that the Project would have an operational lifetime of approximately 30 years, with the potential for an additional 30-year operational period, or more, where the project is re-energised or more occasions in the future, a scenario that appears feasible based on expectations of future renewable energy requirements.

The Project sits within the Murray River and Hay Shire Local Government Areas (*LGAs*) and is entirely within the NSW South-West Renewable Energy Zone (*REZ*). The Project is located as shown in (**Figure 1-1**) and approximately:

- 15 km north of Moulamein,
- 44 km east of Balranald, and
- 64 km southwest of Hay.

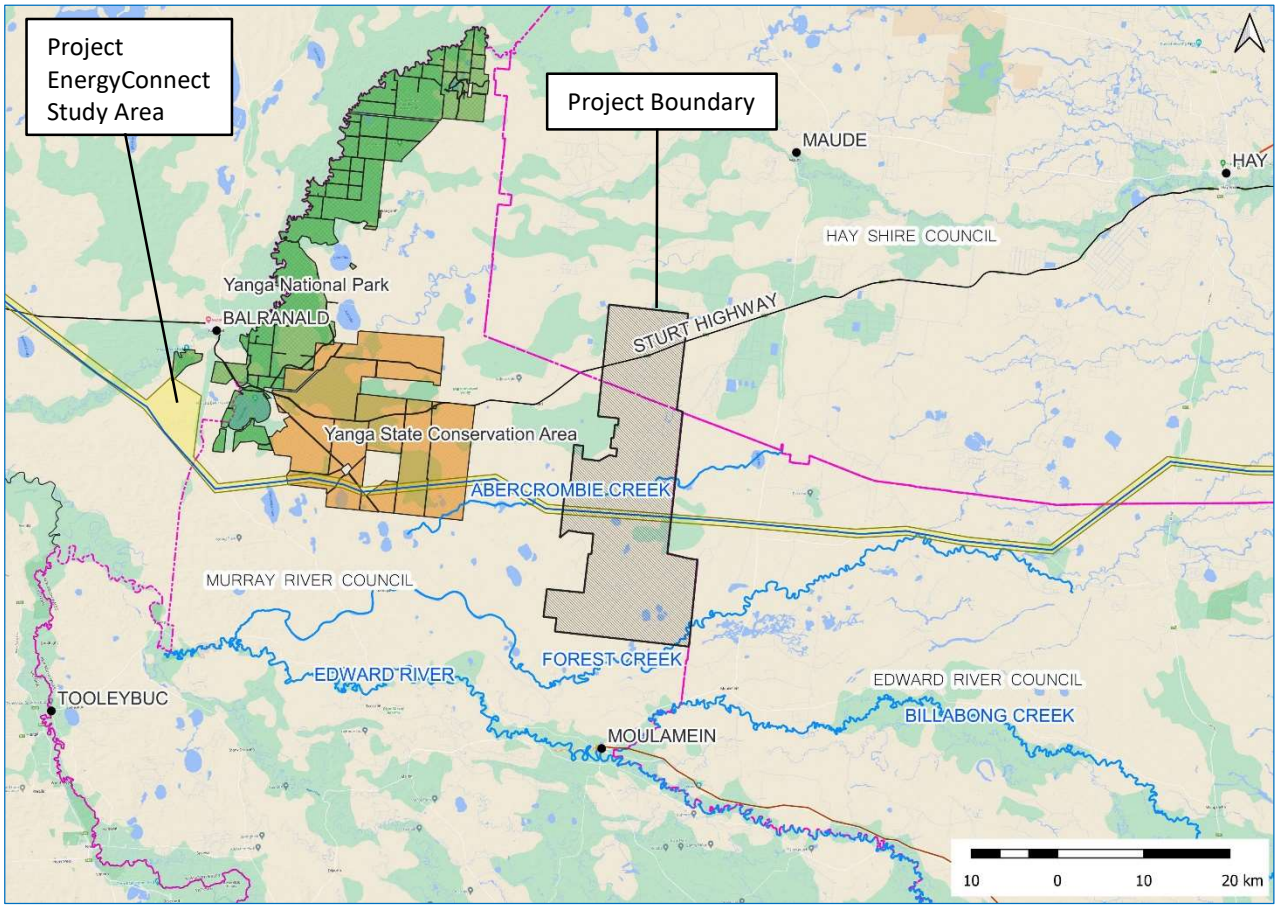

Figure 1-1: Project location with regional context

The Project boundary is approximately 40 km north to south and 15 km east to west (*Project Boundary*). It is anticipated that the energy produced by the Project would be delivered to the NEM via either of:

- the existing 220kV Darlington Point-Balranald transmission line which runs through the central part of the Project area (**Figure 1-2**), or
- the proposed *Project EnergyConnect* transmission line (potentially at 330kV) which is expected to be in close proximity to the existing 220kV Darlington Point-Balranald line, or
- via other infrastructure developed in conjunction with the South-West REZ.

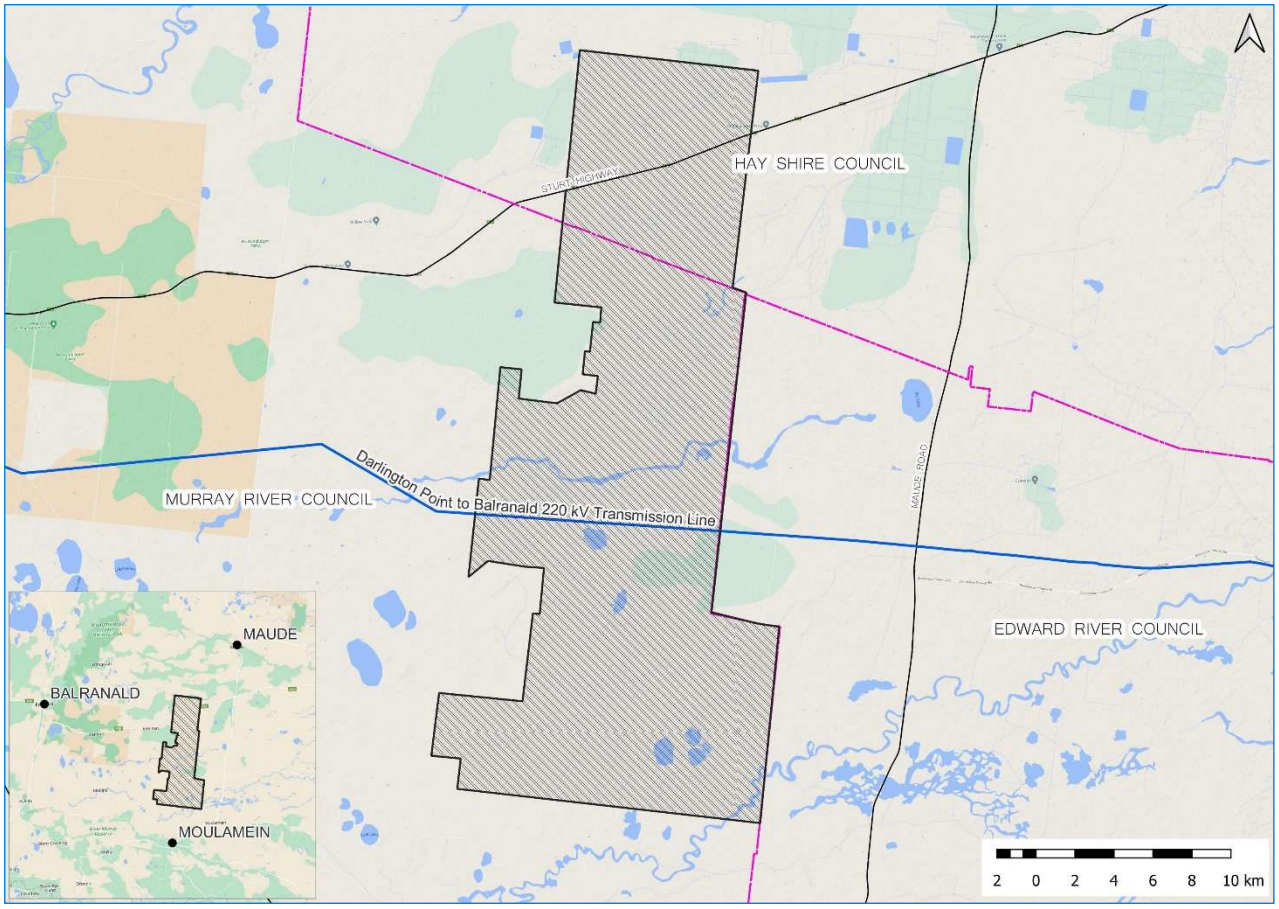

Figure 1-2: Locality plan of the Project Boundary

A preliminary Layout has been developed (**Figure 1-3**), which considers the information existing at the time of this preliminary assessment.

The preliminary layout shows the potential location of 162 wind turbine sites within the Project boundary and associated infrastructure including access tracks, substation, and a temporary accommodation camp. Underground cables which will connect each turbine to the substation are not shown however, any design will generally aim to minimise the length of cabling, and where practicable, cable routes would align with access tracks. The flat, low-gradient terrain will reduce the need for cut-and-fill which is often necessary during construction in hilly terrain and will enable the Project to minimize ground disturbance impacts.

The proposed location for the central substation to connect the Project to the NEM is shown adjacent to the existing Darlington Point-Balranald 220 kV powerline. The point of connection to the NEM is currently proposed to be within the Project Boundary. An alternative connection option would be to the proposed *Project EnergyConnect* transmission line which is likely to run near the existing line and provide another connection option within the Project Boundary. Finally, additional connection options may become available if new infrastructure is developed in response to the Southwest REZ declaration.

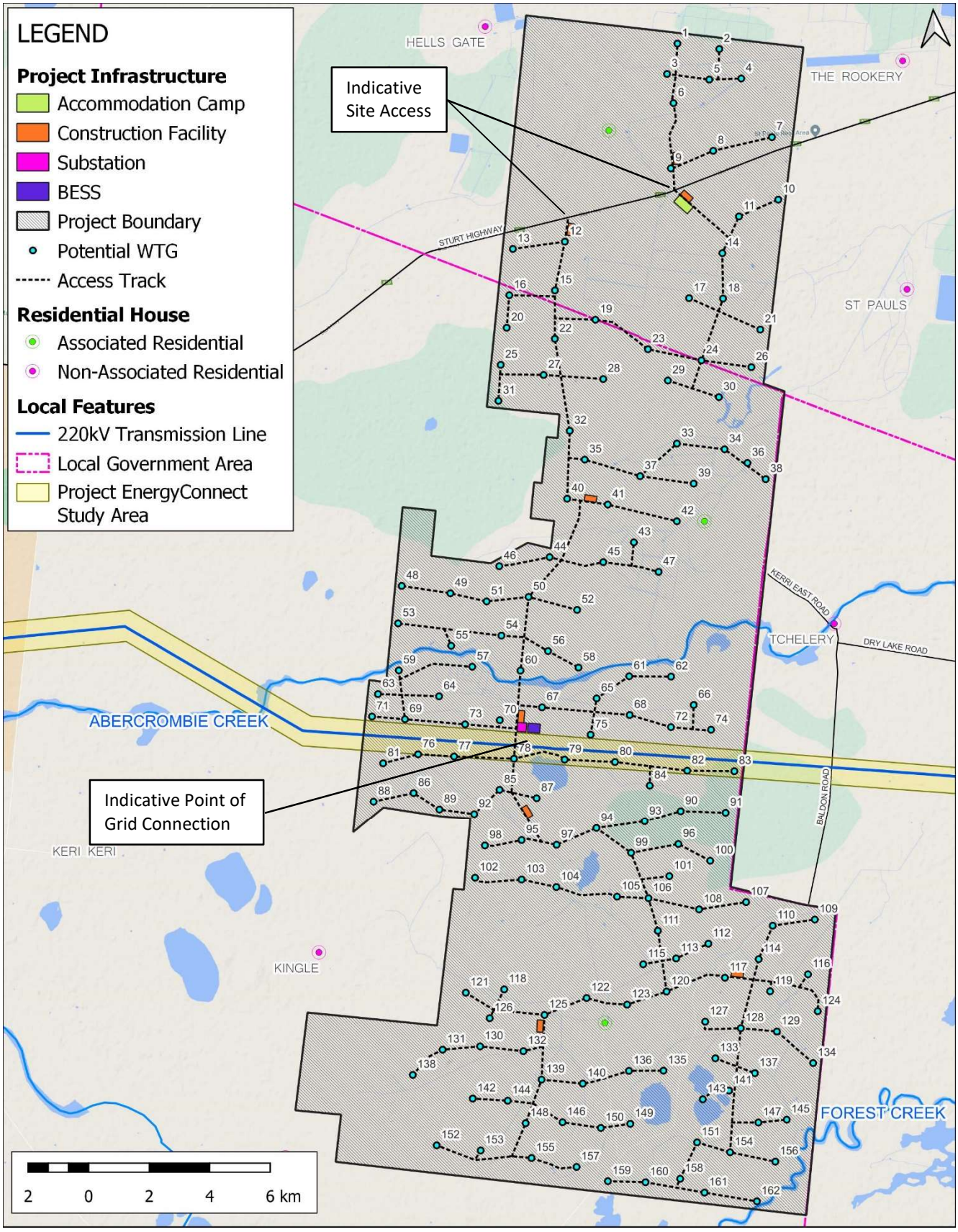

Figure 1-3: Preliminary Layout

1.2 The Proponent

The Project is being developed by Goldwind Capital (Australia) Pty Ltd (*Goldwind*) and Lacour Energy Pty Ltd (*Lacour*), together known as the Proponent (*the Proponent*).

1.2.1 Goldwind Capital (Australia) Pty Ltd

Goldwind was established in Australia in 2009 and has main offices in Sydney Melbourne, as well as several local site offices which together employ more than 180 people across Australia. Goldwind Australia is involved in the development of wind farm projects around the country and the supply of wind turbines to the Australian market. Goldwind is a subsidiary of Xinjiang Goldwind Science & Technology Co Ltd (*Goldwind International*) which is a major manufacturer of wind turbine technology and energy solutions.

Goldwind International develops, manufactures, and markets wind turbine generators and associated parts. It also constructs and operates wind energy facilities around the world. Goldwind International also invests in wind farms and wind turbine technology throughout the Asia Pacific region, Europe and the Americas and has supplied over 31,000 wind turbines globally over the past 21 years which now exceeds 50 GW of installed capacity.

Since establishment of activities in Australia, from 2009, Goldwind has delivered several significant renewable energy projects (>1GW) across Australia, some in conjunction with other development partners.

Table 1-1: Renewable energy projects where Goldwind has a key development role

Project	State	Capacity (MW)	Phase of development
Agnew Hybrid Renewable Microgrid	WA	56	Operating
Banana Range Wind Farm	QLD	280	Proposed
Biala Wind Farm	NSW	108.5	Commissioning
Cattle Hill Wind Farm	TAS	144	Operating
Clarke Creek Wind and Solar Farm	QLD	1,200	Early Works construction
Esperance Hybrid Project	WA	9	Commissioning
Gullen Range Solar Farm	NSW	10	Operating
Gullen Range Wind Farm	NSW	165.5	Operating
Kondinin Wind and Solar Farm	WA	200	Proposed
Moorabool Wind Farm (North & South)	VIC	312	Commissioning
Mortons Lane Wind Farm	VIC	19.5	Operating
Stockyard Hill Wind Farm	VIC	530	Operating
White Rock Solar Farm	NSW	20	Operating
White Rock Wind Farm	NSW	175	Operating

1.2.2 Lacour Energy Pty Ltd

Lacour specialises in the development of wind and solar renewable energy projects, managing the process from inception to construction. The Lacour Energy team has projects around Australia bringing new renewable energy projects into the electricity market utilising key personnel with over 20 years' experience in the industry. Over the past six years Lacour Energy and Goldwind Australia have collaborated on several successful projects including the following:

Table 1-2: Lacour renewable energy projects

Project	State	Capacity (MW)
Banana Range Wind Farm	QLD	280
Clarke Creek Wind and Solar Farm	QLD	1,200
Gullen Range Solar Farm	NSW	10
Kondinin Wind and Solar Farm	WA	200
White Rock Solar Farm	NSW	20

1.2.3 Proponent Details

Contact and business information for the Proponent organisations is listed in **Table 1-3**:

Table 1-3: Proponent details

Goldwind Capital (Australia) Pty Ltd	
ABN	34 142 403 950
Postal Address	Level 25, 100 Barangaroo Avenue, Barangaroo Sydney NSW 2000
Lacour Energy Pty Ltd	
ACN	612 229 875
Postal Address	Level 7, 140 St Georges Terrace,

1.3 Purpose of this document

The Proponent is seeking Development Consent for the Project as an SSD under Division 4.7 of Part 4 of the *Environmental Planning & Assessment Act 1979* (EP&A Act).

This Report has been prepared to support a request to the DPE for the issue of SEARs for the EIS.

This Report has been prepared in consideration of the 'NSW Wind Energy Framework' which comprises:

- Wind Energy Guideline (Wind Guideline) (DPIE, 2016),
- Wind Energy: Visual Assessment Bulletin (Visual Bulletin) (DPIE, 2016),
- Wind Energy: Noise Assessment Bulletin (Noise Bulletin) (DPIE, 2016),
- Standard SEARs; and
- Wind Energy Framework Q&As.

This Report has also been prepared with consideration of:

- Section 4.2 (SEARs and Preliminary Environmental Assessment (PEA)) of the Wind Energy Guideline,
- the DPIE's 2021 Social Impact Assessment (SIA) Guideline, Technical Supplement and SIA Scoping Worksheet; and
- State Significant Development Guidelines – Preparing a scoping report, "*Appendix A*" of the *State Significant Development Guidelines (July 2021)* which came into effect on the 1 October 2021.

An SIA Worksheet for the project is included with this Report (**Appendix 1**).

1.4 Project Timeframe

The following is an outline of the indicative development, construction, and operation milestones for the Project.

Table 1-4: Indicative Project Timetable

Activity	Indicative Timeframe
Scoping report submitted to DPIE	March 2022
SEARs issued by DPIE	April/May2022
EPBC referral	Q3 2022
Environmental Impact Assessment (EIA) Lodged	Q2 2023
Development consent granted	Q4 2023
Financial close	Q2 2024
Start of construction	Q4 2024
Operations commence	Q4 2026
Decommissioning / Repowering	2056

2.0 SITE LOCATION AND REGIONAL INFORMATION

2.1 The Project Site

The Project area covers approximately 42,500 hectares and is comprised of a single rural property holding made up of multiple lots as listed in **Table 2-1**. The property is within the plains country and sits between the Murray River to the south and Murrumbidgee River to the north, mostly avoiding the higher value agricultural zones or the river floodplains.

The allotments that comprise the Project area are outlined in **Table 2-1** and **Figure 2-1** and make up one large property with one landowner. The Project area also includes crown land associated with paper roads, which the Proponent has not listed below and will deal with during the EIS.

Table 2-1: Project Area: List of Lot and Deposited Plan (DP) Numbers (not including Crown Land)

Lots	DP
1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 14, 15	114086
12, 14	114102
1	115951
2, 3	134029
121, 122, 123, 124	134030
130, 131, 132, 133, 134, 135, 136, 137, 138	134031
125, 126	134032
1	182223
1, 3, 4	235869
1, 2, 3	235870
1, 2	241013
1, 2	527290
1, 2	527291
1, 2	527292
1	664937
1	665905
1	665906
1	665907
2, 5, 10, 11, 12, 13, 14, 15, 16, 17, 18, 50, 51, 52, 53, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87	751175
1, 2, 3, 4, 5, 6, 9, 10, 12, 13, 14, 18, 19	751190
4, 5, 6, 7	751225
13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 48, 49, 50, 51, 52, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109	756506
44, 45, 46, 47, 72, 73, 74	756549
19, 20, 21, 22, 23, 24	756555
19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 38, 39, 40, 41, 42, 43, 48, 49,	756573
27, 28, 29,	756595
1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 25, 26, 27, 28, 29, 30, 30, 31, 32, 33, 34, 35, 36, 36, 37,	756596
1, 2, 12, 18, 19, 20, 22, 23, 24, 25, 26, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 65, 66, 68, 69, 70, 71, 72, 73, 88, 89, 90	756601

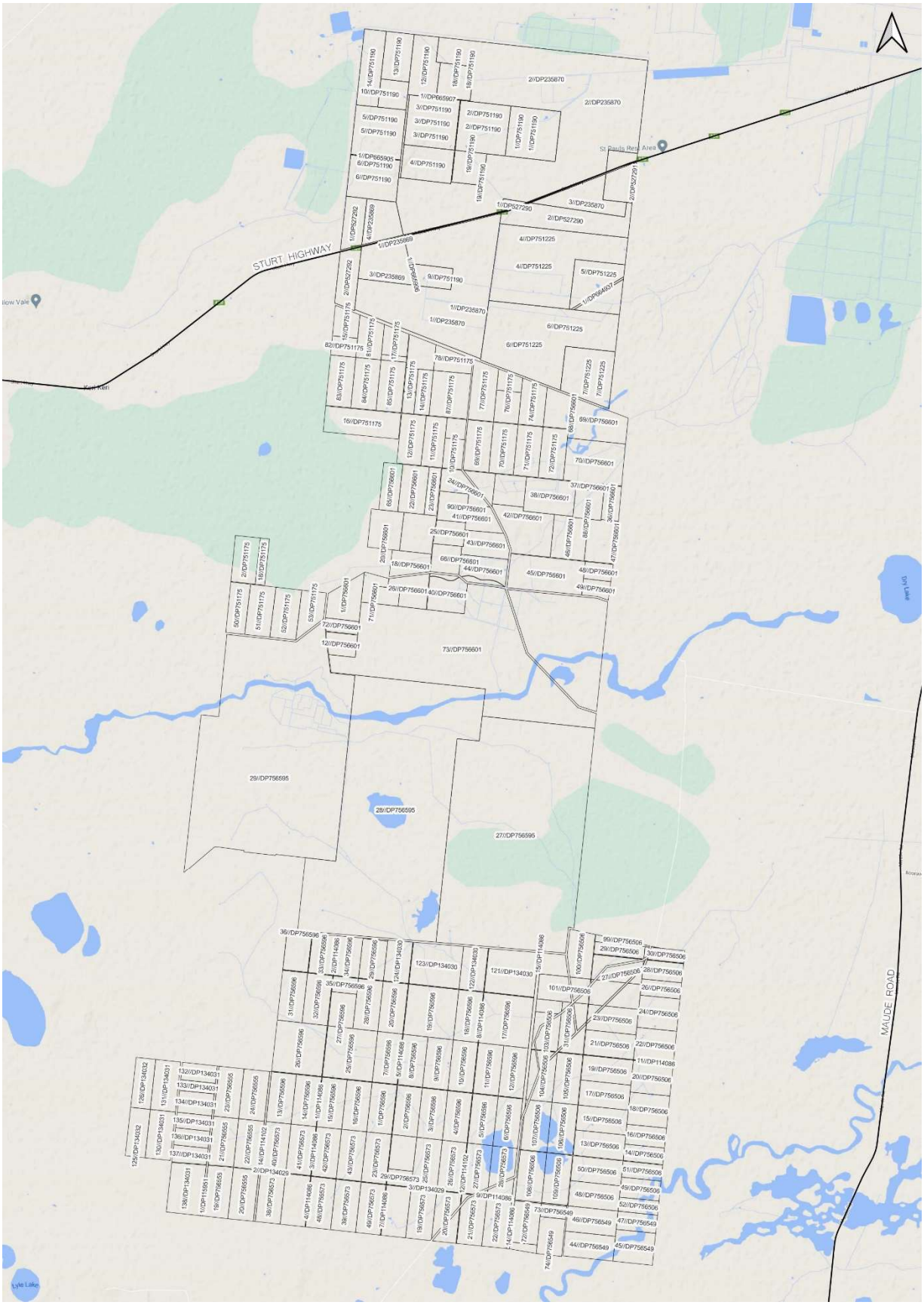

Figure 2-1: Project Area: Map of Lots and DP numbers

2.2 Regional Context

The Project is in Southwest NSW, within the Murray River and Hay Shire Council LGAs and immediately to the west of the Edward River LGA (**Figure 1-1**).

The Project is located on rural land which is primarily used for sheep grazing. The current vegetation is low and sparse Saltbush, with some limited agriculture uses outside pasturing.

The closest community is in the town of Moulamein which is approximately 15 km south of the Project (**Figure 1-1**). Based on the 2016 Census Data, Moulamein's population is approximately 484 with a median age of 50 years, who reside in about 311 dwellings (**Table 2-2**)

Table 2-2: Nearby Communities and Towns

Town	Distance from Project Boundary	Population (2016)	Facilities / Attractions.
Moulamein	15 km south	484	Regional town with some services (Post office, school, bowling club, council business centre, library etc).
Maude	23 km northeast	82	General store, hotel, caravan park and post office.
Balranald	44 km west	1,343	Regional centre with services (district hospital, school, Service NSW Agency etc)
Kyalite	44 km east	82	Pub & general store, Caravan Park
Hay	64 km east	2,406	Regional centre with services (hospital, public school, TAFE, etc)
Deniliquin	100 km southeast	7,862	Regional centre with services (hospital, public school, TAFE, etc)

2.2.1 Bioregional Context

The Project is located within the Riverina biogeographic region (*RIV*) and within the Murrumbidgee Sub-Region (RIV02, IBRA7). The Riverina bioregion is in southwest NSW, extending across the State border into central-north Victoria. It extends from Ivanhoe in the Murray Darling Depression Bioregion south to Bendigo, and from Narrandera in the east to Balranald in the west.

The Murray River to the south of the Project, the Murrumbidgee River to the north and the various tributaries within the locality of the Project, flow west from the Highlands in the east across the Riverina plain and ultimately draining to South Australia by the Murray-Darling System.

The climate is dry and semi-arid with hot summers and cool winters with marginally more rain falling during winter months than in warmer months. Given different evaporation regimes over the year, it is anticipated this will result in drier and dusty conditions over summer and wetter conditions in winter.

Vegetation ranges from river red gums along river channels to saltbush on the plains. There are several threatened species of both plant and animal species in this bioregion.

The Project is within both the Murray and Riverina Local Land Services (*LLS*) regions.

2.2.2 Key Landscape Features

The Project site is comprised of flat agricultural land, with minimal elevation change. The property is primarily used for grazing sheep, and other supporting agricultural practises (**Figure 2-2**). The site is approximately 70m AHD with less than 1% slope.

Figure 2-2: Project area landscape (Photo taken near the Sturt HWY, facing south across the Project area)

There are no National Parks or Conservation Areas within a 30 km radius of the Project. The following potentially sensitive areas exist in the wider region (**Figure 2-3**):

- Yanga National Park (50 km west)
- Yanga State Conservation Area (37 km west)
- Yanga Nature Reserve (37 km west)
- Kalyarr National Park (35 km southwest)
- Murrumbidgee Valley National Park (50 km northwest)

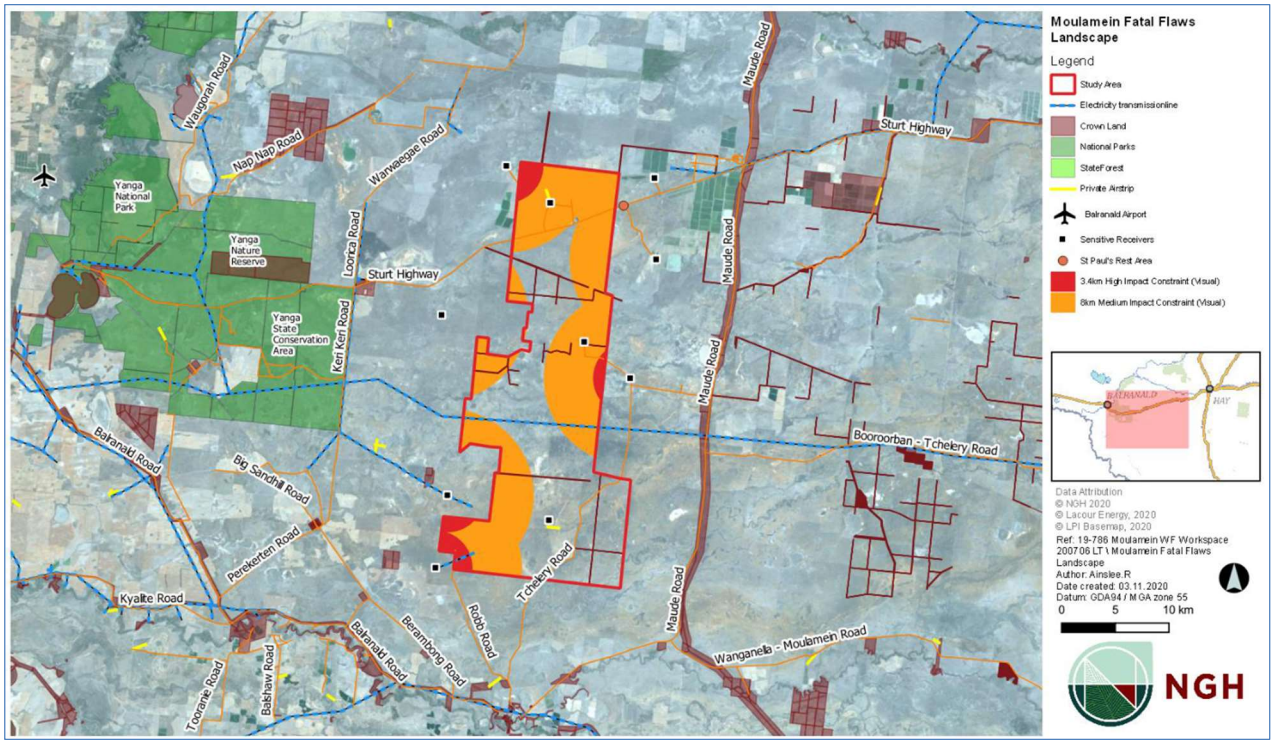

Figure 2-3: Sensitive Landscape Features

2.2.3 Hydrology

Initial assessments do not indicate that the land is flood prone. Land immediately adjacent to the northern boundary of the project area is identified as forming part of the Lowbidgee floodplain (Uara Creek), which is subject to periodic inundation. Plant community types (*PCT*) 17 and 24 which are mapped in the study area are linked to low lying areas

subject to flooding events on an intermittent basis. These flooding events have potential to create unstable, waterlogged soil (landscape features often referred to as Gilgai).

The Abercrombie Creek (Strahler level 4) passes through the study area as shown in (**Figure 2-4**). Gunyah Swamp is located within the southern portion of the study area. Similarly, to the floodplain located adjacent to the northern boundary, it is assessed as having low potential for a groundwater dependent ecosystem (Bureau of Meteorology, 2020).

Much of the study area is located within the Lower Renmark Group aquifer, with the very northern portion overlapping into the Murray Trench aquifer.

Several groundwater boreholes are present within the Project area (**Figure 2-4**) which are used for; irrigation (1), water table monitoring (2) and for stock and domestic use (9).

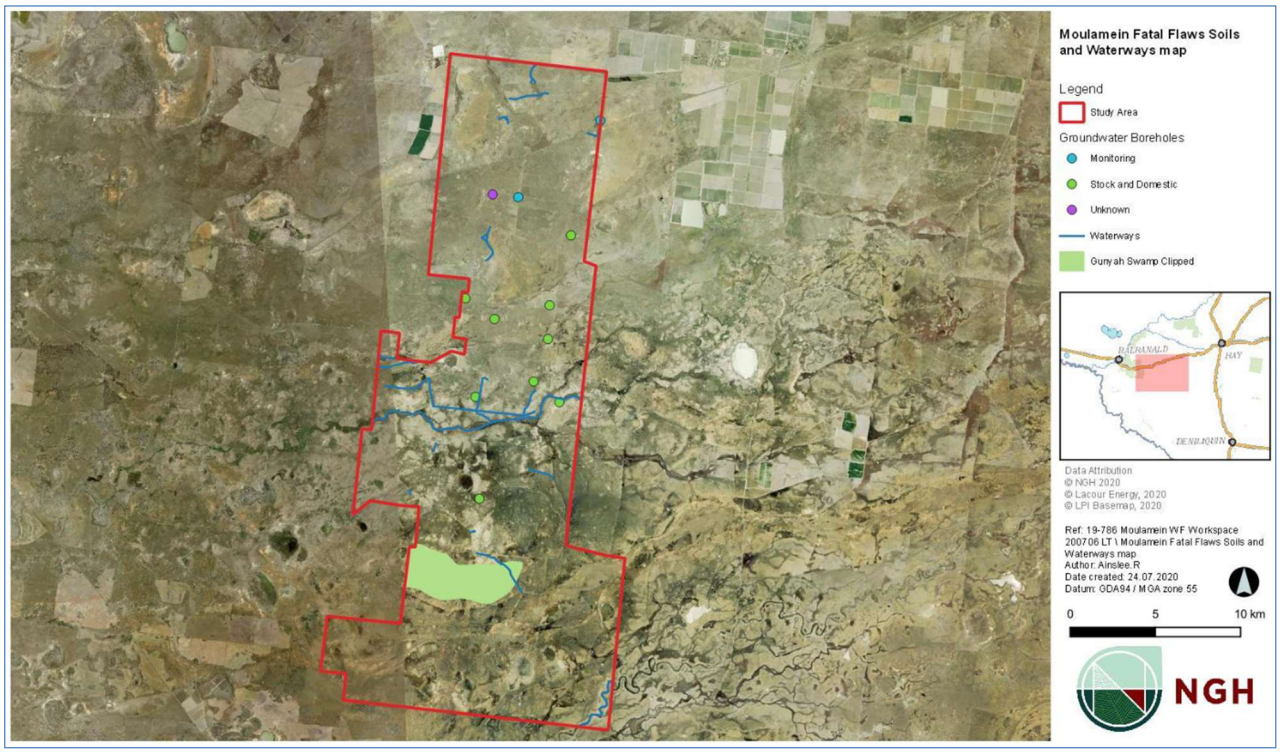

Figure 2-4: Water bodies and groundwater bores on the Project area

2.2.4 Soils and Geomorphology

The study area sits within the Shepparton Formation (DPIE, 2020). Much of the site is classified as 'unconsolidated to poorly consolidated, mottled, variegated clay, silty clay with lenses of polymictic, coarse to fine sand and gravel; partly modified by pedogenesis, includes intercalated red-brown palaeosols' (DPIE, 2020).

Soil profiles from the local area (eSPADE v.21) have shown that erosion/land degradation at the site is moderate, with minor to severe wind erosion and minor scald erosion. No salting was evident in any of the soil profiles. Most profiles identified the site as being well drained with moderate runoff.

Current, Sharing and Enabling Environmental Data (*SEED*), mapping shows the Project area primarily comprised of Land and Soil Capability Class 5 soil with smaller areas of Class 4 occurring through the site, and Class 6 soil located alongside watercourses.

No Biophysical Strategic Agricultural Land (BSAL) occurs within the study area.

2.2.5 Transportation Infrastructure

The main transport route for the Project is the Sturt Highway which runs generally east to west through the northern part of the project, with several minor roads leading from it (e.g., Maude Road, Baldon Road). The highway is used for intra-regional transportation consisting of agricultural trucks, freight trucks and local farming traffic as well as low levels of tourist traffic, between the towns of Hay and Balranald. The highway links Adelaide with the Hume Highway 20km past Wagga Wagga.

The closest airports to the Project are located at Swan Hill (50 km), Balranald (55 km), Deniliquin (100 km) and Griffith (180 km). The Project site has two disused private airstrips and there are other private airstrips in the surrounding region.

2.2.6 Electrical Infrastructure

Electrical infrastructure consists of the Darlington Point-Balranald 220kV transmission line which runs east-west through the centre of the Project and several 11 kV SWER (single line earth return) lines to residential properties and farms.

The route of the proposed *Project EnergyConnect* 330 kV inter-connector transmission network upgrade (**Figure 2-5**) is expected to run parallel to the existing 220 kV Darlington Point-Balranald powerline which runs through the middle of the Project area. This network upgrade is designed to improve the interconnection between the South Australia and New South Wales networks. It will add additional transmission network capacity to support the development of renewable energy projects within the region.

Figure 2-5: Overview of the proposed Project EnergyConnect route

2.2.7 Other Renewable Energy Projects

The Proponent is aware of several existing and proposed renewable energy projects in the region, these are listed in **Table 2-3**. The concentration of projects within this region are related to the proposed REZ and EnergyConnect.

Table 2-3: Nearby Renewable Energy Projects

Project	Owner	Type	Proximity	Status
Limondale Solar Farm	RWE	Solar	60km West	Operational
Sunraysia Solar Farm	Maoneng Group	Solar	60km West	Operational
Keri Keri Renewable Energy Project	Acciona Australia	Wind	Adjacent to western boundary of the Project	Proposed

Keri Keri Solar Farm	Acciona Australia	Solar	Adjacent to western boundary of the Project	Proposed
Burrawong Wind Farm	Windlab	Wind	60km West	Proposed
Dinawan Energy Hub	Spark Renewables	Wind/Solar/BESS	150km East	Proposed
Project EnergyConnect	Transgrid	Transmission Line	Traverses through the middle of the Project	Partially Approved

2.3 Local Context

The Project site is located on land classified as RU1 Primary Production in both the Murray River and Wakool LEPs (**Figure 2-6**). The site is characterized by flat topography approximately 70m AHD with less than 1% slope.

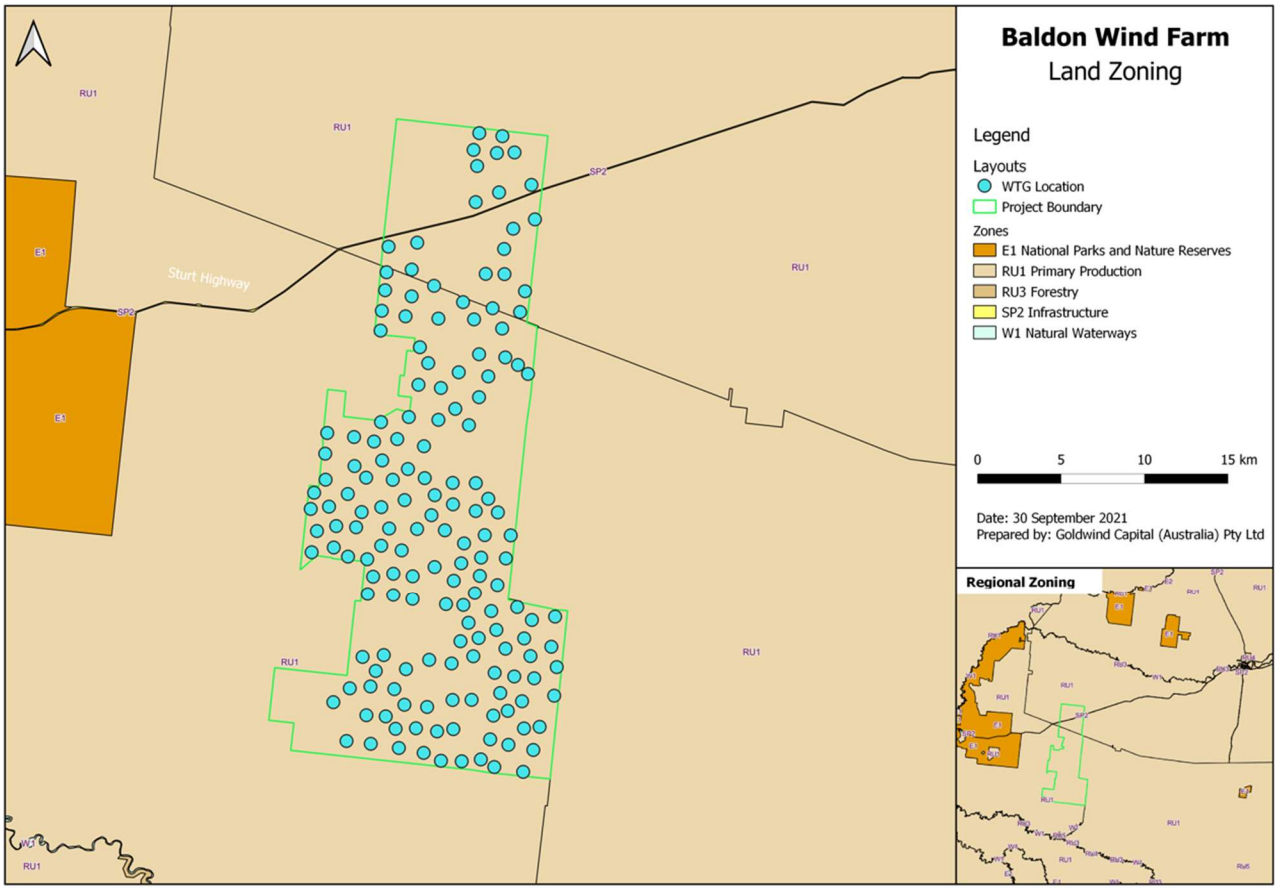

Figure 2-6: Land Zoning

The land within the Project boundary is predominantly freehold with a few Government roads and waterways which belong to the Crown. The main access to the Project is via the Sturt Highway in the north of the project area and there are three named, unsealed council roads which traverse the Project site (Baldon Road/Dry Lake Road and Keri East Road) (**Figure 7-6**).

There are a total of 14 residential dwellings within 10 km of a proposed WTG location. Three of these dwellings are owned by the Projects sole landowner which are within the Project boundary. The remaining 11 residential dwellings or homesteads belong to neighbouring properties. All these dwellings have been considered during the design of the initial layout. Consultation with the owners (or their representatives) of the neighbouring homesteads has already begun and will continue throughout the development of the Project, the EIS studies and in preparing the final Project design.

3.0 DESCRIPTION OF THE PROJECT

3.1 Project Overview

The Project involves the development, construction, operation, maintenance and decommissioning of a wind energy facility (*WEF*) and associated infrastructure with the scope allowing for a BESS. The BESS is under consideration to optimise integration of the Project into the NEM, and to adapt generation and power supply regimes to the standards required by TransGrid, AEMO and its customers.

The initial design of the Project indicates that up to approximately 162 wind turbines may be located within the Project boundary. The model and MW capacity of each turbine to be is yet to be confirmed, noting that wind turbine technology has evolved rapidly, and turbines have increased in scale to provide improved efficiencies, greater output, and lower cost. The turbines currently available and under consideration are in the range of 4 to 6.5MW in output with blade tip heights up to 300 m.

3.2 Construction phases

The Project would be subject to the following phases:

- Pre-construction design, contracting and completion of compliance requirements
- Civil balance of plant works including construction tracks, hardstands, turbine foundations, substations, and storage compounds
- Electrical balance of plant works including underground cabling, overhead powerlines, substations, and grid connection structures.
- Delivery of components to site; notably over-dimensional transport for wind turbine blades, tower sections, nacelle, rotor, the large substation transformer(s) and energy storage items.
- Wind turbine installation using large cranes
- Commissioning of the wind farm and BESS facilities including network acceptance testing
- Operations and maintenance of wind farm and energy storage system (approximately 30 years)
- Decommissioning or retrofitting of wind farm equipment and BESS modules

3.3 Project Scale

The project scale will be subject to the available capacity for the grid connection, which could involve one or more of the following arrangements:

- Connection to the existing Darlington Point-Balranald 220 kV transmission line that crosses through the Project area.
- Connection to the proposed *Project EnergyConnect* transmission upgrade which is proposed to pass through the Project area and may provide for up to 800 MW of additional transmission network capacity.
- A combination of connection to the existing 220 kV line and the proposed *Project EnergyConnect* transmission upgrade.
- Potential future transmission upgrades to support the NSW Southwest Renewable Energy Zone (REZ)

Given the current understanding of the existing transmission network and the planned infrastructure upgrades, the project can be optimized to fill any available network capacity up to approximately 1,000 MW.

3.4 Project Components

The components and location of the infrastructure will vary subject to the scale of the project, the site characteristics, and arrangements to minimise environmental and community impacts. It is likely that approval of any Development Application will precede construction and operation of the project by several years. Therefore, it is important to maintain the flexibility to vary the design and layout of the Project to accommodate changes in technology. On that basis, it is common at the scoping report stage to outline the range of specifications that may apply for the Project and

to assess potential impacts with regards to the possible variations. The range specified might include the upper dimension (or greatest impact) that could be anticipated to apply when the project comes to fruition. An indicative layout plan will be provided in the EIS using the best information available at that time.

The following sections outline the key components of the Project and indicates aspects that will be further defined within the EIS.

3.4.1 Wind Turbine Generators

The Project will use horizontal-axis wind turbines as shown in (**Figure 3-2**). Each wind turbine is made up of the following components:

- A concrete foundation
- A tower, generally made of multiple steel sections bolted together
- A nacelle at the top of the tower which houses the generator and to which the rotor is attached
- Components within the nacelle such as the yaw system and cooling system
- A generator with a specific name-plate MW capacity.
- A rotor hub, to which turbine blades are attached
- Wind turbine blades, usually three with pitch system to allow adjustments to the wind turbine operation.
- Electrical and communications cabling (generally underground) between the turbine, substation.

The rotor hub has motors that allow the pitch of each of the blades to be adjusted to accommodate different wind conditions and for start-up and shut down of the wind turbine. The rotor is connected to the generator that is housed within the nacelle. Individual wind turbines can be controlled and operated independently.

The Project is expected to incorporate Goldwind's Permanent Magnet Direct Drive (*PMDD*) wind turbine technology where the generator is a large 'donut shaped' unit which is independently fitted to the nacelle prior to the rotor being attached. The rotor is angled back slightly at the top so that the blades at the lower part of the rotor swept area pass the tower with a wider clearance between the tower and the passing blade.

Figure 3-1: Wind turbine nacelle cut-away

The nacelle (**Figure 3-1**) is located on top of the tower and sits on a ring that can turn (yaw) to enable the turbine to be turned into the wind as required for its operation. Access to the nacelle is usually via stairs and ladders, or a lift that is located inside the tower. Instrumentation attached to the top of the nacelle provides information on wind speed and direction, which each wind turbine's control system uses to adjust the turbine orientation continuously to optimise its performance. Additional wind measurement instrumentation may also be installed on monitoring masts within the Project area and act as additional points of reference for the wind turbines.

The turbine towers are designed specifically for each turbine and are constructed from multiple tubular steel sections with the first base-section being bolted to the concrete foundation. Successive sections are raised using a crane and bolted on top of each other. The tower also contains electrical and communication cabling as well as a ladder and hoist to access the nacelle.

Most of the electrical equipment, including a step-up transformer, will usually be mounted inside the base tower section. A Ring Main Unit (*RMU*) which serves as a switch between each turbine and the rest of the wind farm will often be located externally, near to the base of the tower. Two radiators will normally be located at the base of the tower, on the outside, and will provide cooling for the wind turbine. Additional cooling equipment can be in the nacelle.

The nominal power output of existing turbine models is 4.5 – 6.5 MW per turbine. However, turbine technology has changed rapidly over the past few years to increase efficiency and output and it is likely that new models will be used for this Project. **Figure 3-2** displays the details of Goldwind 3S series turbines installed at Stockyard Hill wind farm in Western Victoria. Models proposed for Baldon wind farm will be larger, higher output and more efficient designs.

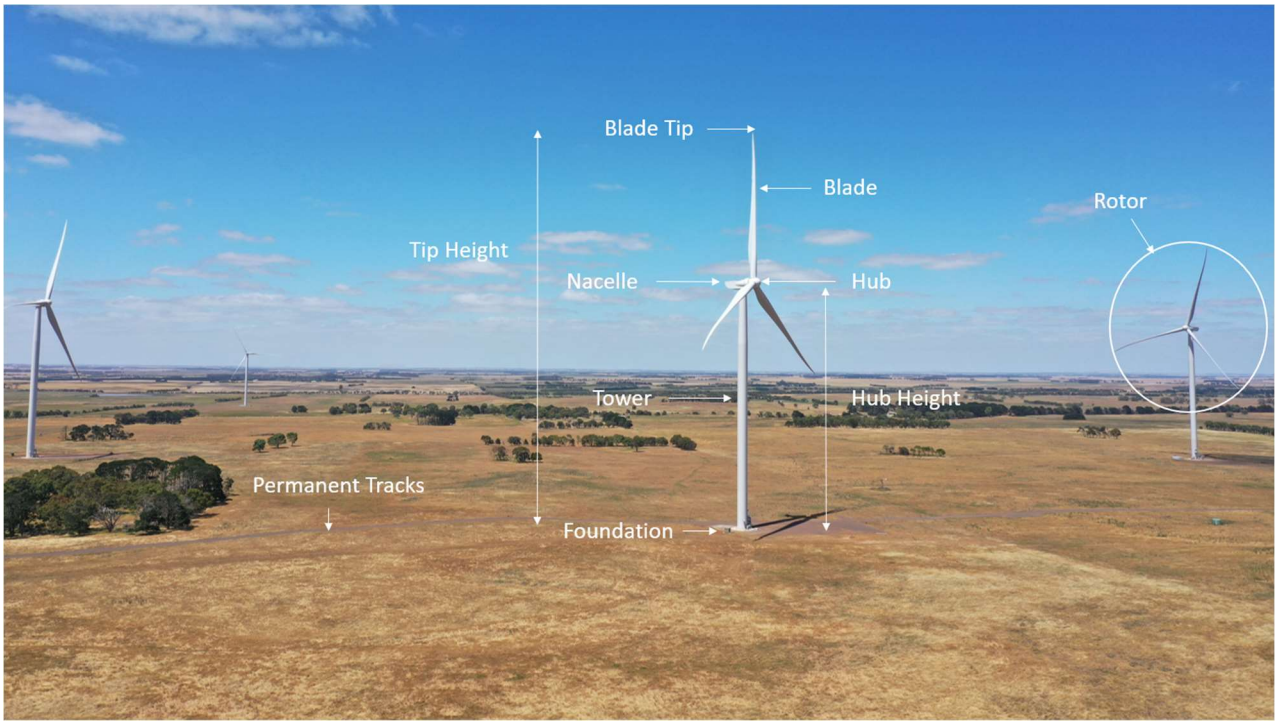

Figure 3-2: Wind Turbine Generators installed at Stockyard Hill wind farm in Western Victoria

An integral part of each turbine site is a hardstand adjacent the turbine tower as shown in **Figure 3-3**.

Hardstands are areas required at each wind turbine site, generally as shown in **Figure 3-3** but varying in layout design and extent based on site features, the turbine model and construction methodologies. The hardstand provides the platform for the delivery of turbine components prior to installation and to provide a stable platform for the crane to assemble the turbine components during installation. The hardstands are maintained during the operation phase of the wind farm to support wind turbine maintenance and decommissioning, as required.

The hardstand in **Figure 3-3** is approximately 70m by 85m. This hardstand was used for the installation of the GW155/4.5 MW Wind Turbine at Esperance Wind Farm in August 2021. Each turbine model requires a different sized

hardstand and clearing required for the turbine footing, hardstand and blade laydown area varies depending on the turbine model, footing design, component dimensions and cranage methodology for the turbine installation.

Figure 3-3: Hardstand with a blade laydown area (Esperance Wind Farm July 2021)

3.4.2 Ancillary Infrastructure

Ancillary infrastructure refers to all permanent wind farm infrastructure and can include the BESS and some of the following:

- On-site access tracks and hardstands for each turbine site
- Operations and Maintenance (O&M) Buildings (Office and Amenities and Warehouse/Workshop)
- Main substation which provides a connection to the NEM (includes high and low voltage switchyards, transformer(s), control, and storage buildings. It may also contain power quality components (harmonic filters, capacitors, etc)
- Collector substations which aggregate the output of approximately 8 - 10 turbines using underground 33kv cables and transfer this to the main substation using higher voltage powerlines.
- Overhead power lines between the collector substations, main substation, and the NEM connection point.
- Permanent meteorological masts

On-site access tracks will be constructed to facilitate access to turbines sites and other infrastructure. The tracks are normally unsealed and designed to allow for safe access for personnel and access for over-dimensional vehicles transporting wind turbine components. Access tracks need to be constructed to bear the required vehicle loadings and designed to include an appropriate turning radius on bends and intersections that allow them to be negotiated by over-dimensional loads such as the blade transport vehicles that may be over 90m in length.

The O&M facility is a relatively small part of the final project footprint but is a key component during operation of the wind farm. The facility houses the service team providing them with office facilities and with adequate amenities. These include parking areas (catering for site team, contractors, and visitors), warehouse and workshop building, water tanks, waste skips, vehicle wash down area and trailer parking area. The O&M facility will require power and water supply as well as communications. Both scheduled and non-schedule services will be delivered from the O&M facility over the life of the Project.

A system of underground 33kV cables will usually connect groups of 8 – 10 turbines to a collector substation. The cables are installed using a trenching machine which excavates a narrow trench, into which the power cables are laid together with communication and the trench backfilled. Vegetation is normally rehabilitated after installation.

A limited number of overhead lines may also be considered to facilitate collection of power from turbine groups and to reduce electrical losses.

Figure 3-4: Transport of a 68.6 metre wind turbine blade to site (Cattle Hill Wind Farm 2019)

The substation is generally comprised of a high voltage switchyard, one or more large transformers, 33kV switchroom, auxiliary services equipment, power quality components (harmonic filters, capacitors, etc). An example of a typical wind farm substation is shown in **Figure 3-5.**

The substation is built on a specialized hardstand area called a bench; this is surrounded by security fencing as required by the relevant electrical safety regulations. A small parking area is normally provided at the site. One or more large transformers will be installed in large concrete bunds. These bunds are designed to retain the contents of the transformer and cooling system (insulating oil) so that in the event of failure, an oil spill is contained. An oil water separator is likely to be installed in the bund as an environmental protection measure and would be subject to regular inspection and maintenance.

The substation will normally be located away from residences and if necessary, landscape screening can be applied around the perimeter to limit views, if warranted. The substation may be in a central part of the wind farm and close to the grid connection point, thereby reducing additional structures for a grid connection transmission line. **Figure 3-5** is an example of what a substation can look like.

Figure 3-5: Wind Farm Substation Example (Stockyard Hill Wind Farm December 2021)

3.4.3 Meteorological Monitoring Masts

Each wind farm will normally require temporary and permanent meteorological masts located through the project area. These masts normally collect wind resource data at selected heights, including at the proposed hub height of the wind turbines. These permanent meteorological masts are required to calibrate the wind speeds recorded at the wind turbines for initial and ongoing power performance testing and to assist in the generation of the representative wind speed required by AEMO for the calculation of generation forecasts. These masts will also be utilised for operational noise compliance testing.

Temporary monitoring masts may also be installed across the site during development and construction (either at turbines sites or nearby). These masts generate long term wind resource data for the site and provide crucial information about the energy available at these sites and to aid in determining the best locations for each wind turbine to be constructed.

3.4.4 Temporary Facilities

Temporary facilities will be required during the wind farm construction and could consist of:

- One or more construction compounds including, offices, materials storage compounds, temporary laydown areas and stockpiles, temporary bulk fuel storage used for earthworks and cranes during turbine installation.
- One or more concrete batching plants. These will comprise mobile batch plants, material storage areas as well as turning areas for materials delivery, loaders, and agitator trucks.
- There may be a need for some temporary construction access tracks but as far as practicable, all site access will be via the wind farm's permanent access tracks.
- If rock is excavated on site, rock crushing facilities may also be utilised to re-size the excavated rock and facilitate re-use on site.

- Temporary meteorological masts may be installed and removed prior to wind turbine installation or after performance testing.

The ability of local towns to support the accommodation requirements for the temporary (1- 2 years) construction staff will be assessed during the EIS process and will be reviewed in consultation with the relevant local town councils. If suitable temporary accommodation cannot be provided in local towns, the Proponents may be required to build a temporary accommodation camp either on the Project site or nearby.

A temporary accommodation camp would be comprised of fully sell sufficient set of accommodation and support buildings that provide the necessary accommodation and amenities for construction staff and site visitors. Such facilities would reduce daily travelling time to and from site and reduce local traffic. Detailed designs of any such camps would be prepared once the civil contractor is appointed, and construction schedules and workforce size are known.

The locations of all temporary facilities will be assessed in the EIS and each approved location will be rehabilitated after construction is complete, in accordance with the measures which will be defined in the Projects environmental management plan.

3.4.5 Electrical Connection to the NEM

The main substation for the Project will serve as the point of connection between the Project and the NEM. At this stage, the point of connection to the NEM and the final location of the substation has not been confirmed. However, it will most likely be to the existing Darlington Point-Balranald 220 kV transmission line in the central part of the Project area. An alternative connection point may be to the proposed *Project EnergyConnect* interconnector upgrade that may pass through the Project area.

In this situation, where a NEM transmission line passes through the Project area, the main substation is typically constructed adjacent to the transmission line. When the main substation is complete, one or both circuits of the existing transmission line are “turned in” to the main substation which enables the wind farm to export energy to the NEM. Typically, at the substation, the connecting lines will drop on to landing frame structures and be routed through a switchyard with protection devices and metering to the substation transformer.

The detailed design of the electrical components which will be required to connect the Project to the NEM are subject to detailed design and approval by the transmission operator and cannot be fully specified at this time. The EIS will address some of these aspects and those which pose potential environmental or amenity impacts.

3.4.6 Battery Energy Storage Facility

A BESS may be included in the design and be integrated with the wind farm to store excess energy and enable this energy to be discharged when it is needed. It can maximise the use of the available wind resource and may allow the Project to participate in both energy arbitrage by storing/dispatching energy in accordance with market demand and ancillary services (such as Frequency Control Ancillary Services (*FACS*) or grid strength support). Such systems are now commonly used to address the intermittent characteristic of renewable energy supplies and have the additional benefit to consumers of mitigating spikes in energy costs during times that would otherwise be subject to supply shortfall.

The final design of a BESS would include consideration of the scale of storage needed for the Project and types of systems that could serve that requirement. The ultimate design specification would be determined by system requirements, available technology reliability, and commercial aspects, however it is anticipated that the facility could have a capacity of up to 200MW/800MWh and be located near to the Projects substation (**Figure 1-3**)

In terms of impact, a BESS facility would likely have similar requirements to a substation: it would consist of a fenced compound containing operation and maintenance buildings, parking spaces and several battery modules which are generally provided in shipping container sized structures. A BESS facility may share facilities with the main substation or be in proximity and connected to the substation with underground or overhead cables. It is expected that a BESS facility would be relatively inconspicuous and would be less visible from surrounding areas that other wind farm components.

Further details of the scale, location and potential design of the BESS will be provided in the EIS together with assessment of potential environmental impacts and their management.

3.5 Development Footprint

Due to the early stage of the Project and the ongoing design process which will occur will developing the EIS, a development footprint is not able to be accurately defined at this stage. Calculations based of the proposed infrastructure which is outlined in the Preliminary Layout (**Figure 1-3)** indicates that the Project will impact an area of approximately 2,800 ha which is equivalent to 6.5% of the total subject land.

The final development footprint of the Project will be the area that is impacted by the permanent wind farm infrastructure which will be in place for the life of the Project and is likely to include some of the following:

- Access Roads
- BESS,
- Hardstands,
- Operations and maintenance buildings
- Substation, switching and other related electrical facilities,
- Transmission Lines, and
- Turbines.
- Transmission Lines,
- Substation, switching and other related electrical facilities,

3.6 Project Phases

The Project may be constructed in a single stage (all turbines and associated facilities) or multiple stages (parts of the project developed at different times) and each stage would proceed through construction as shown in **Table 3-1**. If a BESS facility was included, installation may be undertaken separately to the wind farm installation. Timeframes are approximate and indicative only.

If the Project is to be re-powered after the initial 30-year term, then the phases may repeat – albeit with a potentially shorter construction window given the established site access and ability to reuse some infrastructure. However, given the likely progression of wind turbine models, it is expected that a further planning approval could be required in respect of any future variations.

Table 3-1: Project Phases and Indicative Timeframes

Phase	Approximate Duration
Pre-Construction (Approval to commencement of construction)	1 to 2 years
Construction including civil works, installation, and commissioning	2 to 3 years
Operations and Maintenance	30 years
Decommissioning	1 to 2 years

3.6.1 Wind Farm Pre-construction

Following the Project receiving Development Consent and, if applicable, EPBC Approval (referred to here as the Approvals), there are typically several approval conditions that must be satisfied before work can begin. This process may involve:

- Further site studies such as land survey and geotechnical studies to refine the design layout.
- Finalisation of grid connection agreements.
- Exercising landowner options and taking long-term lease agreements
- Seeking tenders from contractors that can deliver the project components
- Arranging financing
- Awarding of construction contracts

- Completion of all other pre-construction requirements as set out in the Approvals, including the preparation and endorsement of specified management plans.

Where permitted by the Approvals, certain early works may proceed subject to any further or secondary approvals, for works such as:

- local road and intersection upgrades may be implemented to facilitate the safe commencement of on-site works without local traffic conflicts.
- Establishment of temporary accommodation facilities for the construction workforce prior to commencement of full construction.
- Installation of meteorological monitoring masts is generally required in advance of the commencement of construction. The data from these masts is used for energy assessment, layout design, turbine performance analysis and background noise monitoring and/or post-construction noise compliance monitoring

Any early works would still need to integrate the appropriate management measures to avoid impacts beyond those permitted by the Development Consent or EPBC Approval. Consideration would also need to be given as to whether any early works will be subject to an Environment Protection Licence that is expected to be required for the wind farm development and operation.

3.6.2 Wind Farm Construction

Subject to gaining all the necessary planning approvals, licences, contractual and financing arrangements in place, the construction of the Project is estimated to commence in 2024.

Examples of construction works are outlined below:

- Site establishment by the civil and/or electrical balance of plant contractor. An initial small work force would develop site entries, limited access tracks and a construction compound. Scale up activities at the compound would occur as the workforce increases.
- Vegetation clearing initially for temporary facilities and progressively for access tracks and hardstands for each turbine site eventually leading to preparation of cable routes for trenching and cable installation. Extension of this activity, ahead of civil works, to ensure sensitive clearing and protection of fauna as well as defining limits of native vegetation impacts is a normal procedure for cable installation.
- Bulk earthworks to form tracks, hardstands and excavate turbine and substation footings. This may involve forming topsoil stockpiles and removing soils that are unsuitable for access track formation and replacing them with suitable materials, where necessary.
- Formation of turbine and substation foundations by installing formwork, steel reinforcing and concrete pours.
- Construction of substation, including grid connection and energisation (delivery of component parts including large transformer(s)).
- Trenching for installation of underground cabling between substation and turbines. Backfilling trenches and rehabilitation of impact areas.
- Delivery of turbine components to site and set-down on hardstands or adjacent land (blades may be placed on blade racks to limit ground disturbance).
- Crane contractor to establish on-site and commence turbine installations.
- Erection of turbines across the site, possibly using multiple cranes operating in parallel. Consideration may also be given to multiple shifts to fast-track the installations.
- Following installation, the turbines will be connected to collector circuits and checked to ensure readiness for commencement of turbine commissioning.

3.6.3 Wind Turbine Commissioning

Pre-commissioning checks will be carried out on the high voltage electrical equipment at the substation prior to connection to the NEM. When the Project's electrical system has been energised, the wind turbines and BESS (if included in the works) can be commissioned and put into service.

Wind turbines are commissioned sequentially enabling parts of the wind farm to commence operation, prior to the completion of wind farm construction. The commissioning phase requires a team of commissioning and service contractors working on each wind turbine and associated facilities to ensure correct operation for commissioning purposes.

At this phase of the development, the Project will start to review operational compliance and ensure items such as noise requirements are able to be met and potential avifauna impacts are monitored.

3.6.4 Wind Farm Operation and Maintenance

Following completion of commissioning of all wind turbines, the Project will enter the operations phase where the wind farm will operate continuously as wind conditions are suitable. Individual turbines will be shut down for periodic scheduled inspections and maintenance and, as necessary, unscheduled maintenance. The on-site operational facility will be host to a team of permanent on-site service staff including technicians with electrical and mechanical experience and site management and administration personnel. The permanent on-site service team will from time-to-time be supported by contract service personnel.

Occasionally more substantial maintenance and repairs to a wind turbine may be required, for example, to replace a wind turbine blade or generator. This would require a crane and turbine component being mobilised to site together with associated plant, riggers, and crew to carry out the work.

3.6.5 Decommissioning

The design life of the wind turbines is potentially for a period of 30 years after commencement of operations. At that time, the Project owners would need to consider options for future use of the site. Such options would include decommissioning and removal of the existing turbines and towers with or without replacement with new turbine equipment. Given the transition to renewables that is occurring, it is expected that continued use of the site for renewable energy would be the most likely outcome. However, that could involve different wind turbine models, changes in dimensions and/or turbine power ratings.

If it is determined to decommission the wind farm, then the wind turbines would be dismantled, and their respective components removed from site, generally as follows:

- Dismantled turbine components, to the extent possible, will be reused or recycled.
- Associated buildings and substation components may be removed or be suitable for redevelopment
- Internal underground cabling may be left in-situ or removed for materials recovery
- Hardstands can be broken up to allow revegetation and return to pasture
- Access tracks may be left in place if beneficial to the landowner or could be broken up and returned to pasture.

The duration of decommissioning can take up to two years to complete, depending on the complexity of the site and the number of wind turbines and associated infrastructure to be removed. An Environmental Management Plan including a Traffic Management Plan may also be needed for the decommissioning and removal of the materials.

3.6.6 Repowering

Should repowering be adopted at the end of the wind farm life, then a new planning application or a modification to the consent reflecting changes to the project may be needed.

Repowering would most likely involve the replacement of the existing wind turbines with newer, more efficient models. The new design may require changes to the internal access tracks, cabling, foundations as well as changes to

turbine spacing and tip height. That detail would be subject to the available equipment, designs at the time and updated impact assessment and any relevant constraints.

4.0 PROJECT SITE SELECTION

4.1 Project Site Selection

There are a range of site options in south-west NSW that are potentially suitable to physically host wind farm infrastructure, however, many of these either lack the appropriate wind resource or are more distant from suitable transmission lines with sufficient capacity to export energy to the NEM. Other areas may have environmental or social impacts that will reduce their acceptability for development. When considering a potential project, there are a number of key factors that must align to make a site viable:

- Wind: resource that supports a viable project
- Land: Suitable land with supportive landowners and low density of neighbouring residences
- Environment: The impact on native flora and fauna is acceptable or can be mitigated or offset
- Community: That is open to the prospect of the development and generally supportive
- Planning: The development is permissible and able to be supported by regulators
- NEM: Grid connection capacity is available in existing or proposed transmission infrastructure
- Design: the potential designs are suitable for the site and form a viable project

This specific site has been selected on the following basis:

- Wind: The wind resource has been assessed as good using modelled data and on-site wind monitoring for 2 years.
- Land: The landowner supports the Project and has entered into an agreement for the development.
- Environment: The flat site and current agricultural use means the design can be flexible to avoid any sensitive areas.
- Community: The Murry River and Hay Shire councils are very supportive and recent community engagement has indicated there is no strong opposition to the Project. Low rural settlement density and the ability to provide large setback distances to neighbouring dwellings will reduce potential for community impacts
- Planning: The State Government and local Shire councils are supportive and there is a well-defined planning approvals pathway to assess the Project
- NEM: An existing transmission line crosses the subject land which provides access to the NEM. The proposed *Project EnergyConnect* project could add further grid capacity if it its final location is close to the Project.
- Design: This scoping study has enabled a preliminary design to be produced that seeks to provide a viable project while minimizing any potential impacts to the environment or the local and regional community.

4.2 Project Constraint Analysis

Following the full suite of investigations as determined through the SEAR's and EIS studies, the layout of turbines and other infrastructure will be optimised to avoid any sensitive ecological features, heritage, or social sensitivities. The constraints that limit the design of the Project will be compiled in a geographic information systems (GIS) database and updated during design iterations. Any additional constraints that might be identified through the approvals process will be incorporated and the design modified. Typically, the layout is refined via an iterative process as design and environmental assessment studies are progressed. The separation distance which has been adopted for this preliminary design is considered to be sufficient to meet regulatory and community requirements.

4.3 Project Refinement

The Project which forms the basis of this Report has been informed through a consideration of the available land area, constraints identified to date and with the objective to mitigate impacts on neighbouring properties. This design will be further refined during development of the EIS, as detailed assessments are undertaken and consideration of how the results impact the Project, and vice versa.

Community engagement with immediate neighbours to the Project will be undertaken with the aim of understanding community concerns or potential land use conflicts and removing or minimizing impacts from the wind turbines during formative stages of development.

5.0 PROJECT STRATEGIC CONTEXT AND JUSTIFICATION

5.1 Overview

This section outlines the relevance of the Project to Local, State and Federal Government strategic objectives for transitioning energy away from a reliance on fossil fuels and towards sustainable renewable energy sources. The government's objective is to support a reduction in the greenhouse gas emission intensity of the electricity industry and reduce its contribution to climate change.

5.2 Project Viability and Statutory Context

The Proponent has integrated social, environmental, and economic considerations while developing the Project to minimise potential impacts and conserve or enhance the beneficial outcomes for the local community. This strategy aligns with the concepts of *Australia's National Strategy for Ecologically Sustainable Development* (*ESD*).

There are several key areas that have been considered in the selection of the location of the Project that will be elaborated in the EIS, including:

- **Access:** There is good access to the Project site through highways, minor roads and unsealed council roads which pass through the Project area at multiple points.
- **Economic Benefit**: Local towns and surrounding communities are established and have existing commercial networks and supply chains that underpin the current financial health of the Local Government Area. The development offers the prospect to further diversify the local economy to grow existing businesses and introduce opportunities for new businesses.
- **Environmental**: The Project is located on land which has already been altered through agricultural activities over the past century. In preparing the preliminary design, the Proponent has sought to minimise any environment or social impact. Further studies for the preparation of the EIS will enable the Proponent to identify and further reduce any environmental impacts. Despite this, there may be some environmental impacts that cannot be avoided and strategies to mitigate or offset these impacts will be developed.
- **Land Use**: The Project infrastructure is likely to use approximately 1% of the available farmland, the balance of the land within the Project area can continue to be used for the landowner's normal agricultural practices (predominantly grazing).
- **Local Community**: Based on the community consultation efforts to date, support has been expressed for the Project and its potential employment and business opportunities – both temporary and permanent.
- **Proximity to Sensitive Receivers**: The area surrounding the Project has a low population density and the initial design of the Project has sought to minimise any impacts on the local residences. Potential noise impacts upon neighbours and local residences will be further assessed as the Proponent prepares the EIS. The Proponent will continue to consult with neighbours and the local communities through the planning and operation of the Project.
- **Transmission Network:** The proposed point of connection to the NEM for the Project is via the existing Darlington Point-Balranald 220 kV transmission line and/or the proposed *Project EnergyConnect* interconnector upgrade. The point of connection within the Project area is ideal to reduce any impact on neighbouring properties and can be located to minimize environmental impacts.
- **Wind Resource**: The site was initially identified using publicly available wind resource date for the area. Local wind monitoring (SODAR) devices have been placed on the property for approximately 3 years and have continuously collected wind resource data for the site. These data confirm that the wind speeds are high, consistent, and are suitable for the current turbine models proposed by the Proponent. The Proponent believes that a high-quality wind farm is a viable option for this location.

5.3 Development Mandate

The benefits of developing renewable energy projects and transitioning to a low carbon future have been identified globally. The potential benefits at a Local, State and National level for these developments include increased community resilience, diversification of income, jobs and direct financial benefits flowing to local communities. An increased adoption of renewable energy sources will enable Australia to transition away from fossil-fuel based energy production and reduce its CO_2 emissions. Reducing carbon dioxide emissions has the potential to halt or slow the effects of climate change which will benefit current and future generations.

There is a growing acceptance that the environmental impacts associated with the generation of energy using fossil fuels requires urgent mitigation. In response, the adoption of national and state-wide commitments to support the growth of renewable energy developments has occurred. This Project is consistent with these commitments.

5.3.1 Australian Government Energy Policies

The Australian Government has developed several policies and initiatives which aid and incentivise Australia's transition away from carbon-based energy production. These include the following schemes:

- **Renewable Energy (Electricity) Act (2000):** established by Federal Parliament with the aim to obtain 45,000 GWh of energy from renewable energy sources by 2020. In 2015, this was revised down to 37,000 GWh.
- **Renewable Energy Target** (*RET*): under the Act, two main schemes were developed, the Small-Scale Renewable Energy Scheme (*SRET*) and the Large-Scale Renewable Energy Target (*LRET*). The SRET provides financial incentive for small scale renewable energy sources such as rooftop PV. The LRET requires electricity retailers to source up to 20% of their electricity from renewable energy sources such as PV, wind or hydro.
- **Climate Solutions Fund** (*CSF*): established by the Federal Government to support emissions reduction projects in Australia and to drive the Government's aim to reduce emissions of CO_2 by 26-28% below 2005 emission levels by 2030. The CSF was originally established in 2014 with an initial $2.55B in funds and subsequently an additional $2.55B in funds was added to keep it going for a further 15 years.

In September 2019, the Clean Energy Regulator announced that enough capacity had been approved to ensure that the LRET target would be met in 2020. In December 2021, the Clean Energy Regulator revised their predictions due to "*a higher proportion of solar projects in the pipeline than expected.*" The Clean Energy Regulator now indicates that the 2020 target has been met and exceeded. The trajectory of renewable energy progress is shown in **Figure 5-1**.

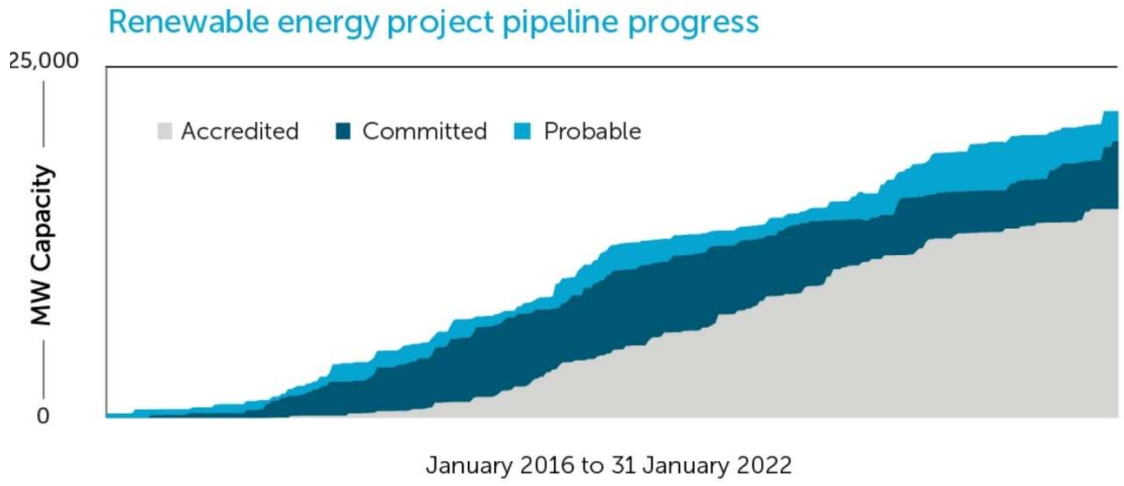

Figure 5-1: Trajectory of renewable energy production 2016 - 2022 (Clean Energy Regulator)

5.4 NSW CO_2 Reduction Schemes

5.4.1 NSW Net Zero Plan Stage 1: 2020 – 2030

The NSW Department of Planning and Environment released the Net Zero Plan Stage 1: 2020-2030, in March 2020 along with the establishment of Renewable Energy Zones in regional NSW. The goal of establishing this Net Zero plan is to assist the State in the delivery of a 35% cut in CO_2 emissions by 2030, when compared to 2005 levels. The plan highlights several key initiatives and is the first of three 10-year plans that set a pathway to net zero emissions by 2050. The Net Zero plan has several goals as highlighted below:

- A central focus on the creation of jobs.
- Lowering energy costs for consumers.
- Encouraging investment in technologies such as:
    - energy-efficient appliances and buildings,
    - rooftop solar panels,
    - firmed grid-scale renewables projects,
    - electric vehicles and
    - electric manufacturing technologies.
- To provide levels of certainty to investors that NSW is a place to invest in renewable energy, efficient technologies, and sustainable materials.
- Funding, targets, and programs that will help drive this change, such as:
    - Development of three Renewable Energy Zones in the Central-West, New England, and South-West of NSW to drive up to $23 billion in investment and create new jobs,
    - Development of a Green Investment Strategy, with Sydney as a world-leading carbon services hub by 2030,
    - Enhancement of the EnergySwitch service which enables consumers to compare the emissions performance of energy retailers,
    - Establishment of a hydrogen program that will help the scale-up of hydrogen as an energy source and feedstock, and the setting of an aspirational target of up to 10% hydrogen in the gas network by 2030
    - $450 million Emissions Intensity Reduction Program
    - $450 million commitment to New South Wales from the Climate Solutions Fund
    - $1.07 billion in additional funding via both NSW and Commonwealth Governments in a range of measures

It is anticipated that the implementation of the Net Zero Plan, together with the NSW Electricity Strategy, will result in more than $11.6 billion of new investment for NSW, including $7 billion in regional NSW and see the creation of almost 2,400 new jobs.

5.4.2 NSW Electricity Strategy

The NSW Electricity Strategy is the NSW Government's plan for a reliable, affordable, and sustainable electricity future that supports a growing economy. The strategy encourages an estimated $8 billion of new private investment in NSW's electricity system over the next decade, including $5.6 billion in regional NSW. It will also support an estimated 1,200 jobs, mostly in regional NSW. The strategy aligns closely with the NSW Government's Net Zero Plan Stage 1: 2020 – 2030.

5.4.3 NSW Renewable Energy Zones

The NSW Government's Electricity Strategy sets out a plan to deliver five Renewable Energy Zones (REZs). These zones will be in the Central-West Orana, New England, South-West, Hunter Central Coast, and Illawarra regions. These REZs

will stimulate the construction of renewable energy generation and deliver affordable reliable energy to help replace the State's existing carbon-based power stations as they come to their scheduled end of operation.

It is estimated that the formation of these REZ's will unlock a significant pipeline of large-scale renewable energy and storage projects, which will be supported by over $20 billion in private investment in the regions and the creation of over 5,000 jobs at peak.

The NSW Government is in the process of planning a REZ in the south-west region of NSW (**Figure 5-2**). This REZ will benefit from the proposed EnergyConnect transmission line project. The EnergyConnect project is a new high-voltage interconnector between NSW and SA to link the SA and NSW markets. The new transmission line may provide additional connection options and increased capacity for renewable energy projects in the planned South-West REZ.

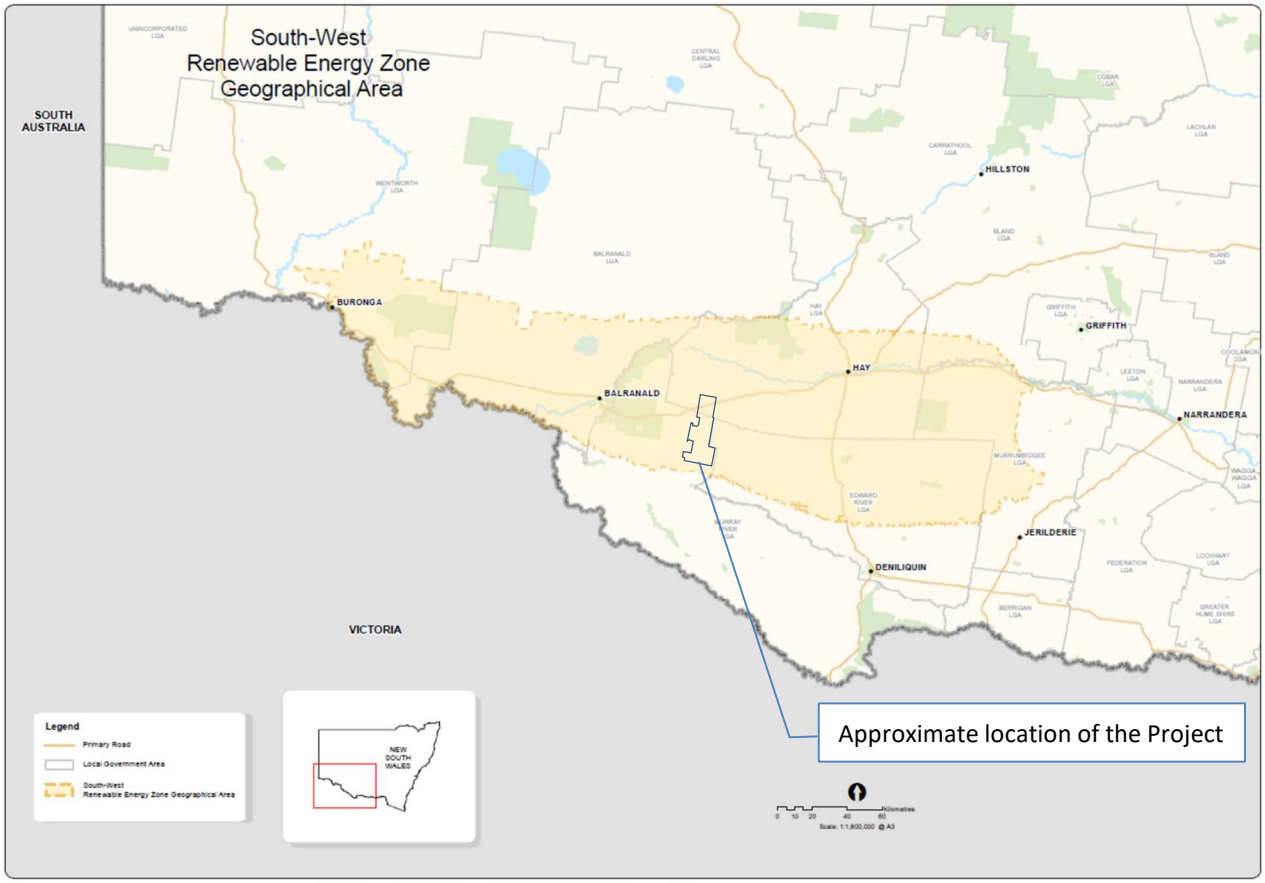

Figure 5-2: Draft location (25/3/2022) of the South-West Renewable Energy Zone geographical area

5.5 Benefits of the Project

The Project will provide a number of benefits at the Commonwealth, State and Local levels.

At the Commonwealth and State level, the benefits could include:

- An injection of up to 1,000 MW of capacity into the NEM, equating to approximately 3.4GWh of renewable electricity, displacing coal and gas fired generation.
    - This will contribute to the commonwealth Government's commitment to reduce Australia's greenhouse gas emissions by 26-28% by 2030,
    - It will contribute the NSW governments greenhouse gas reduction targets and is appropriately located within the NSW South-West REZ created by the NSW government to promote renewable energy development,

- Renewable energy to power almost six hundred thousand homes (598,000 based on the average NSW home electricity usage of 5,745kWh),
- It is likely that the Project, will provide cheaper and more reliable energy to the state than existing fossil fuel generation assets with zero CO_2 emissions, and
- A project of this size is likely to require an investment of 1-2 billion dollars, most of which will be invested in NSW.

At the local level, the benefits could include:

- Direct financial benefits to participating landowners, neighbours, and the local community,
- Investment in local suppliers of materials and labour during the construction period,
- Approximately 350 full-time equivalent jobs during the peak of the construction, and
- Approximately 25 permanent skilled jobs for the life of the Project.

6.0 STATUTORY PLANNING CONTEXT

6.1 Introduction

This section outlines the environmental planning context for the proposal at this formative stage. Further details will be provided, and the relevant requirements will be addressed in the EIS following issue of the SEAR's. This outline is provided as a guide to the applicable legislation and requirements for the proposal and the EIS.

Development of a wind energy facility in NSW is subject to the requirements of the *Environmental Planning and Assessment Act 1979* (EP&A Act) and its associated regulations. These include environmental planning instruments prepared pursuant to the EP&A Act and licencing under the NSW *Protection of the Environment Operations Act 1997* (POEO Act). The proposal may also trigger Matters of National Environmental Significance (*MNES*) that require approval under the Environment Protection and Biodiversity Conservation Act (EPBC Act). A range of other planning and environmental legislation also needs to be considered, as outlined in this section.

6.1.1 Regulatory Compliance for Project

Development of the Project is likely to require the following approvals:

- Landowner consent for use of the project land,
- Acknowledgment of the Project being a State Significant Development,
- Development Consent under the NSW EP&A Act as a State Significant Development, requiring submission of a Development Application and EIS to DPE and determination by the Federal Minister or Independent Planning Panel,
- A referral under the EPBC Act will be required,
- If the Federal Minister determines the action a 'controlled action' then approval of the Minister would be required,
- An Environment Protection Licence under the POEO Act and preparation of a PIRMP,
- Grid Connection Agreement,
- Environmental offset permits are likely for unavoidable impacts on Native Vegetation and or habitat, and
- A range of other approvals and permits may be required as identified through EIS assessment process.

A description of relevant legislation and an outline of requirements follows:

6.2 Key NSW State Legislation

6.2.1 Environmental Planning and Assessment Act 1979 (EP&A Act)

The Project will be assessed as a State Significant Development under the EP&A Act. The EP&A Act is the principal planning legislation for NSW and it provides a framework for the overall environmental planning and assessment of development proposals in the State. In July 2021, DPE released guidelines for assessment processes to assist Proponents in the preparation of applications to support more efficient regulatory review and decision making.

The Proponent is seeking development consent under Division 4.7 of Part 4 of the EP&A Act for the Project as an SSD. Under the provisions of section 4.15 of the EP&A Act, the consent authority is required to consider certain matters pertaining to the relevant plans and policies that apply to any development application for SSD. These matters will be identified and assessed through the preparation of the EIS and include other statutory environmental planning instruments such as State Environmental Planning Policies (SEPP) and Local Environmental Plans (LEP). **Figure 6-1** shows the planning pathway for SSD which the Proponent will follow, initiated by the issue of the Secretary's Environmental Assessment Requirements (SEAR's) following DPE's review of this Report.

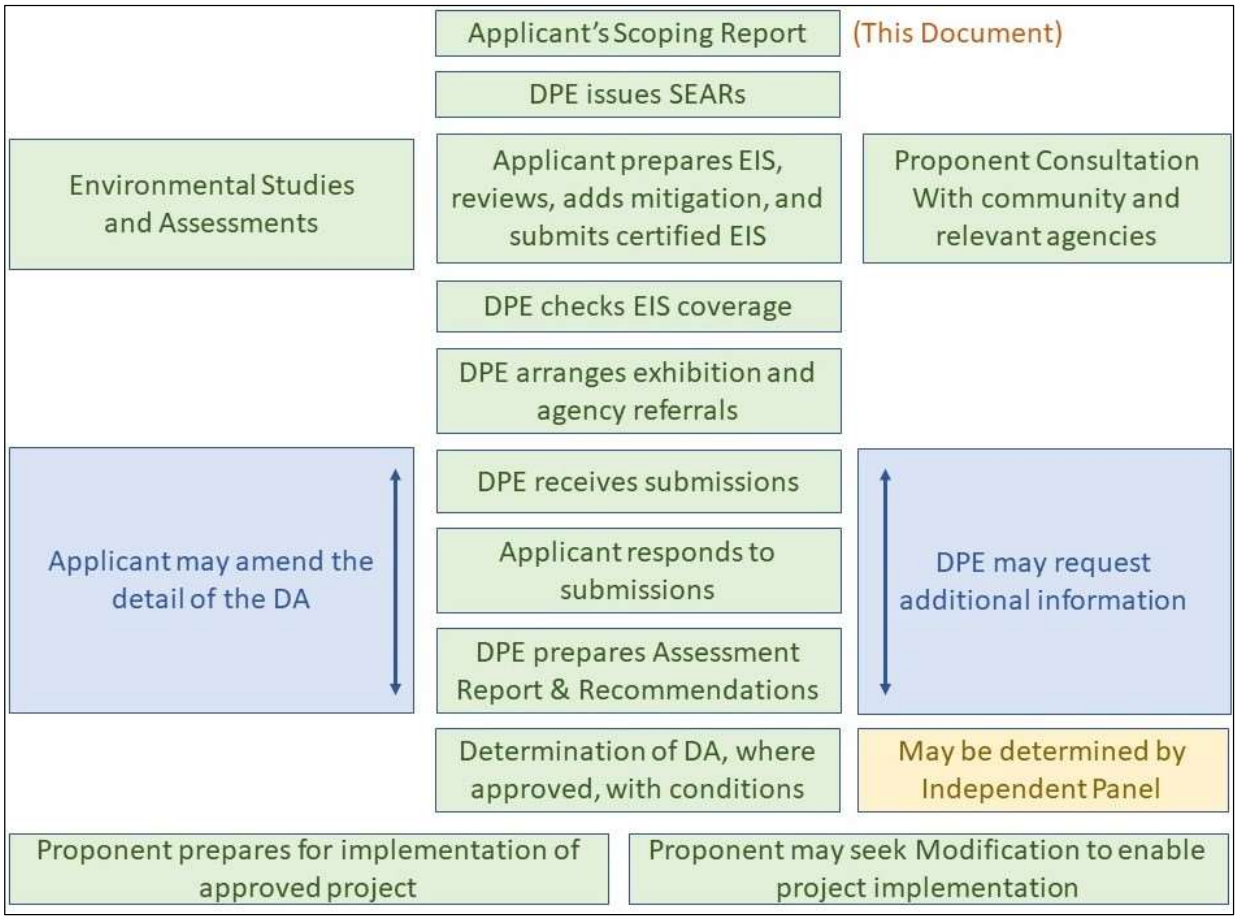

Figure 6-1: State Significant Development Approval Pathway (Source: Modified from diagram in SSD Guidelines)

In mid-2021, DPE issued guidelines to assist Proponents and stakeholders in the preparation of development applications for State Significant Developments. These guidelines seek to help Proponents understand the assessment and approvals processes and facilitate preparation and processing of applications that conform with requirements outlined in the Guidelines. The EP&A Act is also supported by planning policies Local, Regional and State levels and set out planning objectives and provisions. Key instruments are outlined below.

6.2.2 State Environmental Planning Policies (SEPP)

The following State Environmental Planning Policies (*SEPP*) have relevance to the Baldon Wind Farm development.

6.2.2.1 State Environmental Planning Policy (Planning Systems) 2021

The State Environmental Planning Policy (SEPP) 2021 determines whether:

- A development t is State Significant Development (SSD)
- A development is related to Critical State Significant Infrastructure
- A development is Regionally Significant Development

Clause 2.6(1) of the SEPP states that; a Development is declared to be a State Significant Development for the purposes of the EP&A Act, if:

a. The development on the land concerned is, by the operation of an environmental planning instrument *(e.g., SEPP (Transport and Infrastructure)*, not permissible without Development Consent under Part 4 of the EP&A Act, and
b. The development is specified in Schedule 1 or 2.

Electricity Generating works are listed under Clause 20 of Schedule 1 of the SEPP referred to by Clause 2.6 1(b). If the development is for the purpose of electricity generating works using wind power and has a capital investment value of more than $30 million it satisfies the criteria to be declared an SSD for the purposes of the EP&A Act.

6.2.2.2 State Environmental Planning Policy (Transport and Infrastructure) 2021

The SEPP (Transport and Infrastructure) 2021 was introduced to facilitate the effective delivery of transport and infrastructure across NSW. It provides the permissibility and development assessment provisions which apply across the State for transport and infrastructure sectors.

Division 4, Clause 2.35 and 2.36 of the SEPP apply to the Project, as it is 'electricity generating works' which is defined as 'a building or place used for the purpose of making or generating electricity'. Pursuant to Clause 2.36 of the SEPP, development for the purpose of electricity generating works may be carried out by any person with consent on any land in a prescribed rural, industrial or special use zone. The prescribed zone relevant to this Project is RU1 (Primary Production). Accordingly, under the SEPP (T&I) 2021, the proposal is permissible with consent, despite being prohibited under the applicable LEPs.

6.2.2.3 State Environmental Planning Policy (Biodiversity and Conservation) 2021

Chapter 5 of the SEPP (Biodiversity and Conservation) addresses Koala habitat and River Murray lands including LGAs where the Project is located. The River Murray lands addressed are indicated to be shown on mapping provided in the Murray Regional Environmental Plan No. 2 – Riverine Land (1994).

6.2.2.4 Murray Regional Environmental Plan No 2—Riverine Land (1994 EPI 121)

The aim of the plan is to 'conserve and enhance the riverine environment of the Murray River for the benefit of all users' (Part 1, Section 2). The requirements of the plan apply where a consent authority will be determining the development application. The consenting authority is defined in the plan as 'the Council for the local government area in which the proposed development is to be carried out', the plan does not apply to the Project as it is classified as SSD and will be assessed by the DPE.

6.2.2.5 Other State Environmental Planning Policies

Other State Environmental Planning Policy's (SEPP) which may need to be considered in the preparation of the EIS include (but is not limited to):

- SEPP (Primary Production) 2021 (Part 2.2 addresses State Significant Agricultural Land, not yet confirmed in Schedule 1 of the SEPP).
- SEPP (Koala Habitat Protection) 2021 (Not applicable, Sydney and Central Coast only)
- SEPP (Koala Habitat Protection) 2020 Applies to Zones RU1, RU2 and RU3 zones in the LGAs affected by the Baldon Wind Farm Proposal. The 2020 SEPP largely reinstated requirements of former SEPP 44.
- SEPP No. 33 – Hazardous and Offensive Development
- SEPP No. 55 – Remediation of Land.

The proposal will be assessed on its merits and broader state benefits that accrue from the proposal will be considered, as well as local interests. State environmental planning policy provisions will take precedence over the local provisions. However, local provisions will be considered by the Proponent and where possible, the proposal will seek to be consistent with the provisions. The Proponents will consult with the local Councils on any departures from requirements of the zoning, DCP or LEP objectives with Council. Early consultation with Council has been undertaken and will be continued through the EIS, assessment and implementation phases.

6.3 NSW Relevant Local Environmental Plans and DCP made under EP&A Act

The Project is located within the Riverina-Murry region and spreads across the Murray River and Hay Shire Local Government Areas. It is also immediately adjacent to west of the Edward River LGA. The project application will consider provisions of the following Local Environmental Plans (LEPs) in relation to the proposed development. The

LEPs apply to areas that differ from the current LGAs due to adjustments to boundaries of the applicable LGAs and where the prior LEPs are retained in original form or as amended.

6.3.1 Wakool Local Environmental Plan 2013

The Project is mostly located in the Murray River LGA, which was formed in 2016 by the amalgamation of the former Murray and Wakool shires into a single LGA. Each of these areas had their own Local Environmental Plan (LEP) which are still current. The Project is wholly within the original Wakool LEP area.

The Project area is currently zoned RU1 Primary Production where electricity generating works are prohibited under the Wakool LEP. However, under Clause 34(1)(b) of the State Environmental Protection Policy (SEPP) (Transport and Infrastructure) 2021, development of electricity generating works is permitted, with consent on land zoned as rural. Therefore, the Project is permitted with consent.

The Murray River Council is in the process of amalgamating the Murray and Wakool LEPs into a single, unified LEP for the new LGA. As of this time, we understand that this amalgamated plan will not alter the permissibility of electricity generating works on RU1 Primary Production land.

The Murray River Council's 20-year vision for land use planning is outlined in the 'Murray Shire Local Strategic Planning Statement 2020-2040' (prepared in accordance with Section 3.9 of the EP&A Act).

6.3.2 Wakool Development Control Plan (DCP) 2013

The current Wakool DCP covers the Project area but has no content which is directly applicable to the development of a renewable energy project in the area. DCPs are not statutory requirements for projects deemed State Significant Development (SSD). However, any existing or future DCPs will be considered as relevant, during assessment and development of the Project in the LGA.

6.3.3 Hay Local Environmental Plan 2011

The northern part of the Project is in the Hay Shire LGA. The land in the Project area is currently zoned RU1 Primary Production under the Hay LEP and electricity generating works are prohibited. However, under Clause 2.36 of the State Environmental Protection Policy (SEPP) (Transport and Infrastructure) 2021, development of electricity generating works is permitted with consent on land zoned as rural. Therefore, the Project is permitted with consent.

There are no Development Control Plans (DCPs) listed on the Hay Shire Council website.

6.3.4 Conargo Local Environmental Plan 2013

The Project is adjacent to the Edward River LGA, which was formed in 2016 by the amalgamation of the Conargo Shire and Deniliquin LGA into a single unified LGA. Each of these areas had their own Local Environmental Plan (LEP) which are still current. The Project is adjacent to the Conargo LEP area.

The Project has no direct impacts which need to be accounted for in respect of the Conargo LEP, however the Proponent will liaise with Edward River Council over potential impacts from project activity, such as traffic and transport impacts on local roads during construction, as well as any other indirect impacts as appropriate.

There are no Development Control Plans (DCPs) listed on the Edward River Council website.

6.4 Other Relevant NSW Policies / Plans

6.4.1 Hay Shire Council Community and Settlement Sustainability Strategy 2012

This strategy covers the whole of the Hay LGA. Key sections of the strategy which are relevant include tourism, environmental protection, and flooding.

The strategy therefore covers the Project area, but as it is not a statutory instrument to which the Project must adhere, it will be used as a guide to potential issues considered for development of the Project.

6.4.2 Riverina Murray Destination Management Plan 2018

Destination Riverina Murray is one of six Destination Networks established by the NSW Government. The Networks are responsible for driving the growth of the visitor economy in each respective region. The proposed Project straddles the border between the Central Murray and Outback Riverina sub-regions.

Although the plan does not place any restrictions on the Project, it provides a useful guide on the importance of visitors and future tourism for the region. Moulamein, 13 km to the south of the Project, is highlighted as a local centre where growth is targeted.

6.4.3 Riverina Murray Regional Plan 2036

The Riverina Murray Regional Plan 2036 (Regional Plan) (DPIE, 2017) is a 20-year blueprint for the future of the Riverina Murray region. The Plan seeks to establish a framework to grow the regions cities and local centres, to guide land use planning priorities and decisions. The Plan highlights the importance of developing tourism opportunities, of which the proposed Project could form a contributory role in the region going forward.

6.4.4 Draft Rural Lands Strategy 2020

The Draft Rural Lands Strategy 2020 creates a framework for Council's new LEP and DCP to dictate what development is permissible on rural lands and under what circumstances. It aims to serve both as a land use planning document as well as a plan for economic success and growth through the shared identity of agriculture.

6.4.5 State Significant Agricultural Lands Map (Consultation and Review Phase 2021/2022)

The NSW Government published a State Significant Agricultural Lands (SSAL) Map for public consultation purposes. The Consultation period is now closed, and NSW Government will review submissions on the mapping and consider how this map can best be used in the NSW planning framework. The Project area includes small areas designated as State Significant Agricultural Land (**Figure 6-2**). The SSAL in the project area appears to be related to the Murray and Murrumbidgee flood plains to the south and north of the project area respectively. Hence, the project is appropriately located but this issue will be further considered in the EIS.

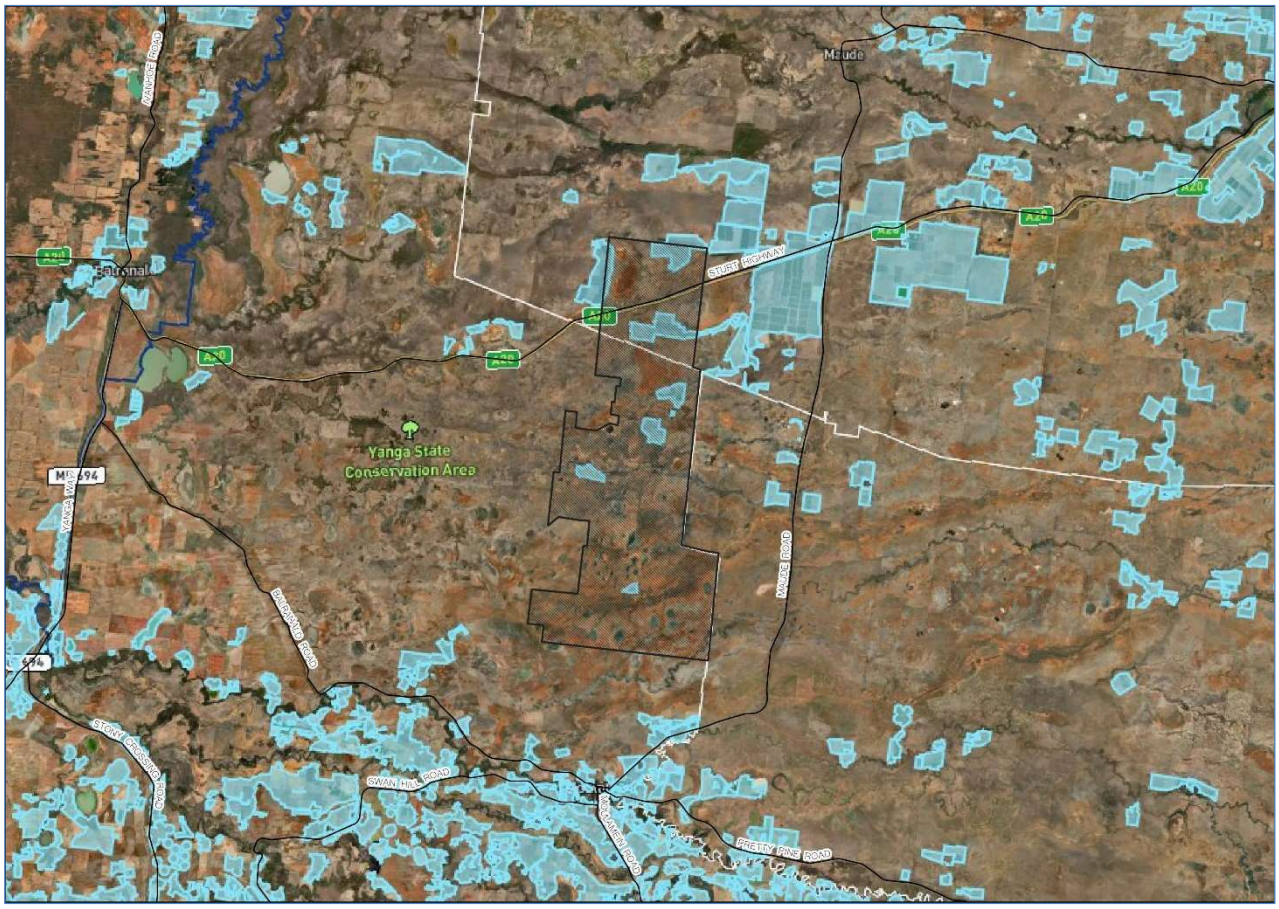

Figure 6-2: NSW State Government, DRAFT State Significant Agricultural Land mapping

6.5 Other NSW legislation

There is a range of other legislation and licencing that must be complied with throughout the development of the Project. This may include legislation in the following areas:

- Biodiversity Conservation Act 2016 (see section 6.2.5)
- Biosecurity Act 2015
- Contaminated Land Management Act 1997
- Conveyancing Act 1919
- Crown Land Management Act 2016
- Electricity Infrastructure Investment Act NSW 2020 (see section 6.2.6)
- Fisheries Management Act 1994
- Forestry Act 2012
- Hazardous Waste (Regulation of Exports and Imports) Act 1989
- Heavy Vehicle National Law
- Heritage Act 1977
- Local Land Services Act 2013
- Mining Act 1992
- National Parks and Wildlife Act 1974
- Petroleum (Onshore) Act 1991
- Pipelines Act 1967

- Protection of the Environment and Operations Act 1997 (see section 6.2.7)
- Radiocommunications Act 1992
- Renewable Energy (Electricity) Act 2000
- Roads Act 1993
- Rural Fires Act 1997
- Waste Avoidance and Resource Recovery Act 2001
- Water Management Act 2000 (see section 6.2.8)

6.5.1 Biodiversity Conservation Act 2016 (BC Act)

The Biodiversity Conservation Act 2016 (BC Act) provides for protection and conservation of biodiversity in NSW through the listing of threatened species and communities and key threatening processes. The BC Act also sets up a framework for assessing and offsetting impacts to biodiversity through the Biodiversity Assessment Methodology (*BAM*).

An assessment under the Biodiversity Offset Scheme (*BOS*) using the NSW Biodiversity Assessment Method (BAM) will be undertaken and a Biodiversity Development Assessment Report (*BDAR*) will be prepared and included in the EIS to address impacts to threatened ecological communities and species protected by the BC Act. A Development Consent would be expected to confirm requirements for securing offsets.

6.5.2 Electricity Infrastructure Investment Act NSW 2020

The Electricity Infrastructure Investment Act 2020 (EII Act) aims to coordinate investment in new generation, storage, and network infrastructure in NSW and for other purposes. It has multiple objectives and seeks to maximise benefits for affordability, reliability, security, and supply as well as benefits flowing to local communities and employment opportunities.

The Act includes consideration of the Renewable Energy Sector and requires the establishment of a Board for the NSW renewable energy sector that amongst other things will prepare and provide to the Minister a plan to address the operation of the sector. The plan will address the manufacture and construction of infrastructure within the sector, noting that the transformation of the NSW Energy System is facing substantial transformation over the next two decades.

Part 3 of the Act addresses Energy Security Targets for the next 10-years, an important consideration for the ongoing economic security of NSW.

Part 4 of the Act addresses Renewable Energy Zones (REZ) and access schemes for each respective REZ as gazetted by the Minister. The Minister is required to declare five REZ as follows; Central-West Orana, Illawarra, New England, South-West and Hunter-Central Coast. It is noted that the Baldon Wind Farm is situated within the area indicated for the South-West REZ, for which the extent is still to be confirmed.

Part 5 addresses Network Infrastructure projects

Part 6 addresses the Electricity infrastructure Investment Safeguard that applies to infrastructure:

- generation from a renewable energy source that has a generation capacity of not less than 30 megawatts,
- long duration storage with a registered capacity of at least 8 hours and is scheduled by AEMO under National Electricity Rules
- Firming infrastructure that is scheduled by AEMO under the National Electricity Rules

Part 7 sets out a mechanism to establish and maintain an electricity infrastructure fund for the purposes of the Act

Part 8 addresses administrative aspects

6.5.3 Protection of the Environment Operations Act 1997

The protection of the Environment Operations Act 1997 (POEO Act), Schedule 1 defines scheduled activities and Part 1 Premises based Activities. Item 17 (1) includes:

- *electricity works (wind farms),* meaning the generation of electricity by wind turbines.

As a Scheduled Premises, the Wind Farm is required to apply for and obtain an Environment Protection Licence (EPL). The EPL may be issued in phases, initially for the wind farm development works and subsequently for the wind farm operation. These phases will have different environmental risks and the EPL is likely to be varied for the operational phase to take account of impacts such as operational noise.

Additionally, the POEO Act requires that the EPL Holder prepare, maintain and periodically test a Pollution Incident Response Management Plan (PIRMP).

Annual Returns are also required to be submitted by the Licence Holder for the site.

6.5.4 Water Management Act 2000

The project will temporarily require water supplies during construction for the following purposes:

- For civil works associated with dust suppression and compaction of placed materials for roads and hardstands
- Concrete batch plant operation in relation to construction of the turbine and substation footings
- Bushfire fighting resource to be maintained on site
- Water for revegetation of disturbed areas, if required
- Domestic water supplies for construction and the subsequent smaller operational staff level.

The likely quantities required for the various purposes will be outlined by the EIS together with the proposed methodology for sourcing the necessary water supplies. Subject to consent being obtained for the Project, investigations would be commenced to gain access to the necessary water supplies for the periods required.

6.6 Relevant Commonwealth Legislation

6.6.1 Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act)

The Environmental Protection and Biodiversity Conservation Act 1999 (EPBC Act) applies to developments and associated activities that have the potential to significantly impact Matters of National Environmental Significance (MNES) which are protected under the Act. Activities that have potential to result in significant impacts on MNES must be referred to the Commonwealth Department of Agriculture, Water, and the Environment (DAWE). An activity that is determined to have a significant impact on a MNES will be regarded as a 'controlled action' requiring further approval under the EPBC Act.

A bilateral agreement (Initially made 2015, amended March 2020) exists between the Commonwealth and the NSW government, that allows the Minister for the environment to rely on a specified environmental impact assessment process, by accrediting the State process and eliminating duplication. Therefore, if the Project is determined to be a controlled action the Proponent would seek an assessment under the bilateral agreement.

It is typical for most large-scale, regional, greenfield developments, to identify some MNES potentially occurring on or near the Project site, including threatened ecological communities (*TEC*) and nationally threatened species. Further consideration of these is required in the EIS through a biodiversity assessment. If during the preparation of the biodiversity assessment it becomes apparent that significant impact on any MNES is likely, a referral will be made. If the Commonwealth determine, based on the referral, that the development would have a significant impact on a MNES, the development will be declared a 'Controlled Action', and could be assessed under the NSW Bilateral Agreement with the Commonwealth.

The Project will not impact on a world heritage property, national heritage place, wetlands of international importance, Commonwealth marine areas or the Great Barrier Reef Marine Park. The Project is not a nuclear action, coal seam gas development or a large coal mining development.

6.6.2 Commonwealth Native Title Act 1993 (NT Act)

The Native Title Act 1993 recognises the rights and interests of Indigenous people to land and aims to provide for the recognition and protection of common law native title rights. Areas of land within the Project Site where native title may exist include public road reserves and other Crown land.

A review of the National Native Title Tribunal Register's Map of '*Native Title Claimant Applications and Determination Areas as per the Federal Court (31 December 2021)*' was undertaken in March 2022. There were no ongoing native title applications, determinations of native title, or Indigenous Land Use Agreements existing over the Project area. A Determined Area was shown to the south of the project area (VSD 14/2022, Wamba Wemba VC 2021(001)). As such, the Project Site is not subject to any native title claims currently. The EIS would review the status in respect of native title claims.

6.6.3 Other Commonwealth legislation

There are several other Commonwealth regulations and Acts that may be relevant to the Project and for which the Proponents may need to seek approval. These include:

- Civil Aviation Safety Regulations 1988
- Commonwealth Airports Act 1996
- National Airports Safeguarding Framework (Refers to Wind Farms and Risk to Aircraft)
- National Greenhouse and Energy Reporting Act 2007
- Tourism 2020 Strategy (Federal) – more recent update from 2011 version?
- Telecommunications Act 1997
- Tourism Strategy 2020 (Federal)

7.0 PRELIMINARY ENVIRONMENTAL IMPACT ASSESSMENT

7.1 Introduction

A preliminary environmental impact assessment has been completed to assist in identifying potential environmental matters that will require detailed assessment when preparing the EIS for the Project. The assessment is based on the Proponents prior experience in developing wind farms across Australia (including NSW) a desktop review for issues applicable to the locality, a preliminary site inspection and consultation with local Councils.

A proprietary geographic information database was developed to aid in the selection of appropriate sites for the development of a wind farm. The database was interrogated to identify potential locations from which to select the best locations. Generally, these locations had high wind resources, access to high voltage transmission lines, low population density, good transport infrastructure and no obvious limiting factors. This database includes some of the following datasets:

- Wind resource data for the whole of Australia
- Local and regional roads
- Towns and cities
- Transmission infrastructure
- Environmental layers
- Aerial photography
- Location of buildings and homesteads (identified from publicly available aerial imagery)
- Land use data sets

The Project location was identified following an in-house process that sought to identify a small number of potential projects with a high probability for success. Following this process, the Proponent engaged NGH Pty Ltd (NGH), environmental consultants, to perform an assessment of the Project area to determine if there were any significant issues that might prevent the development of the Project and produce a “key risks” and “fatal flaw” register. Key issues investigated included:

- Planning pathway, in consideration of Commonwealth, State and Local legislation
- Landscape and visual
- Noise and vibration
- Biodiversity
- Traffic and transport
- Hazards and risks
- Aboriginal Heritage
- Historical (non-Aboriginal) Heritage
- Water and soils
- Compatibility with Land uses

Following the extensive desktop investigation, NGH Pty Ltd (*NGH*) deployed a Senior Ecologist to inspect the site on 3-4 September 2020. The inspection was to validate desktop biodiversity information and obtain information regarding site disturbance, ecological and other environmental topics.

The Proponent also engaged GBD Landscape Architecture, a landscape and visual impact consultant, to undertake a preliminary landscape and visual assessment, including photography, and modelling as to inform landscape characteristics.

A range of environmental considerations identified through this preliminary process will be addressed in the forthcoming EIS. This section identifies the potential environmental impacts for the Project and proposes further assessment for the preparation of the EIS. Each of the relevant topics will be developed further following the issuing of the SEARs.

In accordance with the SSD Guidelines (2021), the level of assessment of each of the matters has been considered based on the following criteria:

Table 7-1: SSD Guideline (2021), Levels of Assessment

Level of Assessment	Explanation
Detailed	The project may result in significant impacts on the matter, including cumulative impacts
Standard	The project is unlikely to result in significant impacts on the matter, including cumulative impacts
No Further Assessment	The project will have no impact on the matter, or the impacts of the project on the matter will be so small that they are not worth considering

These are outlined, along with the relevant government plans, policies, and guidelines, in the Scoping Summary Table in (**Appendix 2**).

The level of assessment is based on an initial review and analysis of the matter and may be further adjusted during the detailed assessment phase which forms part of the EIS preparation. When determining the level of assessment, the Proponent has drawn upon their considerable experience in developing wind farms in Australia.

7.2 Biodiversity

7.2.1 Introduction

The Project is likely to have an impact, direct and indirect, on biodiversity matters, including vegetation, terrestrial (fauna, avifauna) and aquatic habitats. A desktop review of the available biodiversity data and literature relevant to the site was carried out and an initial site visit by a senior ecologist occurred in September 2020.

7.2.2 Database Searches

Biodiversity database reviews included an NSW Bionet Atlas (*Bionet*) search and generation of a report from the Commonwealth Protected Matters Search Tool (*PMST*) to 10 km. The local Plant Community Type (*PCTs*) mapping for the Project site was also reviewed.

7.2.3 Site Visit (September 2020)

To validate the desktop results, a NGH senior ecologist spent 16-hours on site during 3 and 4 September 2020:

- To verify the PCTs mapped for the site were generally correct,
- To assess the condition of vegetation, with reference to how a BAM assessment would be applied,
- To verify if Threatened Ecological Communities occur onsite, and
- To note habitat features and species of interest.

Due to the potential size of the Project and access limitations at the time, not all areas of the site could be visited during the two days on site. The results of the ground validation include:

- Updated PCT mapping: the mapped PCTs were found to be generally accurate however, some areas mapped as exotic but containing native saltbush have been updated to native vegetation PCTs.
- An indicative Threatened Ecological Communities (*TECs*) map: those PCTs associated with TECs are now mapped and represent areas which require further assessment should wind farm infrastructure impact upon them.
- Flora and fauna species list: while no targeted surveys were undertaken, two threatened species were observed on site: Major Mitchell's Cockatoo and White-fronted Chat.

7.2.4 Threatened Species

Desktop searches of the NSW Bionet Database and Protected Matters Search Tool (*PMST*) identified the following as being likely to occur within 10 kilometres of the study area:

Table 7-2: Potential Threatened Entities Onsite

Listing Type	Bionet	PMST
Threatened Ecological Community	• *Acacia melvillei* Shrubland in the Riverina and Murray-Darling Depression bioregions • *Allocasuarina luehmannii* Woodland in the Riverina and Murray-Darling Depression Bioregions • Inland Grey Box Woodland in the Riverina, NSW South Western Slopes, Cobar Peneplain, Nandewar and Brigalow Belt South Bioregions • Myall Woodland in the Darling Riverine Plains, Brigalow Belt South, Cobar Peneplain, Murray-Darling Depression, Riverina and NSW South Western Slopes bioregions • Sandhill Pine Woodland in the Riverina, Murray-Darling Depression and NSW South Western Slopes bioregions	• Buloke Woodlands of the Riverina and Murray-Darling Depression Bioregions • Grey Box (Eucalyptus microcarpa) Grassy Woodlands and Derived Native Grasslands of South-eastern Australia • Weeping Myall Woodlands
Bird	• Botaurus poiciloptilus (Australasian Bittern) • *Calidris acuminate (*Sharp-tailed Sandpiper) • Circus assimilis (Spotted Harrier) • Epthianura albifrons (White-fronted Chat) • Gallinago hardwickii (Latham's Snipe) • Gelochelidon nilotica (Gull-billed Tern) • *Haliaeetus leucogaster (*White-bellied Sea-Eagle) • *Lophochroa leadbeateri (*Major Mitchell's Cockatoo) • Oxyura australis (Blue-billed Duck) • Pedionomus torquatus (Plains-wanderer) • *Rostratula australis (*Australian Painted Snipe) • Stictonetta naevosa (Freckled Duck) • *Tringa nebularia (*Common Greenshank)	• Botaurus poiciloptilus (Australasian Bittern) • Calidris ferruginea (Curlew Sandpiper) • Falco hypoleucos (Grey Falcon) • Grantiells picta (Painted Honeyeater) • Leipoa ocellate (Malleefowl) • Numenius madagascariensis (Eastern Curlew) • Pedionomus torquatus (Plains-wanderer) • Pezoporus occidentalis (Night Parrot) • *Rostratula australis (*Australian Painted Snipe)
Fish	• None cited	• Galaxias rostratus (Flathead Galaxias)
Amphibians	• *Litoria raniformis* (Growling Grass Frog/Southern Bell Frog)	• *Litoria raniformis* (Growling Grass Frog/Southern Bell Frog)
Mammals	• None cited	• *Nyctophilus corbeni* (Corben's Long-eared Bat) • Phascolarctos cinereus (Koala)
Plants	• Brachyscome papillosa (Mossgiel Daisy) • Maireana cheelii (Chariot Wheels)	• Brachyscome papillosa (Mossgiel Daisy) • Lepidium monoplocoides (Winged Pepper-cress) • Maireana cheelii (Chariot Wheels) • Swainsona murrayana (Slender Darling-pea)
Migratory Species (Terrestrial)	• N/A	• Motacilla flava (Yellow Wagtail) • Myiagra cyanoleuca (Satin Flycatcher)

Three species are recorded within the Project Boundary (**Figure 7-1**).:

- *Maireana cheelii* (Chariot Wheels)
- *Circus assimilis* (Spotted Harrier)
- Pedionomus torquatus (Plains-wanderer)

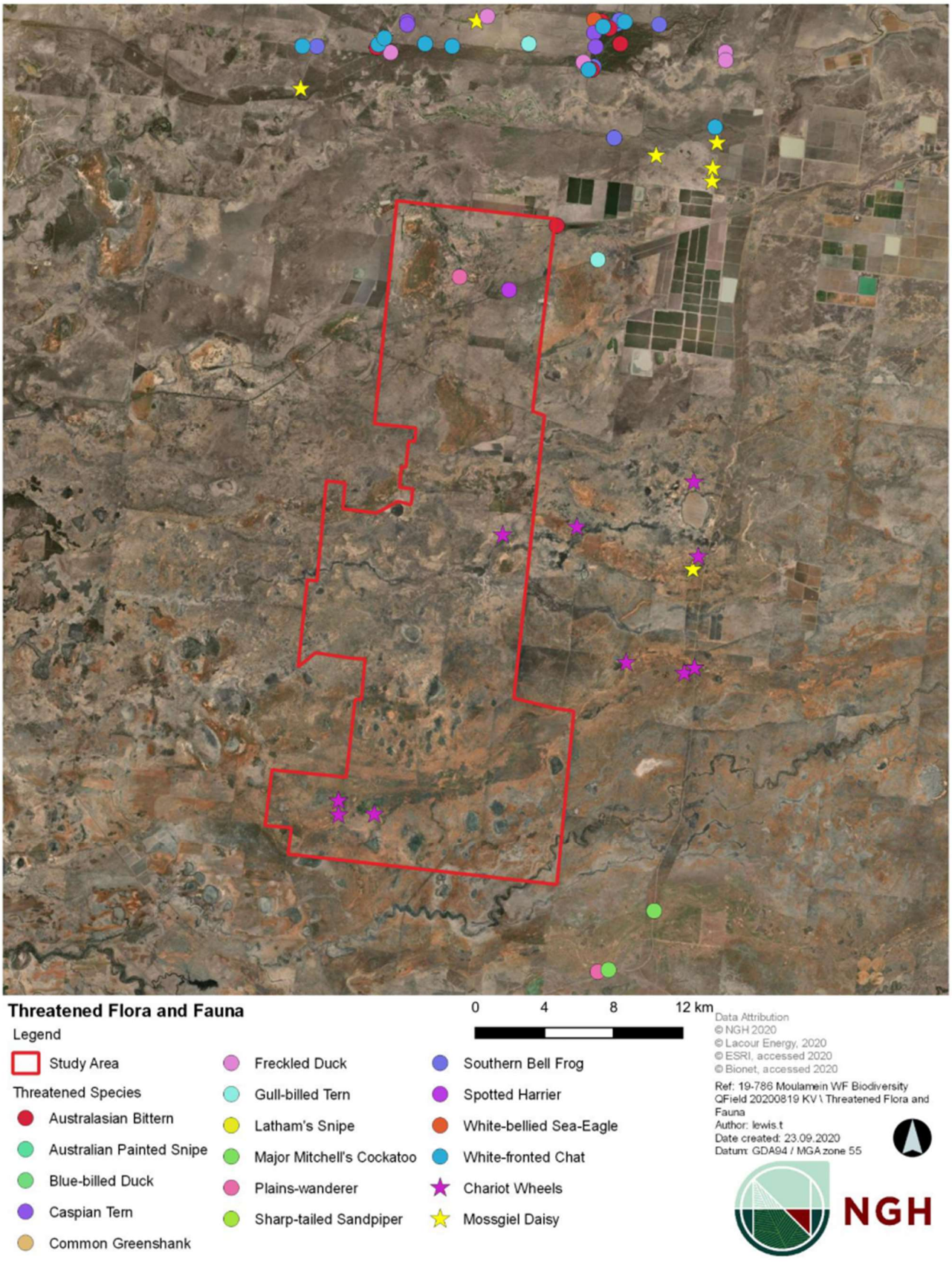

Figure 7-1: NSW Bionet, Threatened Flora and Fauna Locations

7.2.5 Vegetation Mapping

Using the *State Vegetation Type Map: Riverina Region (Vis ID 4469)*, vegetation in the study area was mapped to give an indicative overview of the Plant Community Types (*PCT*) present within the area (**Figure 7-2**, **Figure 7-3**, **Figure 7-4**). PCTs identified by this mapping, with the TECs in bold, are:

Table 7-3: Threatened entities that could be present onsite

PCT #	Discription
PCT 13	Black Box - Lignum woodland wetland of the inner floodplains in the semi-arid (warm) climate zone (mainly Riverina Bioregion and Murray Darling Depression Bioregion)
PCT 15	Black Box open woodland wetland with chenopod understorey mainly on the outer floodplains in south-western NSW (mainly Riverina Bioregion and Murray Darling Depression Bioregion)
PCT 17	Lignum shrubland wetland of the semi-arid (warm) plains (mainly Riverina Bioregion and Murray Darling Depression Bioregion)
PCT 24	Canegrass swamp tall grassland wetland of drainage depressions: lakes and pans of the inland plains (TEC)
PCT 28	White Cypress Pine open woodland of sand plains: prior streams and dunes mainly of the semi-arid (warm) climate zone (TEC)
PCT 46	Curly Windmill Grass - speargrass - wallaby grass grassland on alluvial clay and loam on the Hay Plain: Riverina Biore
PCT 57	Belah/Black Oak - Western Rosewood - Wilga woodland of central NSW including the Cobar Peneplain Bioregion
PCT 153	Black Bluebush low open shrubland of the alluvial plains and sandplains of the arid and semi-arid zones
PCT 157	Bladder Saltbush shrubland on alluvial plains in the semi-arid (warm) zone including Riverina Bioregio
PCT 159	Old Man Saltbush shrubland mainly of the semi-arid (warm) climate zone (south western NSW) (TEC)
PCT 160	Nitre Goosefoot shrubland wetland on clays of the inland floodplains (TEC)
PCT 163	Dillon Bush (Nitre Bush) shrubland of the semi-arid and arid zones (TEC)
PCT 164	Cotton Bush open shrubland of the semi-arid (warm) zone
PCT 166	Disturbed annual saltbush forbland on clay plains and inundation zones mainly of southwestern NSW
PCT 216	Black Roly Poly low open shrubland of the Riverina Bioregion and Murray Darling Depression Bioregion
PCT 236	Derived Giant Redburr low shrubland on alluvial plains of the semi-arid (warm) climate Zone
PCT 238	Permanent and semi-permanent freshwater lakes wetland of the inland slopes and plains

The vegetation mapping in this region is relatively good, but these plant community types will be validated with onsite surveys. Areas that are not mapped (shown as blank in **Figure 7-2**, **Figure 7-3** and **Figure 7-4**) are assumed to be exotic vegetation (i.e., crops or 'improved' pasture) to be verified through more extensive ground surveys.

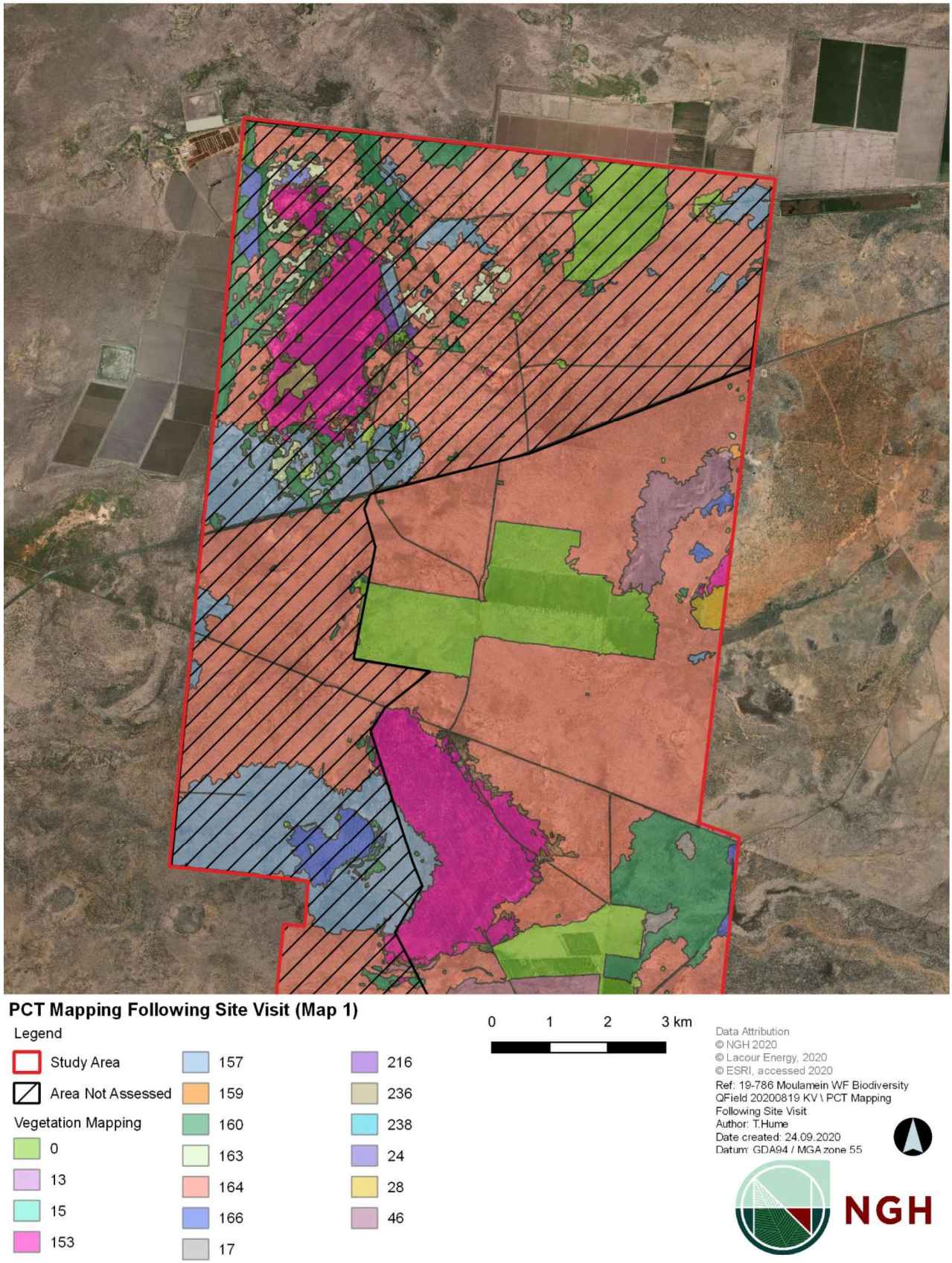

Figure 7-2: Native Vegetation Map (Northern Section)

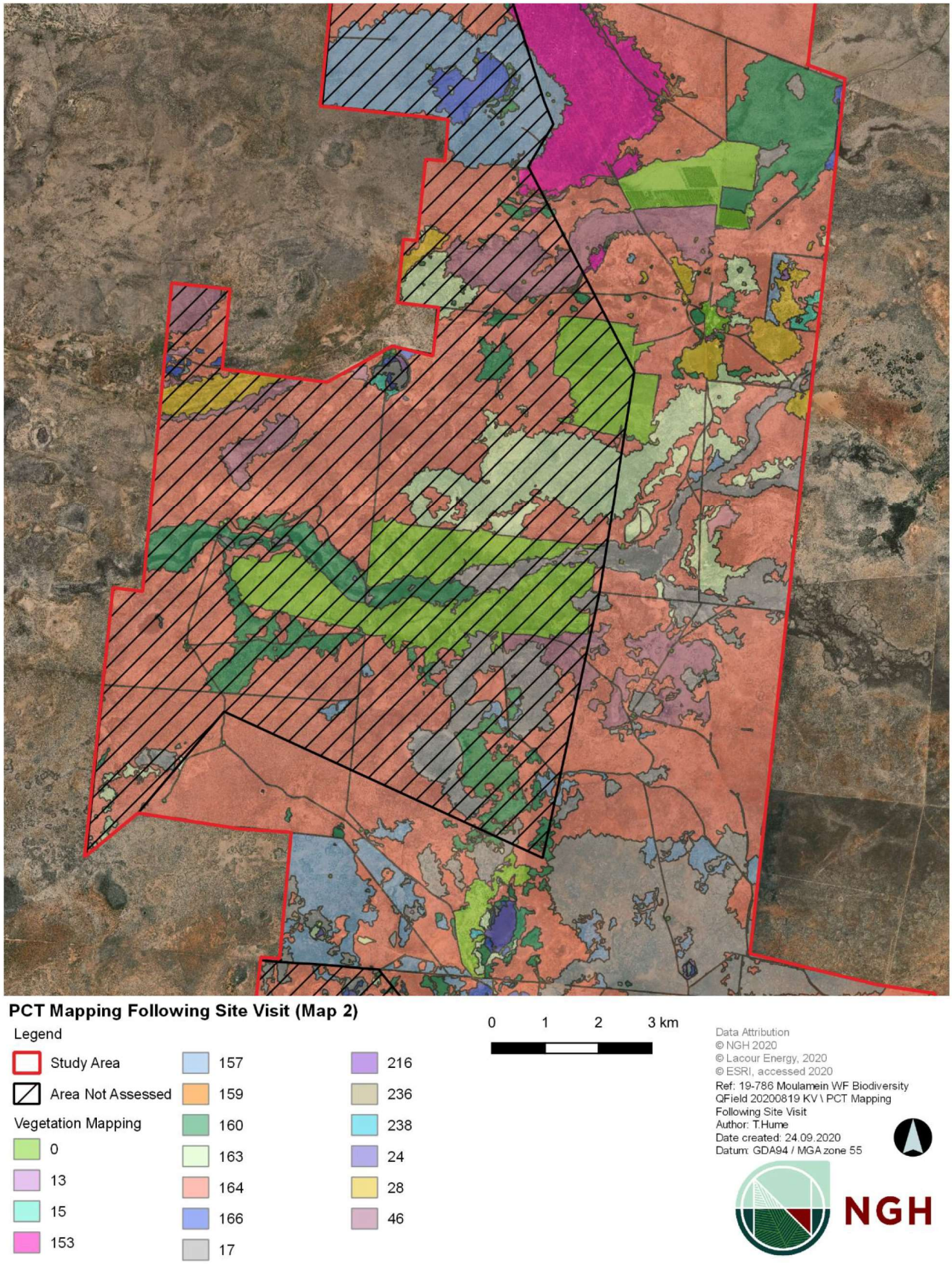

Figure 7-3: Native Vegetation Map (Central Section)

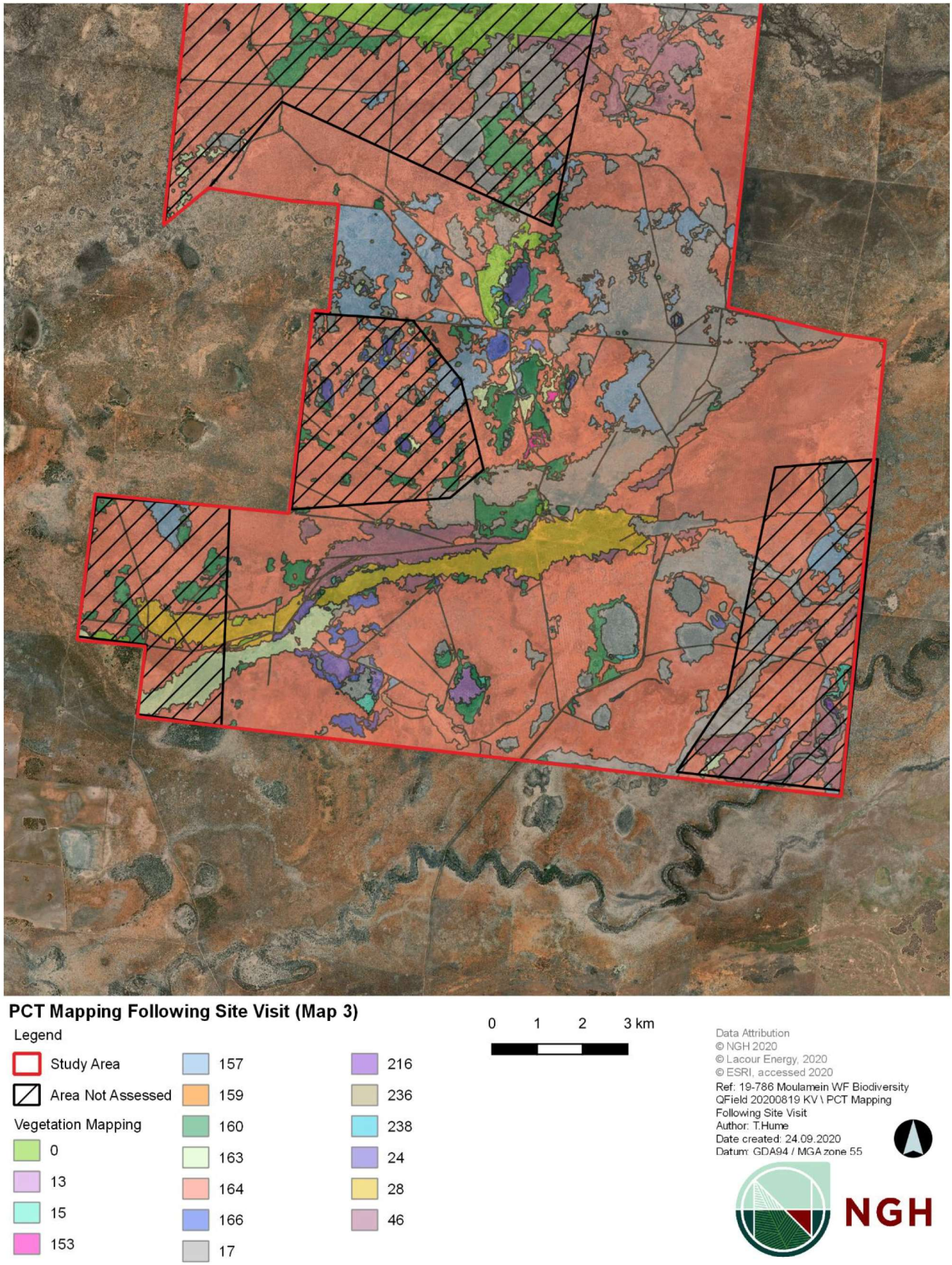

Figure 7-4: Native Vegetation Map (Southern Section)

7.2.6 Key Fish Habitat & Biodiversity Values Mapping

Abercrombie Creek and a tributary of Twelve Mile Creek that both pass through the Project site are mapped as key fish habitat per DPIs key fish habitat maps. Biodiversity values mapping was also applied across the Project area and corresponds to the riparian corridor along Abercrombie Creek (**Figure 7-5**).

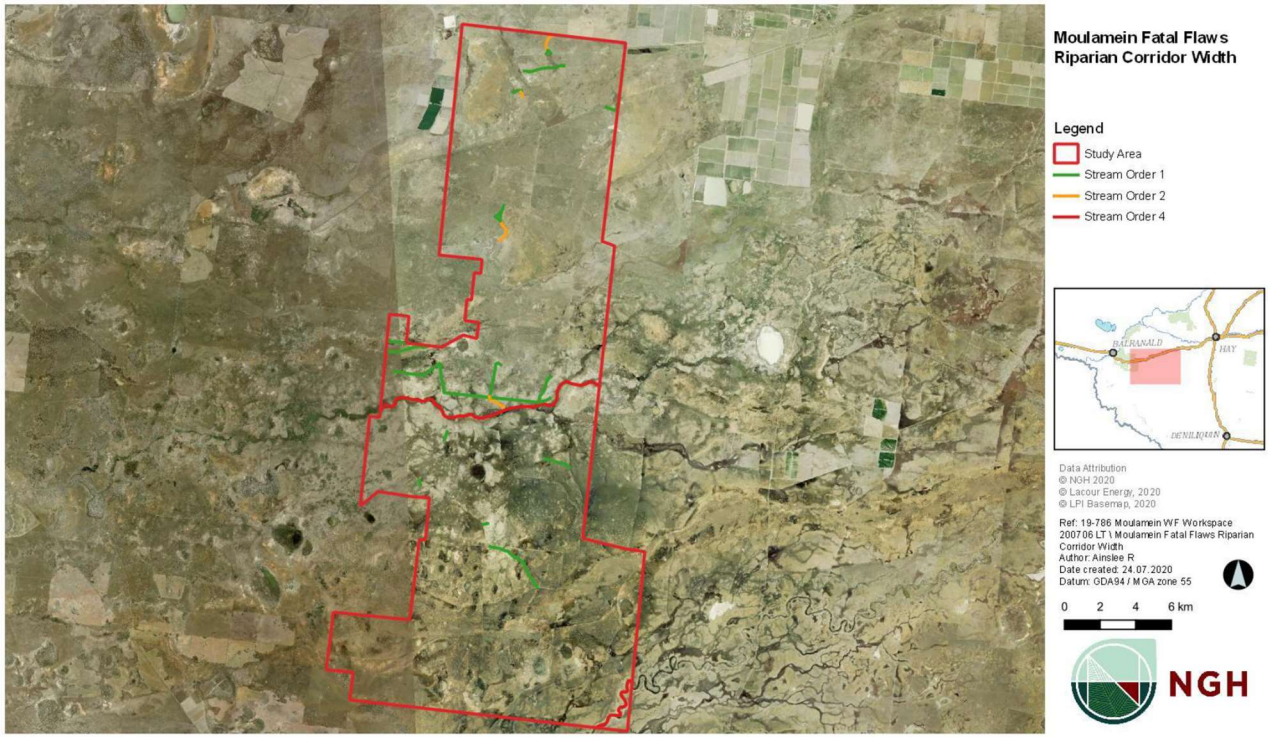

Figure 7-5: Vegetation Riparian Widths

7.2.7 Groundwater Dependent Ecosystems

A search of the Groundwater Dependent Ecosystems Atlas (Bureau of Meteorology, 2020) shows the study area has unclassified to low potential for terrestrial groundwater dependent ecosystems across much of the site, and patches of low potential for aquatic groundwater dependent ecosystems.

7.2.8 Avifauna Collision Risks

Bird and bat strikes are a key operational risk for wind farms and knowledge of the risks to avifauna needs to be well understood to enable appropriate wind farm design and controls. Comprehensive Bird Utilisation Surveys (*BUS*) will be undertaken during the EIS preparation to understand what bird and bat species are moving through the site. More detailed analysis of landscape connectivity and migration routes will also assist when considering these matters. This data will feed into the preparation of a Bird and Bat Adaptive Management Plan (*BBAMP*).

7.2.9 Serious and Irreversible Impacts

A serious and irreversible impacts (*SAII*) assessment will be undertaken for the Project area. This assessment is used to determine risks to protected threatened species, ecological communities, populations, and habitats. The concept of SAII is fundamentally about protecting threatened entities that are most at risk of extinction from potential development.

Environmental features that have been identified as having a potential Serious and irreversible impacts (*SAII*) that occur within the Project Boundary according to BAM include:

- Artesian Springs Ecological Community in the Great Artesian Basin
- Plains Wanderer (Pedionomus torquatus)

- Eastern Curlew (Numenius madagascariensis)

Further investigations will determine the potential impact on these entities, if any, and will be addressed in the EIS and Biodiversity Development Assessment Report (BDAR). This will demonstrate how the proponent proposes to avoid, minimize, and offset impacts from the proposed development, upon native vegetation or biodiversity listed under the New South Wales Biodiversity Conservation Act 2016 and the Biodiversity Regulation 2017.

7.2.10 Further Assessment

The Project is considered an SSD and will require the preparation of a BDAR, in accordance with BAM, pursuant with the BC Act. The BDAR for the Project provided as part of the EIS will demonstrate, how the development's impacts are proposed to be avoided and minimised, where possible, and offset only as a last resort. As part of the BAM process, further work will include:

- Seeking endorsement of the preliminary Land Category Assessment from Biodiversity Conservation and Science (BCS).
- Completion of vegetation mapping and floristic plot data collection (to confirm the PCTs, TECs, their vegetation integrity score, condition, and distribution)
- Targeted surveys for candidate threatened species (generated by the SEARs and BAM process)
- Iterative workshops with the Proponent to investigate options to avoid and minimise impacts
- Assessment of relevant direct, indirect, prescribed, and serious and irreversible impacts
- Offset calculations to determine the offset obligation of the final Proposal
- Offset planning, to ensure the offset obligation can be met.

7.3 Traffic and Transport

7.3.1 Introduction

The Project is located primarily in the Murray River Shire with the northern extent within the Hay Shire LGA. The Sturt Highway crosses east-west through the northern part of the Project area and forms a major arterial road between NSW and SA. There are few local roads in the vicinity of the project, most notably Maude Road which passes to the east of the project area, and Baldon Road with runs through the southeast corner of the Project (**Figure 7-6**). Dry Lake Road runs east-west between Maude Road and Baldon Road.

While the project area is relatively close to the southern border of NSW, represented by the Murray River, transport access from the south is limited by the availability of suitable bridges with adequate capacity for anticipated loads. As such, there may be no direct routes to the site from the south.

The Project is located generally as shown in Figure 7.7 and is approximately:

- 440 km north of Melbourne,
- 590 km east of Adelaide, and
- 780 km west of Sydney.

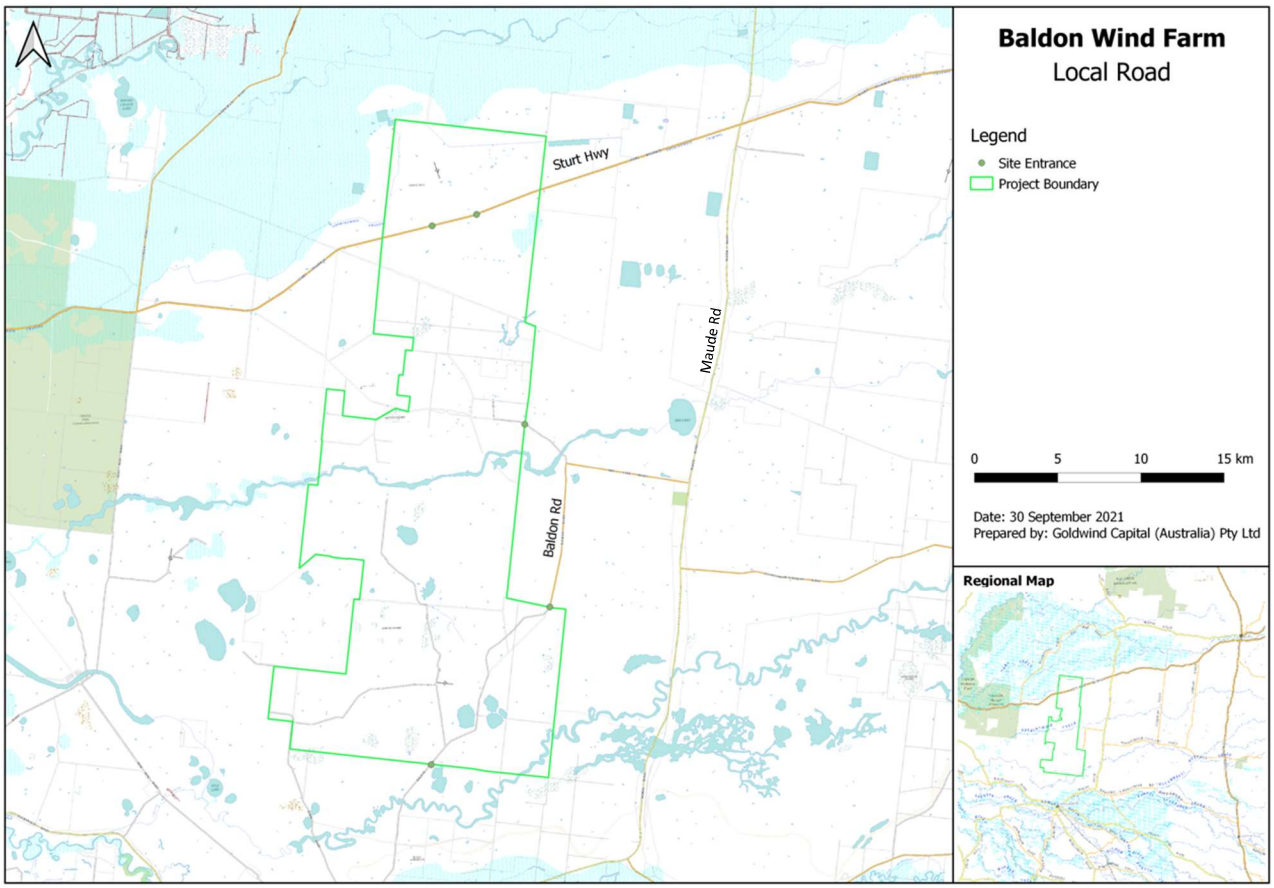

Figure 7-6: Sturt Highway and local road network

A majority of the road traffic and transport associated with a wind farm development typically occurs during the construction phases of the Project. During construction, there will be an increase in local traffic due to the large temporary workforce and deliveries of materials and components that will involve light vehicles, trucks and over-dimension vehicles moving to/from the Project area.

Once turbine deliveries commence, there will typically be a series of over-dimensional vehicles delivering wind turbine and substation components to the Project from the port of delivery. These vehicle movements are often scheduled during the night to minimise disruption to other road users. Over-mass and Over-dimensional transport will be subject to permits and generally involve escorts and sometimes police presence to ensure safe passage of the vehicles.

Once operations commence, the number of vehicles which access the Project site will be reduced to the operations and maintenance teams, various contractors and occasional cranage contractors and additional component delivery, if maintenance requires that.

7.3.2 Wind Turbine Transportation Route Options

Currently there are no Australian-based manufacturing facilities for large-scale wind turbine components (other than production of tower sections). Therefore, most wind turbine components must be brought into Australia by sea-freight and then delivered to project sites. There are some options to produce steel tower sections in Australia and these will also require delivery from manufacturing plants to projects.

Because of the large component sizes for the respective turbine components and large substation transformer(s), transportation routes need to be assessed due to over dimensional load requirements. This may involve consideration of vehicle mass relative to bridge ratings or length of vehicles and required turning radius in relation to road widths and any road-side structures that could be impacted. Vertical clearances can also be a consideration as to whether overhead lines or street lighting needs to be raised.

The entire length of potential route options needs to be assessed to determine where "pinch points" may occur due to the mass and dimension of specific components, together with the vehicle that carries them. In some instances, pinch points can be resolved through road widening, removal of street furniture, height reduction of obstacles or can be bypassed altogether by selecting an alternative route. Detailed studies are likely to need consultation with road authorities and Police.

Initial review of potential transport routes (**Figure 7-7**) has highlighted at least three potential route options Adelaide, Geelong, and Newcastle (Portland (Vic) and Wollongong may also have potential) for bringing turbine components from port to the Project site. The final route(s) for over-dimension vehicles will be identified during the preparation of the EIS and in consultation with the relevant councils and road authorities.

Figure 7-7: Location of Project relative to potential Port locations for supply to Site

The following outlines the potential route options that may be suitable for transport from Port to the site.

7.3.2.1 Port of Adelaide

Delivery of components from the Port of Adelaide (**Figure 7-8**) to site may offer the easiest route to the Project location because of the quick access to the Sturt Highway after leaving Adelaide. Potential pinch-points include the crossing of the Murray River (Blanchetown), Renmark (roundabout), Mildura (roundabouts), Euston (90 degree turns), Balranald (intersection). These will require further investigation to see if the indicated over-dimension loads can pass through with minimal road modifications, otherwise alternative routes may need to be found.

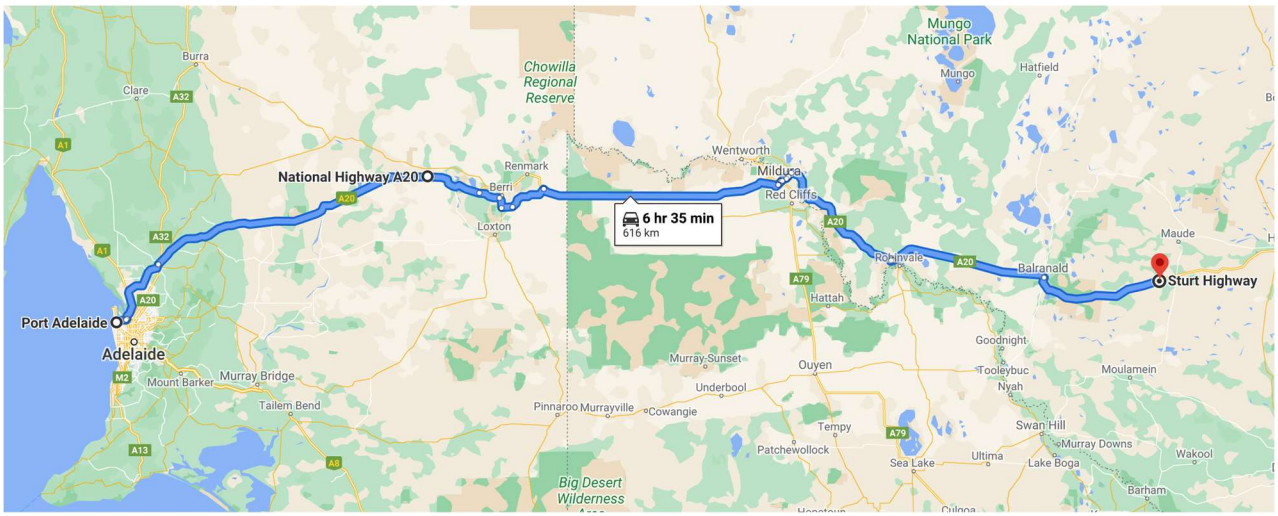

Figure 7-8: Indicative Transportation Route from Port Adelaide

7.3.2.2 Port of Newcastle

The Port of Newcastle (**Figure 7-9**) has been used by several wind farm projects for the delivery of wind turbine components, including the White Rock Wind Farm. Potential pinch points include leaving the Port and Newcastle, Wagga Wagga, Narrandera junction and Hay roundabout. Height restrictions along the route may necessitate finding an alternative route if the vehicle height exceeds 5m. Port Kembla (Wollongong) has also been used for wind turbine deliveries to the NSW Southern Tablelands but for larger turbine equipment there may be pinch points between Port Kembla and the Hume Highway.

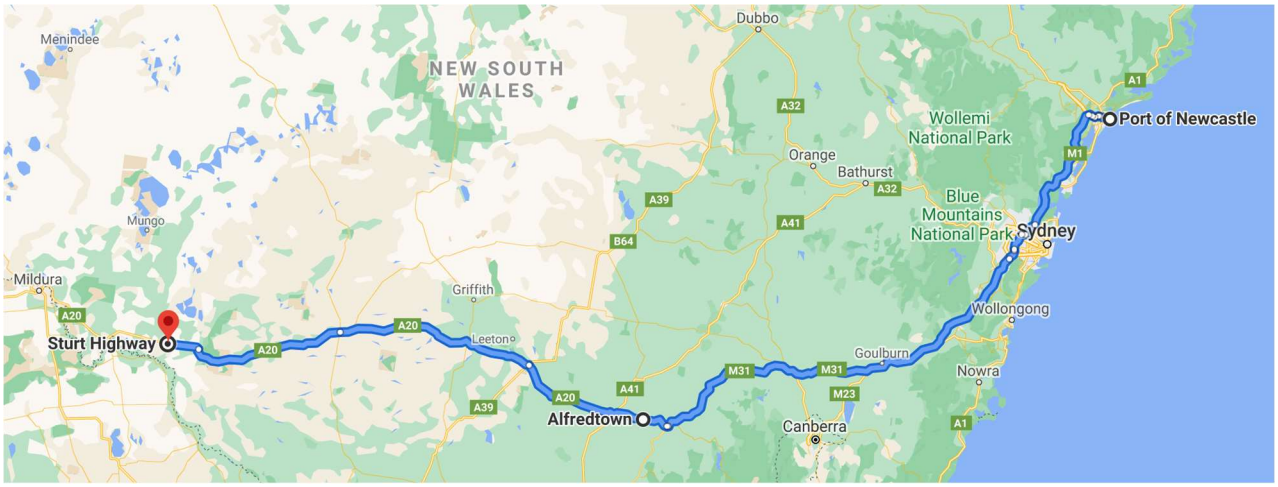

Figure 7-9: Indicative Transportation Route from Port Newcastle

7.3.2.3 Port of Geelong

The Port of Geelong (southwest of Melbourne) is another option for delivery of wind turbine components to Australia. Potential pinch-points for the transport route include Port access on the A10, M80 to M79 interchange, Lockwood (roundabout), Marong turn onto Calder Highway, Inglewood, Wedderburn, Charlton, A79/C252 roundabout, C252/C251 junction, B400 (Murray Valley Highway) to A20 (Sturt Highway) junction. Alternatively, consideration may be given to transport from Geelong via Hume Highway, if that is permissible.

The most direct transport route from Geelong (**Figure 7-10**) to the project site may be via Echuca, noting that a new bridge has been constructed across the Murray River connecting Echuca (Vic) and Moama (NSW) but availability of this route would depend on the adequacy of the new Murray River crossing and suitability and permissibility of roads to north and south of the Echuca, Murray River crossing.

Portland in western Victoria is another Port that may also have potential role in the transportation conduit between supplier and the Baldon WF project site but has not been considered at this stage.

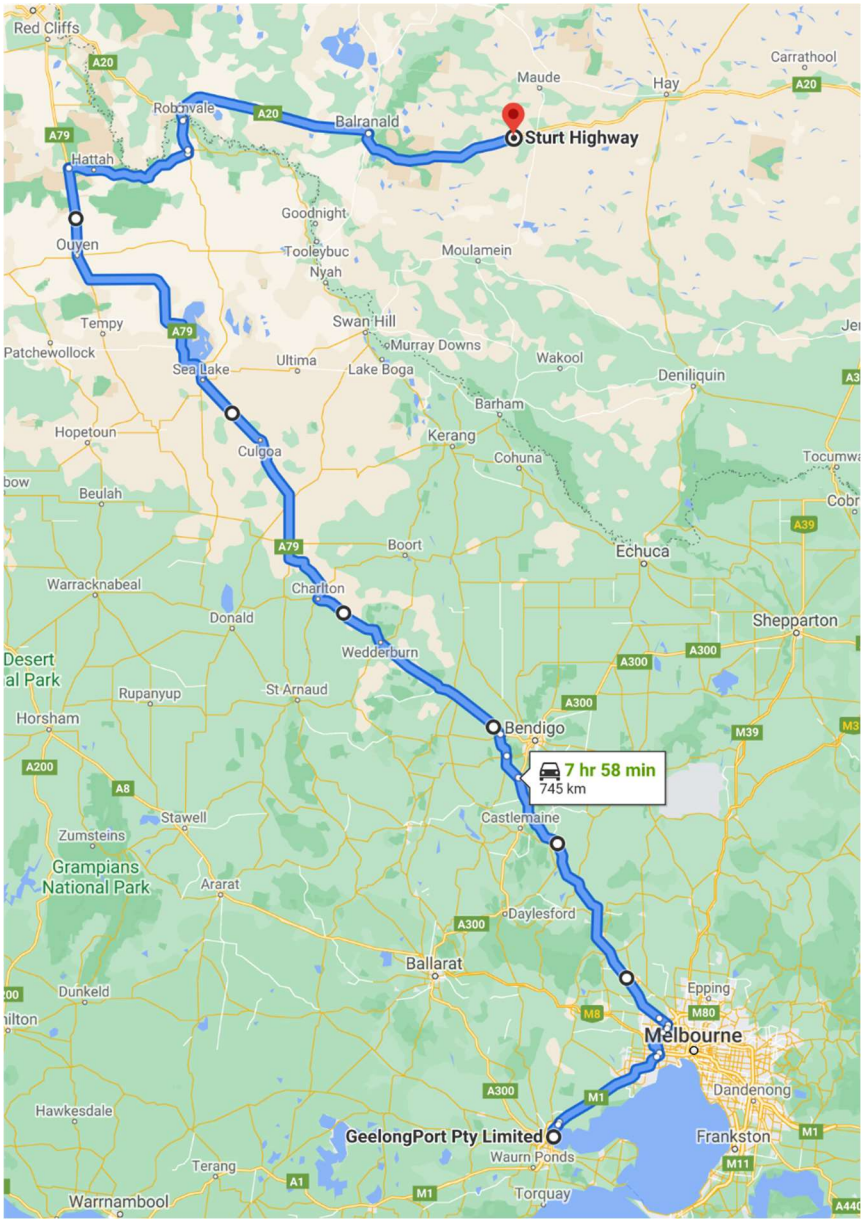

Figure 7-10: Indicative Transportation Route from Geelong, VIC

7.3.3 Site Access from Sturt Highway and local roads

Access to the Project area is possible directly from the Sturt Highway (A20), a national highway in NSW, Victoria, and South Australia or from Sturt Highway via local roads. Where the project area is accessed directly from Sturt Highway, then it could be expected that the wind farm design would incorporate a new access track running approximately north-south through the Project area with offshoots to parts of the layout from a main spinal access track and avoiding impacts on local roads that are not direct access routes.

The local roads which could provide secondary access to the site include:

- Maude Road, to the east of the project area, links Sturt Highway through to Moulamein in south, but does not cross the project area
- Dry Lake Road – to west of Maude Road, provides access into project area and connects with Baldon Road

- Baldon Road (HV and LV only) between Moulamein township in south, crosses through the southeast corner of the project area and joins Dry Lake Road in north that in turn connects to Maude Road to the east.
- Secondary site entrances would likely only be used for heavy vehicles (construction deliveries) and light vehicles and not over dimensional vehicles.

While primary access is expected to be direct from Sturt Highway to the Project Area, access between Moulamein and the southern part of the Project area is also expected to be beneficial for works in the southern part of the project area as Moulamein would represent the closest township to that part of the project and could provide services for part of the project workforce.

7.3.4 Proposed Further Assessment

A detailed Traffic and Transport Impact Assessment (*TTIA*) will form part of the project EIS to inform route option selection, requirements for road upgrades and likely traffic management measures appropriate to the Project. The scope of the TTIA will likely include, but is not limited to:

- Review of current traffic volumes based on assessments or traffic data for the routes reviewed
- Quantification of types of vehicles to access the project area for construction, operations, and decommissioning
- Inventory of materials and components to be delivered to the project
- Timing of travel, frequency of trips, hours of travel to and from site
- Maximum dimensions of over dimensional vehicles
- Assessment of capacity of the respective routes to enable to required transport
- Assessment of ongoing maintenance and traffic control measures where necessary

It will be necessary to determine the proposed transportation route(s) early so that potential impacts from road upgrades can be considered in the EIS. It is considered that road upgrades will be necessary, but these upgrades could provide improved infrastructure for the local population. Previous wind farm projects have often left local roads in a better state after construction than was the situation prior to the development.

7.4 Water and Soils

7.4.1 Water

Desktop searches do not indicate that the land is flood prone. While it is noted that the locality has low annual rainfall (approximately 300-350mm per year), the land is very flat, and drainage may be slow leaving some areas temporarily inundated. To the north and south are floodplains that form part of the Murrumbidgee and Murray drainage systems, but the project area is between them and appears less flood prone.

Land immediately adjacent the northern boundary of the project area is identified as forming part of the Lowbidgee floodplain (Uara Creek), which is however subject to periodic inundation. PCT 17 and 24 which are mapped in the study area are linked to low lying areas subject to flooding events on an intermittent basis. These flooding events have potential to create unstable, waterlogged soil, and may be associated with landscape features such as '*Gilgai*'.

The Abercrombie Creek (Strahler level 4) passes through the middle of the Project area at a slightly lower elevation than areas to the north and south of its alignment. Gunyah Swamp is located within the southern portion of the study area and has been assessed as having low potential for a groundwater dependent ecosystem (Bureau of Meteorology, 2020).

Most of the study area is located within the Lower Renmark Group aquifer, with the very northern portion overlapping into the Murray Trench aquifer.

Several groundwater boreholes are present within the study area (**Figure 7-11**). Within the study area the groundwater boreholes are used for, Irrigation wells (1), Monitoring wells (2) and Stock and domestic wells (9).

During the 3-4 September 2020 site visit, the NGH senior ecologist observed very few waterways within the subject area. There were recent rainfall events in the lead up to the site visit and in many areas no permanent water accumulation was observed. Small depressions were present, however due to the subject land typically comprising flat terrain, erosion and sediment concerns appeared to be minimal.

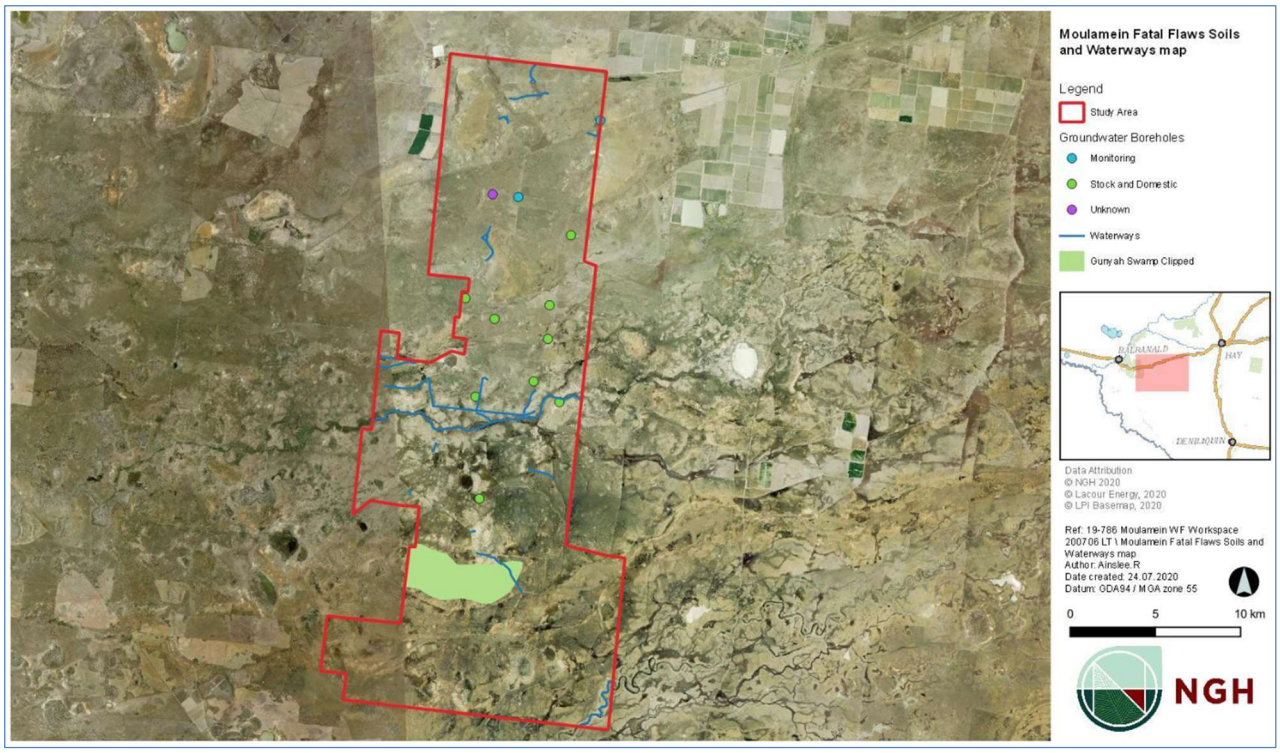

Figure 7-11: Water bodies and groundwater bores

7.4.2 Soils

The study area sits within the Shepparton Formation (DPIE, 2020). Much of the site is classified as 'unconsolidated to poorly consolidated, mottled, variegated clay, silty clay with lenses of polymictic, coarse to fine sand and gravel; partly modified by pedogenesis, includes intercalated red-brown palaeosols' (DPIE, 2020).

Soil Landscape information was not available on the eSpade database for the locality, however preliminary soil profiles of the study area were taken during the 3-4 September 2020 site visit. The soil profiles identified that erosion/land degradation at the site is moderate, with minor to severe wind erosion and minor scald erosion. No salting was evident in any of the soil profiles. Most profiles identified the site as being well drained with moderate runoff.

No Biophysical Strategic Agricultural *Land (BSAL)* occurs within the study area.

7.4.3 Proposed Further Assessment

To inform the Proponent and aid in infrastructure design during the development of the EIS, it is suggested that further studies on hydrology, geotechnical and additional soil surveys may be undertaken. These studies would apply to the Project's soil and water management, erosion and sediment control and the design of the Project, ensuring that adequate attention was given to:

- Inundation avoidance areas (where practicable),
- Site access points,
- Internal access routes,
- Wind turbine placement and foundation designs,
- Substation pads and/or foundations designs,
- Electrical reticulation network and layouts; and

- Operations and maintenance compound locations.
- Internal access routes and drainage design,
- Foundation design of wind turbines; and
- Locations for underground cabling.

Due to the natural topography of the Project, the proposed infrastructure, and the ability to manage soils during construction and operations, limited specialist investigations are proposed at the EIS stage. However, the utility of soil assessments to validate existing mapping and inform the design of the Project will be considered.

7.4.4 Local Weather Data

Regional weather changes may indicate a shift in rainfall and temperature over the past century as indicated by historical data for the Swan Hill Post Office and the Swan Hill Aerodrome (*Source: Bureau of Meteorology*). Summary data shows differences is max temperature and rainfall in **Table 7-4**.

Table 7-4: Regional Temperature and Rainfall Values

Swan Hill Station	BOM ID	Period	Mean Annual		Mean Annual 3pm	
			Max Temp °C	Rainfall mm	Temp °C	RH (%)
Post Office	077042	1899 – 1996	23.0		21.6	43
Post Office	077042	1884 – 1996		349.0		
Aerodrome	077094	1996 – 2021	24.0	301.0	22.4	36
Change			+1.0	-48	+1.8	-7%

Table 7-5 is a summary of monthly climate statistical data from the BOM Moulamein Post Office Station, 75046:

Table 7-5: BOM Moulamein Post Office Station, 75046 – Monthly Climatic Statistical Data

Parameter	Period of data	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Rainfall-Mean	1888 - 2021	23.7	23.9	25.9	25.5	34	33	31	33.6	31.2	33.5	27.3	30.3	353.8
Rainfall-Lowest	1888 - 2021	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	118.9
Rainfall-Highest	1888 - 2021	180.8	151.1	154.2	122.4	110.4	160.3	103.3	123.7	111.7	114.9	145.9	190.2	762.4
Temp - Mean Min (Lowest)	1971-1975	13.2	15.1	12.2	9.1	6.6	2.7	3.0	3.2	5.5	8.2	11.0	12.6	9.8
Temp - Mean Max (Highest)	1971-1975	33.9	32.2	29.9	24.8	20.7	17.1	18.3	17.7	22.4	24.8	27.9	32.5	24.3
Temp Highest	1971-1975	43.1	41.1	38.1	33.8	27.7	22.7	21.4	21.7	29.4	32.3	41.4	43.1	43.1

Additionally, historical weather records from the Keri Keri Weather Station (**Table 7-6**), which is approximately 12 km to the west of the Project, show a mean maximum of >30°C in January to a mean minimum of <4°C in July with an average annual rainfall of approximately is 324 mm spread over approximately 63 rain days per year (Elders Weather).

Table 7-6: Keri Keri Long-Term Averages

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
Mean Max (°C)	33.3	32.3	28.8	24.1	19.5	16.3	15.7	17.6	20.8	24.5	27.9	30.9	24.4
Mean Min (°C)	17.2	16.9	13.8	9.9	6.9	4.6	3.9	4.7	7.1	9.8	12.9	14.9	10.2
Mean Rain (mm)	22.6	24.7	22	23.9	31.1	29.2	26.1	29.4	28.9	30.7	29	25.3	324.4
Mean Rain Days	3.1	2.9	3.4	4	6.2	7.6	8	7.9	6.6	5.8	4.6	3.7	63.9

7.5 Landscape and Visual Impact

7.5.1 Introduction

A preliminary landscape and visual impact assessment (*LVIA*) has been prepared for the Project, as required by the New South Wales Government, DPE and to meet the objectives of the NSW Government - *Wind Energy: Visual Assessment Bulletin – for State Significant Wind Energy Development* (DP&E, 2016), dated December 2016 (*Visual Bulletin*). The LVIA has been attached to this Report as **Appendix 3**.

The LVIA has been prepared to consider a layout of wind turbines with a maximum tip height of 300 metres (from base of tower to tip of blade at vertical position). The Wind Turbine layout has been subject to several iterations and should be considered as a draft layout for the purposes of the LVIA. The LVIA has not considered the location or extent of some ancillary infrastructure commonly associated with wind farm developments, including electrical infrastructure and access tracks. Ancillary infrastructure items will be detailed and included in the landscape and visual impact assessment of the EIS.

The Visual Bulletin requires consideration of dwellings and key public viewpoints within a defined study area. The study area for the LVIA has been defined as an area that is at least 8km from the closest wind turbine for the Magnitude Tool assessment (**Appendix 3**, *Section 6*) and the application of the Multiple Wind Turbine Tool (**Appendix 3**, *Section 7*). A small number of locations beyond 8 km have also been added. These include dwellings within urban localities, road corridors as well as more distant lookouts and campsites in National Parks.

The Magnitude Tool study area within 4 km (below the black line of **Figure 7-12**) of the wind turbines did not identify any key public viewpoints (e.g. dedicated lookouts, public spaces, recreational areas etc.), and accordingly the preliminary analysis has focused on residential dwellings between the black and blue threshold lines.

7.5.2 Visual Magnitude

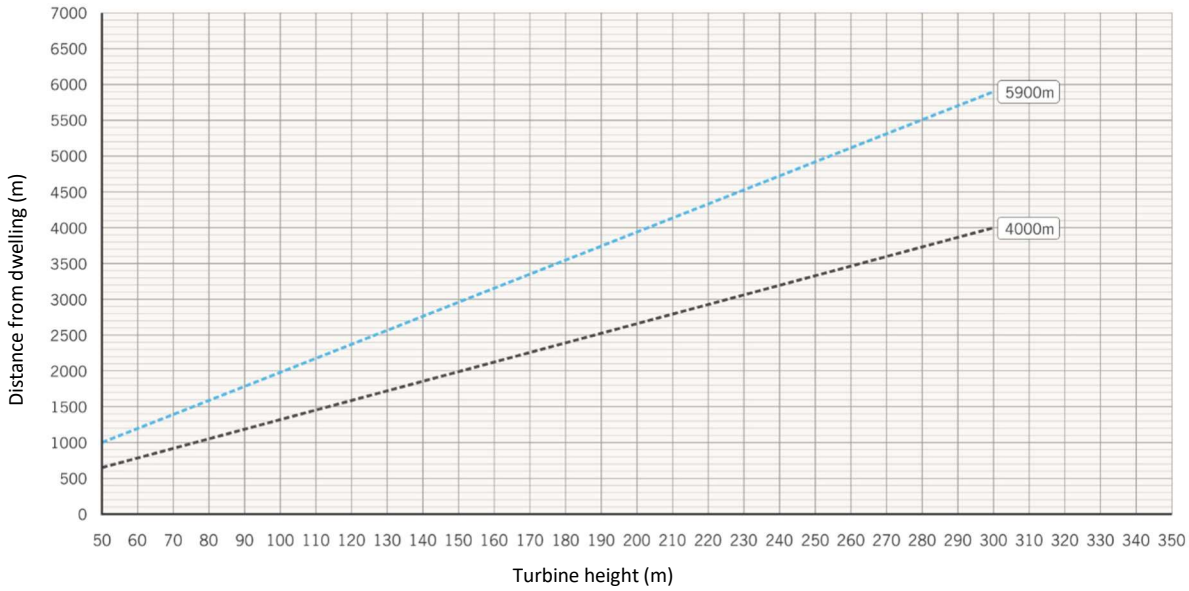

Figure 7-12: Visual Impact thresholds (NSW Wind Energy: Visual Assessment bulletin)

Dwellings have been identified and mapped and their presence will be used to inform the final design of the wind farm (**Figure 7-13**). The LVIA also illustrates dwellings located to 8km from the wind turbines and considers them under the multiple wind turbine tool analysis.

7.5.3 Preliminary Assessment Tool – Multiple Wind Turbines

This Preliminary LVIA has identified 12 individual representative view locations (**Figure 7-13**) which contain single or multiple viewpoints to 8km from the wind turbines and incorporated multiple residential dwellings into a single view

location where dwellings occur within a 500m radius of each other. The LIVA considers that views from these locations would be similar or identical in most cases.

Table 7-7 summarises the results of the multiple wind turbine tool analysis. The results include the identification of non-involved residential dwellings and key public view locations within 8km of the wind turbines, the distance to the closest wind turbine (and wind turbine ID), the number of 60° sectors the wind turbines occur within out to 8km from the view location, and the number of wind turbines visible within three or more 60° sectors out to 8km from the view location.

Table 7-7: Multiple Wind Turbine Analysis

Location ID	Distance (km) from dwelling to closest WTG (and WTG ID)	Number of 60°sectors with WTG up to 8km from dwelling	Number of visible WTGs within 3 or more 60°sectors up to 8km from dwelling
R07	5.00km (T7)	1	
R24	5.00km (T138)	1	
R13	5.01km (T21)	2	
R21	5.03km (T121)	3	10
R15	5.3km (T38)	3	20
R12	5.70km (R48)	2	
R05c (R05a and R05b)	5.83km (T3)	2	
R04a (R04b)	6.20 (T3)	2	
R20a (R20b)	6.40 (T88)	1	
Moulamein township	13.00km (T159)	0	
Sturt Highway (rest area east)	1.38km(T7)	3	16
Sturt Highway (rest area west)	10.85km (T31)	0	

Of the 12 representative dwelling view locations:

- 2 are predicted to have no views toward wind turbines
- 7 are predicted to have views toward wind turbines in either 1 or 2 of the 60° sectors and
- 3 are predicted to have views towards wind turbines within 3 or more of the 60° sectors.

Further assessment and justification for placement of turbines in multiple sectors will be detailed in the EIS, along with a description of any mitigation and management measures being employed.

7.5.4 Consultation

To support the Projects early engagement with the community, several figures from the LVIA which outlined landscape characteristics where used. These figures were used during the community drop-in sessions and one-on-one meetings to elicit responses and feedback about the Project from the community.

The preliminary landscape analysis identified specific landscape features and lookout points, including:

- Saltbush plains
- Baldon Road
- Edward River
- Moulamein lake
- Moulamein township (heritage value)
- Moulamein heritage village
- Woolsheds and Court House
- Edward River gardens

Each landscape area was photographed and described for the purposes of the broader project community consultation and stakeholder engagement (**Appendix 3,** *Figure 5, Figure 6, and Figure 7*). These areas and landscape elements will be considered in an assessment of visual impact during the development of the EIS.

7.5.5 Proposed Further Assessment

Further assessment and justification for the placement of wind turbines, substation, BESS and other related infrastructure will be detailed in the EIS along with mitigation or management options, if required, for individual receivers. A detailed Landscape and Visual Impact Assessment which will address the Visual Bulletin Stage 2 requirements will be commissioned as part of the EIS and will address the:

- Assessment of each sensitive receiver
- Determination of potential visual impacts on sensitive receivers,
- Mitigation methods to reduce potential impacts,
- Identification of any additional key features surrounding the Project,
- Identification of important viewpoints valued to the community,
- Determination of the Projects zone of influence
- Graphic representations of the Project using GIS and photomontages
- Assessment against the objectives outlined in the Visual Bulletin

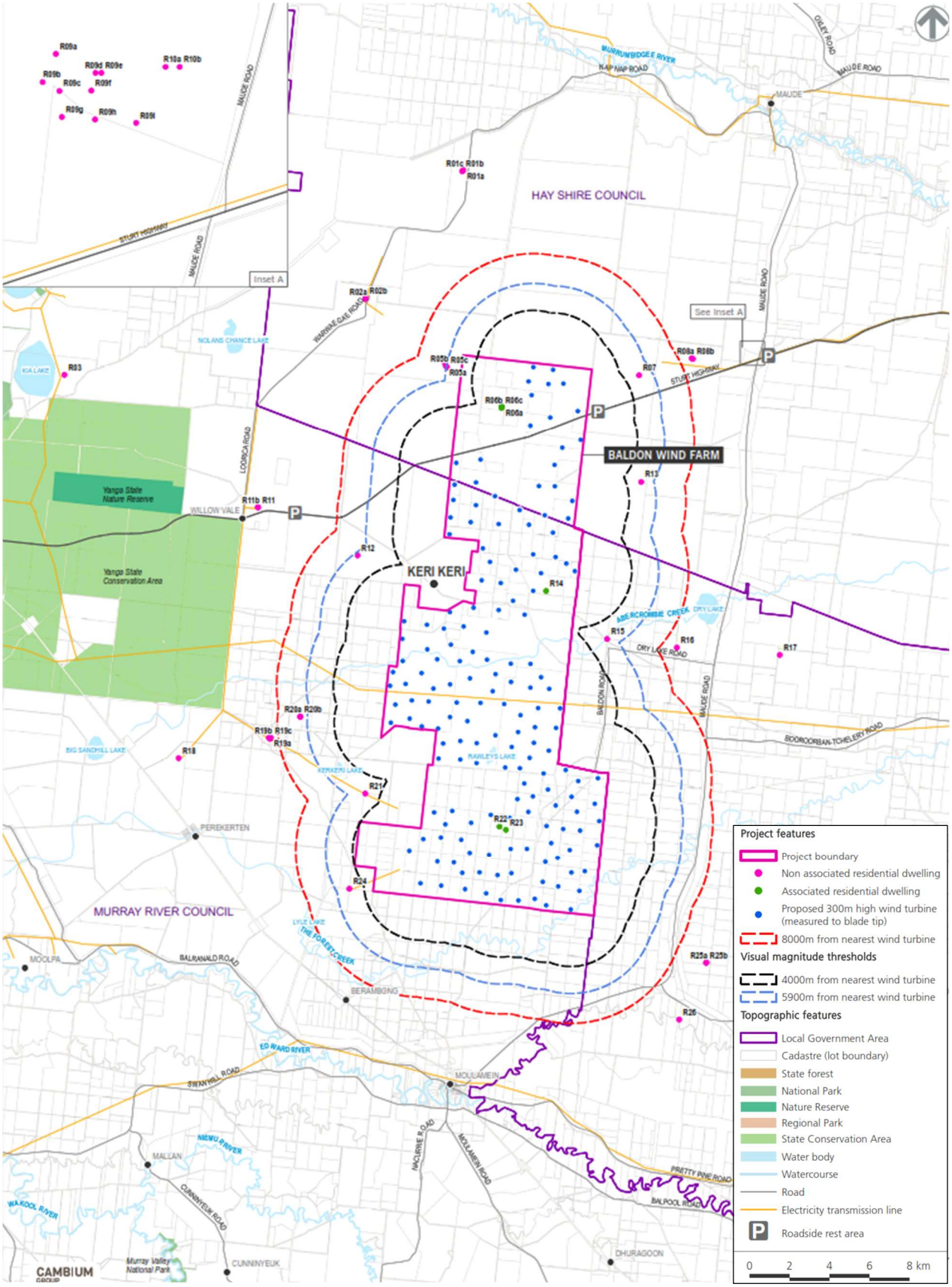

Figure 7-13: Dwelling Locations, Visual magnitude thresholds

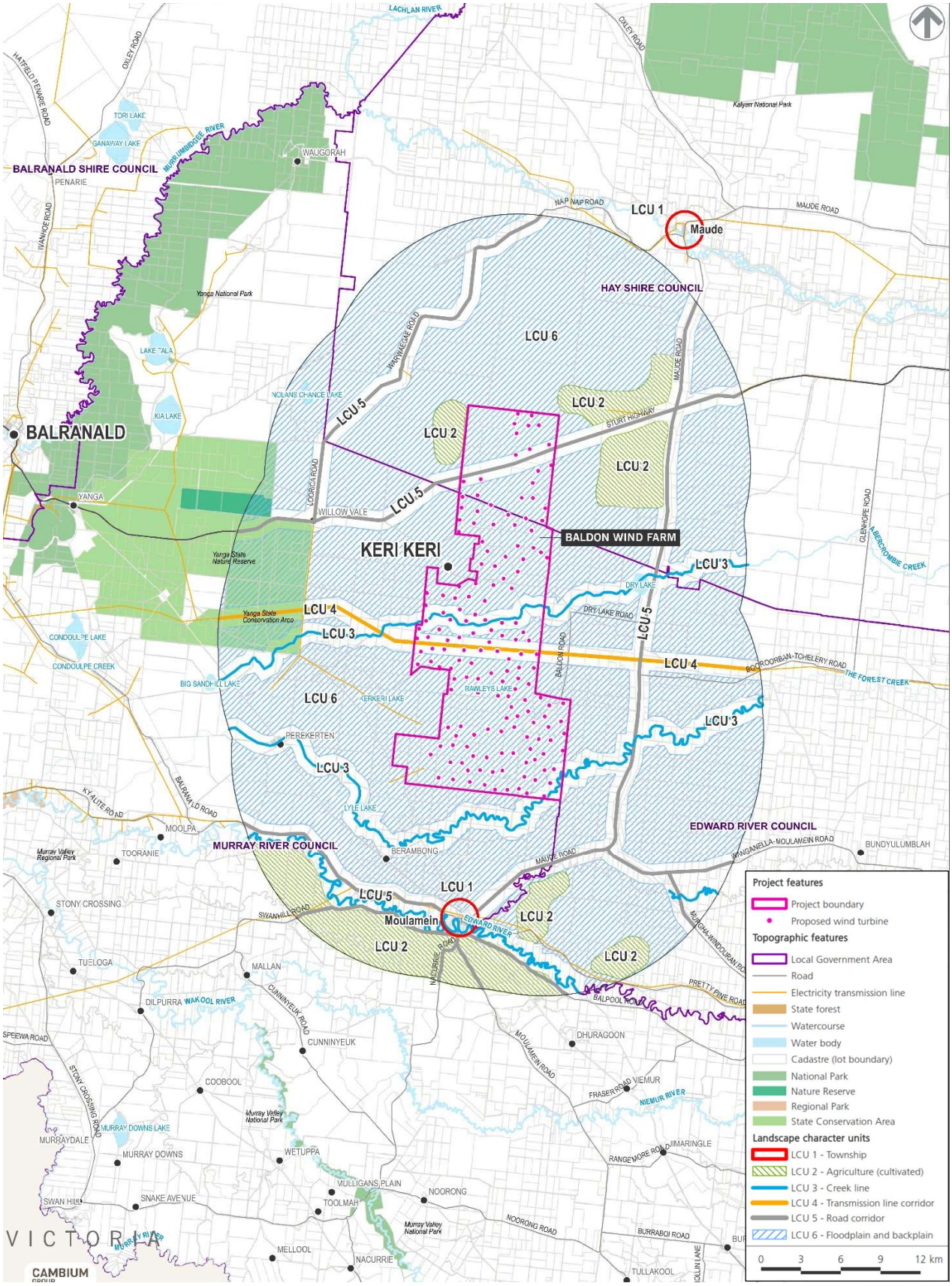

Figure 7-14: Scenic Quality Assessment, Landscape Character Areas

7.6 Heritage

7.6.1 Aboriginal Cultural Heritage

Aboriginal heritage sites are protected under the *National Parks and Wildlife Act 1974* (NP&W Act), being an offence to disturb or damage sites without consent. Wind farm developments have the potential to impact Aboriginal heritage sites through:

- Ground Disturbance: access track construction, underground cabling, foundation and hardstand construction, earthworks, and temporary construction facilities
- Cultural Heritage Landscape Modification: permanent operational facilities, wind turbines

Physical activities have the potential to disturb surface and sub-surface heritage items, whilst modifications to the landscape by the introduction of wind turbines and associated infrastructure can affect the cultural/spiritual heritage landscape character.

7.6.1.1 Preliminary Assessment

A desktop search of the Aboriginal Heritage Information Management System (*AHIMS*) database and relevant registers was carried out using a 10 km buffer to the Project Boundary. The search identified 37 sites (**Figure 7-15**), of which, nine are within the Project Boundary. These are primarily located adjacent to Abercrombie Creek and Abercrombie Channel.

A pedestrian on-site walkover survey undertaken by a qualified archaeologist and RAPs to identify and record potential heritage sites will be required. All Aboriginal cultural heritage sites recorded during the surveys will be registered with AHIMS.

Site types within the project area include six areas identified as “burials”, two sites listed as “burial; earth mound; hearth”, and one site listed as “burial; earth mound; hearth; artefact”.

Consultation with the Balranald, Hay and Wamba Wamba Local Aboriginal Land Councils (*LALCs*) has commenced, and will continued during the development of the EIS as outlined in section 7.6.2 and any other requirements that are identified by the SEARs.

7.6.2 Proposed Further Assessment

An Aboriginal Cultural Heritage Assessment (*ACHA*) and Archaeological Assessment will be required as part of the EIS preparation, including consultation with Aboriginal Community stakeholders. Activities related to the Aboriginal Cultural Heritage Assessment will be carried out in accordance with the following guidelines:

- Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010 (DECCW, 2010)
- Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW (OEH, 2011)
- Code of Practice for Archaeological Investigations of Aboriginal Objects in NSW (DECCW, 2010)

Anticipated timing associated with an Aboriginal Cultural Heritage Assessment includes, and involves the following steps:

- Registered Aboriginal Parties RAPs are identified via advertising and BCD input. This process will be done in parallel with broader consultation activities
- The detailed heritage assessment, once commenced, will allow the RAPs the appropriate time to comment on assessment methodology, and
- The RAPs must be allowed a set period to review and comment on the draft assessment

These assessments will form the basis for developing appropriate management and mitigation measures, with input from RAPs, for heritage sites or areas that may be directly or indirectly affected by the construction of the Project.

Based on findings, it may be necessary to modify the Project design depending on the type of heritage items discovered.

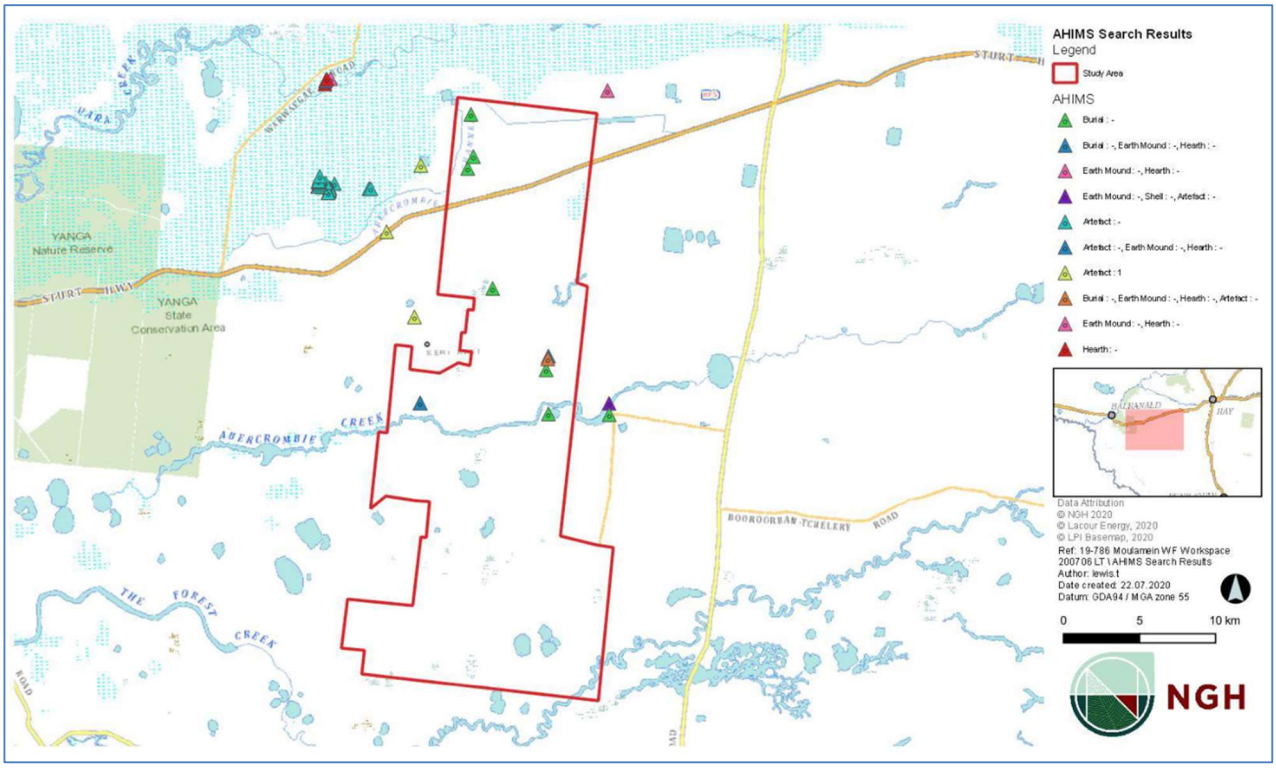

Figure 7-15: AHIMS database results

7.6.3 Historic Heritage

Desktop search of the relevant historic heritage registers including the Australian Heritage Database, State Heritage Inventory and Section 170 registers, as well as LEP maps, has identified no listed historic heritage items within 50 kilometres of the Project.

There is some potential for unlisted structures or archaeological sites to be present, specifically farm or water infrastructure related items such as house sites, sheds, and regulators/weirs.

Historic heritage is considered a low constraint for this site. Where unlisted items were identified during site inspections, these would need to be assessed for significance in accordance with *Assessing Heritage Significance* (Heritage Office & DUAP 2001) and *Statements of Heritage Impact* (Heritage Office 2002), however items of high significance are highly unlikely.

7.7 Noise Amenity

The Proponent conducted a preliminary noise impact assessment (PNIA) for the Report. The assessment was conducted in accordance with the *NSW Wind Energy: Noise Assessment Bulletin 2016* (NSW Government 2016) (*Noise Bulletin*) and subsequently the *2009 South Australian document Wind farms – environmental noise guidelines (SA 2009)*.

The key requirements of the bulletin are set out in **Table 7-8**.

Table 7-8: Noise assessment bulletin requirements for wind

Stage of Process	Outline of assessment provided
PEA (Scoping Report) requesting SEARs	• Indicative noise impact assessment of noise levels expected at all receivers. • Early indicative noise predictions using simple modelling techniques and conservative assumptions. • This can be a desktop assessment.

EIS (Environmental Impact Statement)	• The model used to predict the wind energy project noise levels and input assumptions and factors used in the model - any modelling and predictions which incorporate noise management mode or sector management must be reported separately. • Background noise measurement locations including time and duration of the background noise monitoring program. • Wind speed monitoring locations within the project area, heights above ground and graphical correlation plot of hub height wind speed versus background noise level data; a summary of the environmental noise criteria for the project at each integer wind speed based on the above correlation. • Make and model of the representative wind turbine(s) along with the positions of the wind turbines. • Predicted noise levels at the closest non-associated dwellings to the wind energy project at each integer wind speed. • A comparison of the predicted noise levels against the criterion at each integer wind speed for the closest non-associated dwellings to the wind energy project. • Modifications or operating strategy that would be employed to address any unforeseen non-compliances. The error margins of the noise model used should be considered in developing such modifications or strategies.

The study area consisted of seven sensitive receivers as shown in **Figure 7-16**, within 5km of the study area.

7.7.1 Methodology

The Proponent conducted the assessment of predicted operational noise of the Project using industry accepted software, OpenWind. The assessment was conducted in accordance with the Noise Bulletin and utilised the preliminary layout in **Figure 1-3**. The largest turbine the Proponent is currently considering for the Project was modelled for maximum sound power levels with "worst-case" noise scenarios.

Indicative noise predictions where then compared to the Noise Bulletins, 35dBa for non-participating residences.

The following assumptions were considered during the modelling:

- Locations of wind turbines identified in **Figure 1-3**
- Locations associated and non-associated residential houses (**Figure 7-16**)
- Noise Calculation Model: ISO 9613-2 General
- Wind Speeds: 6.0 to 10.0 m/s
- Wind Turbine: GW165/5.6 operating in Mode 0
- Sound Pressure Level at WTG: 109.3 dBA LwA

7.7.2 Preliminary Assessment Findings

Based on the preliminary modelling of the Project and in consideration to the Noise Bulletins criteria of 35dBa, it is predicted that no non-participating residences (sensitive receivers) are located within the predicted 35dBa noise contour.

Receiver locations and noise contour extents have been mapped within **Figure 7-16**.

7.7.3 Proposed Further Assessment

Further studies and consultation with stakeholders will address noise issues as the development of the project continues. A Noise Impact Assessment (*NIA*) will be developed as part of the EIS and will incorporate the final wind turbine model to be used and be based on the likely noise specification(s) for the potential turbine(s) for the Project.

The NIA for the EIS will build on the information outlined in the PNIA and consider factors such as:

- Background noise survey,

- Noise modelling for construction and operational activities,
- Road traffic noise during both construction and operations,
- Vibration and blasting sensitive receivers (if any),
- Cumulative noise impacts (if any); and
- Possible mitigation and management measures.

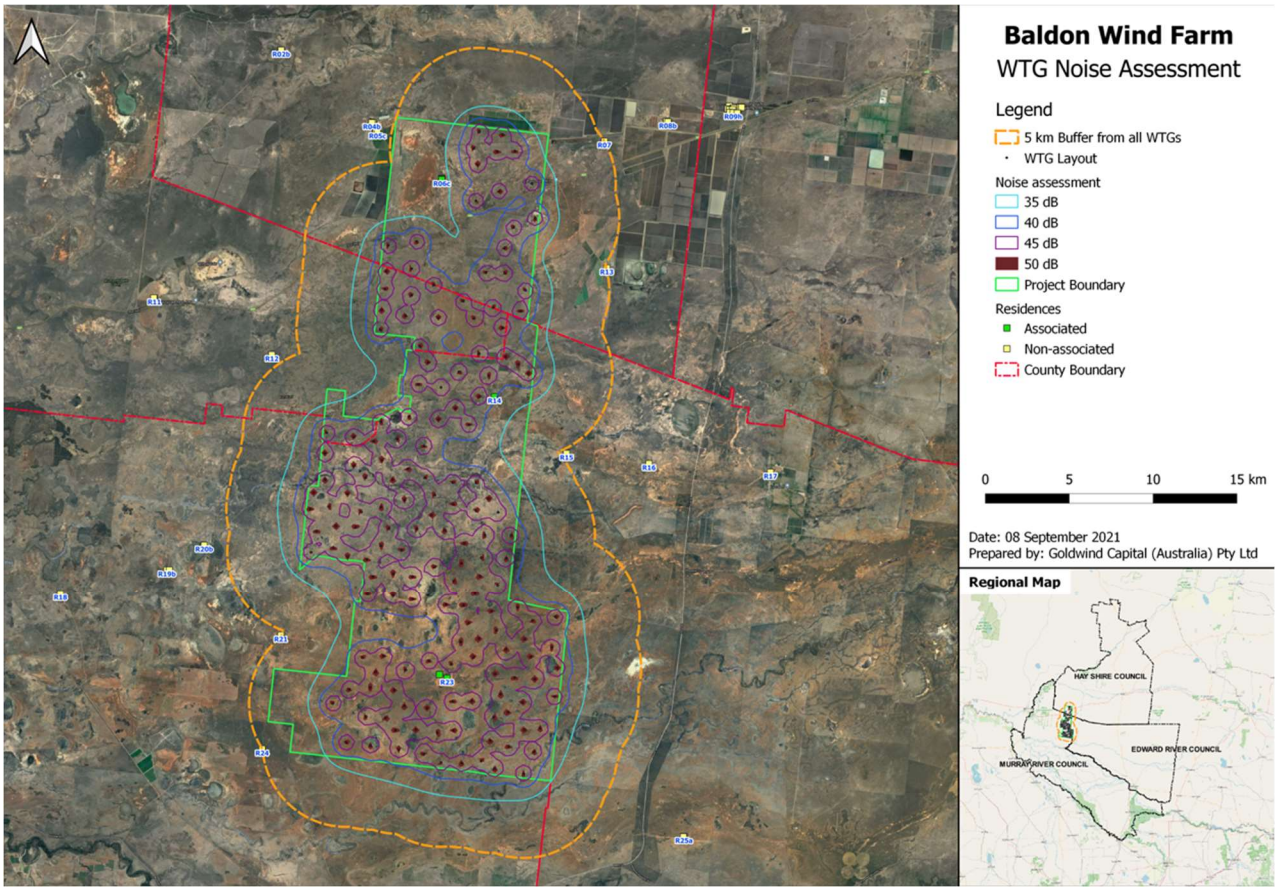

Figure 7-16: Preliminary noise assessment

7.8 Land Use Compatibility

The Project site is comprised of flat agricultural land, with minimal elevation change. The owner of the land primarily uses for grazing sheep, and other supporting agricultural practises. The Project boundary is zoned as RU1 Primary Production under the Hay, Wakool and Conargo LEPs.

There are no known mineral occurrences within the study area, with only a few existing resource deposits within the locality - namely 'construction materials' and 'industrial materials.

Existing land uses in the study area, according to the NSW Land Use data layer (DPIE, 2017), have been mapped in **Figure 7-17**.

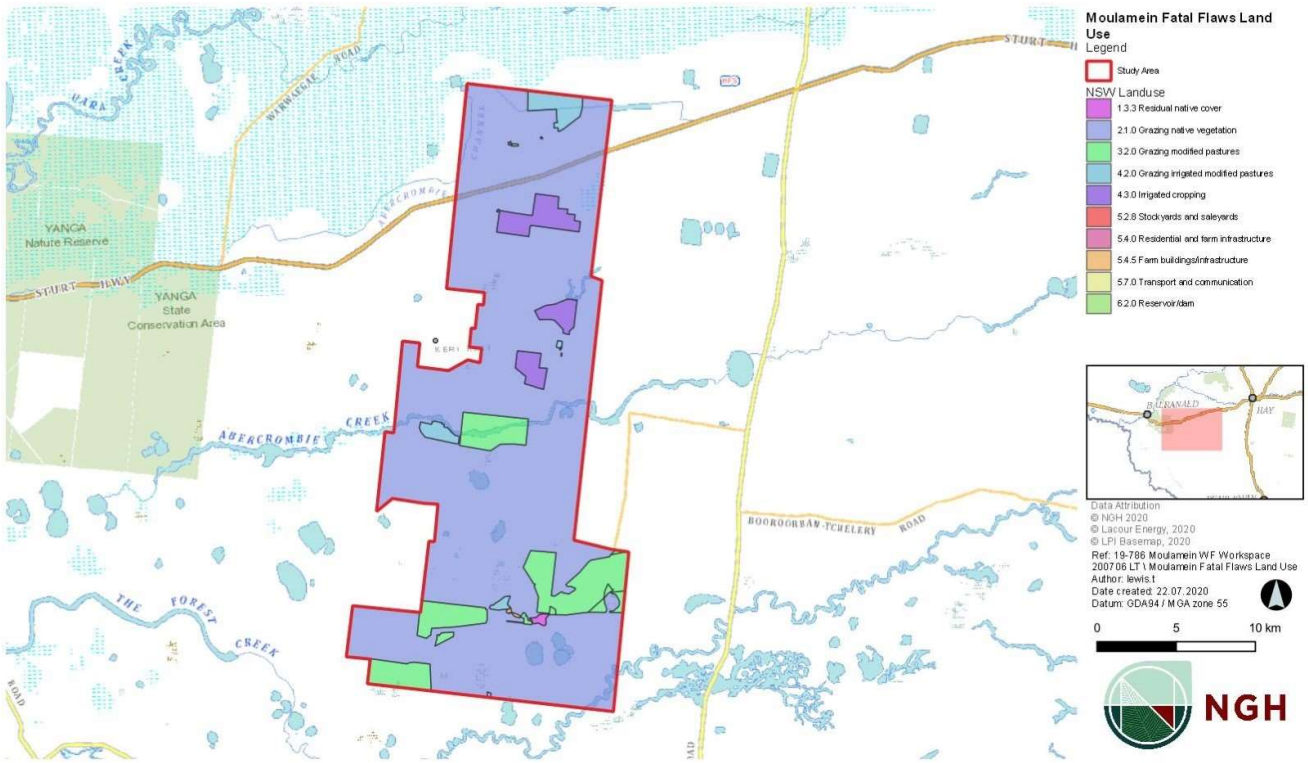

Figure 7-17: Existing land use

7.8.1 Proposed Further Assessment

The impact of the Project on the agricultural land, and the potential loss of agricultural land, will be assessed in the EIS as part of the Land Use Conflict Risk Assessment (*LUCRA*).

Additionally, the Proponent will continue to review the DRAFT State Significant Agricultural Land Policy discussed in Section 6.2.4.5 of this Report and align the Project with any relevant requirements.

7.9 Bushfire Risk Management

Wind farm development in rural areas requires consideration of any additional risk sources for bushfires and for the safety of personnel that are working at the site. The Wind farm infrastructure has a low risk of igniting bushfires and where there is a risk, mitigation measures are incorporated in the project. Attention to any hot work procedures during construction or maintenance is an obvious concern. Additionally, power lines or electrical plant may require safe clearances. The wind farm electrical connections between turbines and the substation will primarily or completely involve underground cabling that is not likely to ignite bushfires.

Bush Fire risks are considered highly manageable through well-established processes. A minimum 10 metre asset protection zone for structures and associated buildings/infrastructure associated with wind farms are recommended as per section 8.3.5 of the 'Planning for Bush Fire Protection' guide (NSW RFS, 2019).

The Project site is in bushfire prone land therefore a Bushfire Management Plan (*BFMP*) is likely to be required during the post approval stage.

7.10 Aviation Safety

Wind turbines can constitute a risk to low-flying aviation operations such as agricultural pilots. Additionally, temporary, and permanent meteorological monitoring towers that are erected in anticipation of, or in association with wind farms can also be hazardous to aviation. The wind turbine structures may also affect the performance of Communications, Navigation and Surveillance equipment operated by Air services Australia and the Department of Defence.

The *National Airports Safeguarding Framework: Guideline D Managing Wind Turbine Risk to Aircraft* provides advice on the location and safety management of wind turbines and wind monitoring towers and other similar structures. Within the study area there are two airstrips (NSW Government, 2019) located in the north-west corner and the southern portion of the study area. From the desktop analysis, these appear to be private airstrips used by the landowners. Balranald Airport is located 20 kilometres North-west of the study area. Ravensworth Airport' appears on Google maps as being north-east of the proposal, however database searches have not confirmed the existence of this airport. The proposal occurs within 50 kilometres of Balranald Airport.

Aviation safety risks associated with a wind farm are considered a key issue. An aviation safety risk assessment by a suitably qualified aerodrome consultant and specialist would be required to certify the proposal will not adversely affect the safety, operational integrity and efficiency of air services associated with the airstrips and Balranald airport (e.g., flight operations, flight paths and Obstacle Limitation Surfaces (OLS)). This will include a consultation process with aerodrome operators, local users, and agencies. In addition, consideration of local airports and landing strips would be considered as well as any defence air space requirements and aerial agricultural applications (see additional comments in Section 5.8). The outcome of the aviation risk assessment may directly influence the available location of proposed turbines or, it may be possible to constructively negotiate flight approach procedures for Balranald Airport to avoid safety risks. Further investigation will refine risks and mitigation options more precisely.

CASA may determine, and subsequently advise a proponent and relevant planning authorities, whether aviation safety lighting is required on selected wind turbines. Aviation safety lighting may not be required, but a risk assessment will be needed for consultation with CASA. Application of Aviation Safety Lighting, if required, would be subject to a lighting plan, and that would need to be considered in the visual assessment for the project EIS.

7.11 Hazardous or Offensive Development

SEPP 33 Hazardous and Offensive Development requires a Preliminary Hazard Assessment (*PHA*) to be prepared for potentially hazardous or offensive development. "*Appendix 3*" of the *Applying SEPP 33 Guidelines (NSW Department of Planning, 2011)* lists industries that may fall within SEPP 33, which does not include energy storage facilities.

SEPP 33 is not necessarily relevant for wind farm developments and most hazardous aspects such as in relation to aviation safety have well established processes for risk assessment and management. Otherwise, addressing SEPP 33 has a standard checklist that can be included in the EIS and likely focussed on any aspects that have not been discretely assessed by an appropriate separate process within the EIS.

An exception is regarding the BESS Facility. Such facilities are now being more frequently integrated with wind and solar developments and planning for their integration is now able to be better informed. Where a large BESS system is included in the proposal, additional detailed assessment via a PHA may be required.

The Project design phase that accompanies the EIS process will identify the potential BESS infrastructure, key risks and thee appropriate management controls for safety, environmental or emergency purposes.

7.12 Social and Economic

The geographic region that surrounds the Project (**Figure 1-1**) has been considered for potential social and economic impacts, these areas include, Hay Shire, Murray River, Balranald Shite, Edward River, and Swan Hill Rural City Council in Victoria.

Factors that were considered were:

- The landowner and residents of the project area
- Neighbouring properties
- Localities in the immediate area
- Regional centres in the wider areas.

In accordance with the Social Impact Assessment Guidelines, an initial evaluation of the potential social and economic impacts has been completed using the SIA Scoping Worksheet (**Appendix 1**). Issues raised during early community engagement have been included in this evaluation. The preliminary assessment will be expanded during the EIS

preparation phase in accordance with the DPE's Social Impact Assessment Guideline for State Significant Projects, supported by continued community engagement.

7.13 Other Mitigation

An Environmental Management System (*EMS*) will be applied for the planning and implementation of the project that will address issues for the various development phases including, pre-construction, construction, commissioning, operations & maintenance, and decommissioning. The project EMS will be subject to periodic management review and audits to ensure its effectiveness.

Compliance with approvals will be subject to periodic reviews by the project management team, via updates of the Compliance Tracking Matrix for the Project Approval Conditions, routine inspections, internal and external audits and complemented by reporting.

7.13.1 Construction Environmental Management Plan and Biodiversity Management Plan

An outline of a Construction Environmental Management Plan (*CEMP*) will be described in the EIS, setting out the processes to ensure all employees, contractors and sub-contractors are aware of:

- Project approval conditions and compliance requirements,
- Relevant environmental risks,
- Relevant procedures and controls to mitigate environmental risks; and
- Monitoring and reporting requirements.

The CEMP will be the principal environmental management reference for the construction phase and set out the processes mitigating identified risks and for rectifying any non-compliance during construction whether identified from compliance reviews, incident management or audit processes. The processes will aim to avoid adverse impacts and to ensure that measures are integrated in the project management to avoid or mitigate potential for any recurrence.

The Proponent will comply with the requirements of the approvals in the specified timeframes.

The Proponent will thoroughly investigate all incidents arising from the project to identify causes, potential for recurrence and as necessary, any improvements in controls to avoid recurrence.

In addition, the Proponent will implement an environmental management framework including a program of environmental audits commencing during construction and continuing through operation and decommissioning to cover the full life of the project.

7.14 Electromagnetic Interference Assessment

In accordance with the planning guidelines, the Proponent will assess potential risks regarding interference with radiocommunication services passing across the Project. Eight Australian Communications & Media Authority (*ACMA*) registered radiocommunication services are operational within the region surrounding the Project. Details of the broadcast towers (**Table 7-9**) and point to point pathways (**Table 7-10**) are listed below.

To mitigate the potential effects of the Project upon the registered radiocommunication services, the Proponent implemented a 100m setback from the centreline of all pathways that cross through the Project. The registered pathways and the applied 200m wide buffer are depicted as the yellow lines within **Figure 7-18**.

It is anticipated that the Project should have no impact on the existing radiocommunication point to point services and this will be confirmed as part of the EIS studies. The Proponent has managed this issue at all its previous projects to avoid impacts and in the case of White Rock Wind Farm took an innovative approach of providing the Glen Innes locality with an improved Service via a fibre connection to the locality and avoiding the previous service that was subject to degradation at times in unfavourable weather.

During the EIS preparation, a further search of registered Services will be undertaken to identify any new Licences within the region, so that they can also be considered during the planning phase.

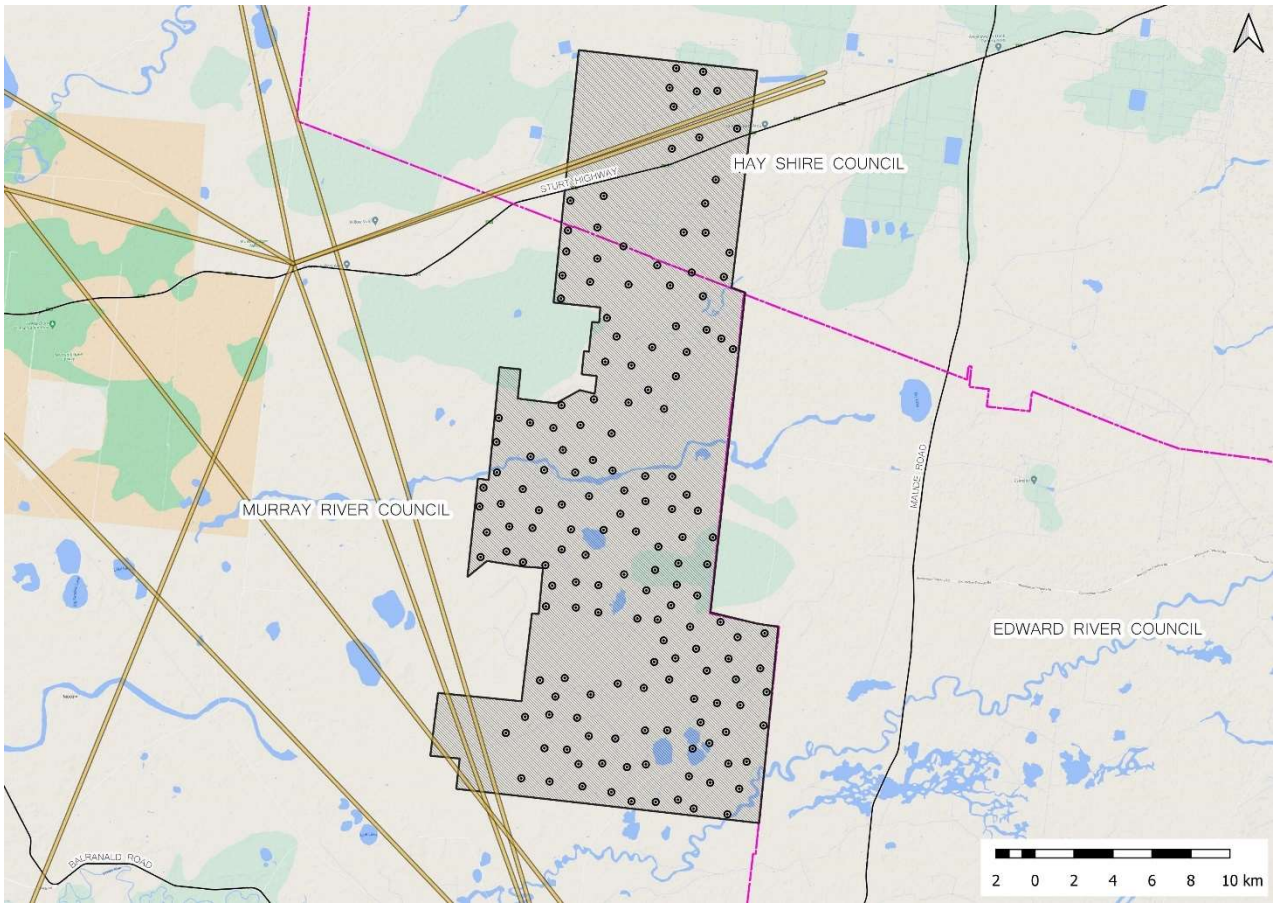

Figure 7-18: Registered Radiocommunication Point to Point Pathways with 200m Wide Buffers

Table 7-9: Associated Broadcast Towers

ACMA Tower ID	Latitude	Longitude	Details
201494	-35.075451°	144.035401°	Murray River Council 75m Guyed Mast off Baldon Rd of MOULAMEIN, NSW 2733
204310	-34.7198°	143.8967°	Axicom 60m Guyed Mast Willowvale 35812 Sturt Hwy KERI KERI
35514	-34.638832°	144.197515°	The Rookery Stuart Highway 65 Km East of BALRANALD
204311	-34.643043°	144.196391°	Telstra/Vodafone Site The Rookery Sturt Hwy JERALY HILL
10025799	-34.6429°	144.19583°	RMS 50m Guyed Mast Jeraly Hill, off 32094 Stuart Hwy MAUDE
100850	-34.55689°	143.587609°	NSWPF 55m Guyed Mast off Ivanhoe Rd BALRANALD NSW 2715
9940	-34.63563°	143.561728°	Nominal Planning Site Water Reservoir Church St
370297	-34.489766°	143.849585°	Sydney Water Corporation 32.5m Lattice Tower off Wendouree Ln WAUGORAH NSW 2715
9970	-35.029117°	144.044929°	MRE Site 5km North of MOULAMEIN NSW 2733
35591	-34.55675°	143.586098°	Essential Energy 90m Guyed Mast off Ivanhoe Rd BALRANALD

Table 7-10: Identified Radio pathways crossing the project boundary

Pathway ID	Point A	Point B	Service owner
01	Axicom Tower	The Rookery Stuart Highway Tower	Optus Mobile Pty Limited
02	Axicom Tower	Telstra/Vodafone Tower JERALY HILL	Vodafone Australia Pty Limited
03	Axicom Tower	RMS Tower Jeraly Hill	NEW SOUTH WALES GOVERNMENT TELECOMMUNICATIONS AUTHORITY
04	NSWPF Tower Ivanhoe Rd	Telstra/Vodafone Tower JERALY HILL	NEW SOUTH WALES GOVERNMENT TELECOMMUNICATIONS AUTHORITY
05	The Rookery Stuart Highway Tower	Nominal Planning Tower Church St	NEW SOUTH WALES GOVERNMENT TELECOMMUNICATIONS AUTHORITY;
06	Sydney Water Corporation Tower	Murray River Council Tower Baldon Rd	NSW Rural Fire Service
07	Axicom Tower	Murray River Council Tower Baldon Rd	NSW Rural Fire Service NEW SOUTH WALES GOVERNMENT TELECOMMUNICATIONS AUTHORITY
08	MRE Tower	Essential Energy Tower Ivanhoe Rd	Essential Energy Ambulance Service NSW

8.0 COMMUNITY AND STAKEHOLDER ENGAGEMENT

8.1 Introduction

This section summarises the general principles the Proponent applies to community and stakeholder engagement and actions taken to date. It also sets out ongoing engagement as the project moves forward. To guide the engagement the Proponent has prepared a Stakeholder and Engagement Plan (*SCEP*) that considers the specific characteristics of the proposal and the surrounding communities. The SCEP will be updated as the project progresses to reflect the stage (e.g., construction, commissioning, and operations).

8.2 Guiding Principles

The following plans and guidelines have been considered when preparing and undertaking community engagement activities:

- Community Engagement Guidelines (CEC, 2018)
- Social Impact Assessment Guidelines (DPIE, 2021)
- Undertaking Engagement Guidelines for State Significant Projects (DPIE, 2021)
- Wind Energy Guideline (DPIE, 2016)
- Wind Energy: Noise Assessment Bulletin (DPIE, 2016)
- Wind Energy: Visual Assessment Bulletin (DPIE, 2016)

These guidelines provide a set of clear methodologies which can be followed to ensure projects provide the best community and stakeholder engagement possible, beginning at an early stage in the development pathway.

The Proponent is committed to best practice engagement, appropriate to the project stage and surrounding communities. Goldwind is a signatory on the Clean Energy Council's Community Engagement *Best Practice Charter for Renewable Energy Developments*. The charter not only covers best practice guidelines and commitments for community engagement, but also other aspects of wind energy development including socio-economic, tourism, biodiversity, landscape and agricultural.

In addition to the above best practices and planning guidelines, the Proponent uses the IAP2 framework as a framework to guide community engagement. Using the IAP2 spectrum ensures the objectives of the community engagement are clearly translated into engagement actions.

Through the design and development of the proposed wind farm, the Proponent aims to inform and consult the community on the project status and options, and where possible, involve and collaborate with the community on certain aspects. These might include topics such as shaping the long-term framework of the shared benefits program, incorporating local knowledge and advice into project design, and preferred communication methods during construction and transportation of turbine components.

8.3 Objectives of Engagement

Stakeholder and community engagement is in its essence about making better, more sustainable decisions through a process that engenders trust and credibility.

The overarching objectives of the proposed engagement are to:

1. Establish an open, direct, and two-way relationship between project team and community/key stakeholders.
2. To establish and maintain a level of acceptance of the project in the local community.
3. To have a culture of trust, transparency, and partnership.
4. To actively share benefits of the project within the local area.
5. For the project to be considered as an integrated and valued component of the social and economic fabric of the community.

In particular, during this scoping stage, early consultation has focused on:

- Establishing and building relationships with the near neighbours and local community,
- Informing the community and stakeholders about the proposed project; and
- Listening to feedback from the community and stakeholders.

8.3.1 Adapting to COVID-19 Restrictions

Since early 2020, and more specifically as of April 2021, NSW was under a variety of Public Health restrictions due to the COVID-19 Delta variant virus. These restrictions include the inability to travel with work and engage in in-person consultation activities, including meetings, forums, and community drop-in sessions.

The Proponent has adapted to these restrictions by undertaking community and stakeholder engagement through a combination of in-person and remote engagement tools.

8.4 Stakeholders

The following stakeholders have been identified as having an interest in the project, with varying levels of engagement proposed/expected.

Table 8-1: Stakeholders

Group Type	Group Description	Interest	Influence
Host Landowners	Properties with agreements to have wind turbines and other project infrastructure.	High	High
Near Neighbours	Residents up to ten kilometres from the proposed project boundary.	High	Medium
Wider Community	Community beyond ten kilometres from the proposed project boundary.	Medium	Low
Haulage Route Users	Feedlot and other companies within the wider community who may be impacted by construction traffic.	Medium	Medium
Local Businesses	Businesses which may be impacted or benefit from the project.	Medium	Medium
Local Community Groups	Groups which may be interested in, impacted or benefit from the project., such as: • Chamber of Commerce • Community Development Groups • Country Women's Association • Lion/Lioness Club • Probus and Rotary Clubs	Medium	Medium
Local Community Services	• Public/Private Schools • Bus and Transport Providers • Hospital/Medical/Doctors	Medium	Medium
Local Aboriginal Groups	• Wamba Wamba LALC • Balranald LALC • Hay LALC • Deniliquin LALC	High	Medium
Federal Government	Federal Member for the Riverina	Low	High
	Federal Government Departments/Agencies	Medium	High
State Government	State Member for the Murray	Low	High
	State Government Departments/Agencies	Medium	High
Local Government	• Hay Shire Council	High	Medium

	• Edward River Council • Murray River Council		
Media	• The Riverine Grazier • The Guardian • Deniliquin Pastoral Times • Southern Riverina News • The Bridge • 2Hay FM – Hay Community Radio • Local groups or school newsletters	Medium	High
	• The Land (Paper) • ABC Riverina (Radio)	Medium	Medium
	• State and National media outlets • Industry specific media outlets	Low	Medium

8.5 Mitigation of Potential Community Impacts

Although the project is at an early stage, several mitigation measures were considered in the site selection and project design. The Proponent will continue to seek opportunities to mitigate potential impacts through conscious design and careful planning of management strategies.

The Proponent has taken into consideration the location of neighbours in the preliminary design. The Project is located on a large rural property consisting of a single landowner, has minimal neighbouring residences and the nearest community (Moulamein) is 15 km to the south. The Proponent has taken this into consideration when designing the layout of the wind turbines, ensuring that no turbine is closer than 5 km to a neighbouring residence. A number of potential impacts will be mitigated through this, including construction and operational noise, and landscape and visual impacts. Shadow Flicker should not be an issue for neighbouring dwellings.

8.6 Early Neighbour, Community and Council Consultation

8.6.1 Engagement Activities and Tools

Early engagement carried out during the scoping stage has focused on identifying and building relationships with the host landowner, near neighbours and communities closest to the project area. Early engagement followed the guidelines found within the NSW Government's *Undertaking Engagement Guidelines for State Significant Projects*.

The following engagement activities were undertaken:

- Near neighbours were identified through desktop assessment and contact details obtained where possible.
- A website was established with basic project information, a map, and details of how to contact the project team.
- Communication channels established (info@ email, freephone number and website contact form). The contact details have been included on all public communication.
- An internal Enquiries and Complaints plan, with a summary available on the project website.
- In-person meeting with representatives of the host landowner in February 2022.
- In-person meetings with council officials (Murray River, Hay Shire, and Edward River) to provide a project briefing in Aug/Sept 2021 and Feb 2022.
- Project Introduction newsletter produced and made available on website and at drop-in sessions.
- Feedback form, including social and landscape values questions, available on project and at drop-in sessions.

- All neighbours with a residence within 5km of the Project boundary were contacted (where possible) via telephone and/or email. An introductory letter and copy of the Project introduction newsletter were mailed to all landowners with a residence within 5km of the Project boundary.
- Community Information drop-in sessions in Moulamein on 23rd February 2-4pm and 24th February 5-7pm. The drop-in sessions were advertised in:
    - The Riverine Grazier 9th and 16th February.
    - The Guardian February 11th, 15th and 18th February.
    - Wongi (Moulamein newsletter) 22nd February.
    - Hay Shire Council Facebook page.
    - Moulamein Business Centre.
    - Moulamein Bowling Club.
- In-person briefing to Hay Shire Council elected members 22nd February 2022.

8.6.2 Neighbouring Landowners

All identified neighbours with a residence within approximately 6km of, or having a boundary in common with, the Project, were contacted where possible.

An introductory letter and copy of the Project's introduction newsletter were sent to these neighbours using their publicly available mailing address and registered mail. Additionally, in-person contact attempts during site visits prior to and during the drop-in sessions were made.

For the neighbours that live out of the region, or could not be contacted in-person, telephone calls were held with the registered owners of the properties, or their elected representative. These calls outlined the Project and the information that was available during the drop-in sessions.

During all points of contact with these neighbours, ongoing communication was encouraged and the direct contact details for the Proponent were provided.

8.6.3 Summary of Consultation Feedback

A total of 13 people attended the Community drop-in sessions, which in the Proponent's experience is typical of this location and event type.

Five completed feedback forms were submitted, and the information provided in the feedback forms, although a small number, has been incorporated into the Preliminary Landscape and Visual Assessment.

Table 8-2 provides a summary of feedback received and the Project's response.

Table 8-2: Summary of Consultation Feedback

Feedback	Detail	Raised by	Response or proposed future actions
Jobs and economic benefits	Desire to maximise opportunities for local communities.	Hay Shire Council officials. Murray River Council officials. Most community members.	We will work with local stakeholders to maximise economic benefits during the development phase. The SIA for the EIS will assess the potential impacts/benefits. We will look at implementing a local jobs and business program during construction and operation.
Community benefits package	Opportunities to maximise benefits for local communities. Interest in structure of benefits package.	Murray River Council officials. Most community members.	We will work with community members and the CCC to design a community benefits package that is tailored to the community.
Community engagement	Ensuring thorough community engagement.	Edward River Council officials	We place high value in appropriate and tailored engagement and will

Feedback	Detail	Raised by	Response or proposed future actions
			continue to engage throughout to EIS stage of the project.
Local accommodation	Opportunities for local accommodation providers to benefit during construction.	Several local community members/business owners.	The SIA for the EIS will assess the potential impacts/ benefits.
Local housing availability	Concern that local housing supply will not be sufficient for influx of workers and unavailability of suitable blocks of land for housing/light industry development.	Several local community members.	The SIA for the EIS will assess the potential impacts/ benefits.
Local work force	Concern that construction would drain local workforce and increase wage expectation, negatively impacting local businesses.	A few local community members.	The SIA for the EIS will assess the potential impacts/benefits
Potential visual impacts	Concern over negative visual impact in flat landscape. Concern over potential cumulative impacts with other wind farm developments.	A few local community members.	A detailed landscape and visual assessment will form part of the IES.
Potential noise impacts	Concern over negative noise impact	A few local community members.	A detailed noise assessment will form part of the EIS.
Grid upgrades	Concern around grid constraints and cumulative impacts of multiple windfarms competing for grid availability. Concern *Project EnergyConnect* may propose larger/additional upgrades.	A few local community members.	Further information was provided at the Drop-In sessions. We will provide further information as required in future consultation and project updates.
Timing and feasibility of project	Questions around timing of *Project EnergyConnect* upgrades and ability of project to export power.	A few local community members.	Further information was provided at the Drop-In sessions. We will provide further information as required in future consultation and project updates.

8.7 Outcomes of Consultation to Date

8.7.1 DPE Scoping Meeting

The Proponent held a scoping meeting with members of the DPIE on the 8 July 2021. The purpose of the meeting was to seek initial feedback and direction from the DPE about the Project. The planning for the project has now progressed considering the DPE advice and benefited from the feedback obtained during the meeting, culminating in this Scoping Report to be lodged with DPE. The Proponent has also monitored similar renewable and transmission development application media for the region and familiarised itself with issues raised and processes for their handling. That knowledge has been further supplemented by consultation within the Southwest Region and with key stakeholders.

Based on the DPE advice and insights gained through the subsequent meetings, investigations and consultation, the Proponent expects that this Scoping Report provides the relevant detail to adequately inform DPE of the form of the Baldon Wind Farm proposal, its key impacts and, relevant matters that will need to be addressed by the EIS.

8.7.2 Consultation with other Stakeholders

Emails have been sent to relevant Government departments to seek initial feedback on the Project, with several responses received to date (**Table 8-3**). The EIS will consider each of the matters raised to date as well as the further matters raised as part of the ongoing consultation.

Table 8-3: Stakeholder Consultation

Stakeholder Consulted	Method and Date	Response
RFS, MIA District	Email	• What access to the site in an emergency, will there be locked gates – if so, are we able to get keys for local brigades? • The availability of Site maps, strategic water locations, critical infrastructure etc. • Will internal tracks/trails be maintained as a strategic fire advantage lines (bare mineral earth fire breaks) to limit the spread of fire if one was to occur on site? • What bushfire mitigation strategies will be utilised across the site? • Once the site is operational, conducting a site familiarisation/ safety, site induction for all neighbouring brigades who are likely to respond to an incident at the proposed site.
National Native Title Tribunal (NTT)	Email	• Undertake search of NT claims, none located within the Project site
Crown Lands, DPIE	Email	• Impact of the project footprint on Crown Lands • Suggestion that Crown Roads are closed by landowner • Seek consent for impact on Crown Roads/Land
DPI Agriculture	Email	• Impacts on agricultural resources and land • Impacts on agricultural land uses through consideration of the Land Use Conflict Risk Assessment Guide • Decommissioning objectives and strategies to be detailed in a Rehabilitation and Decommissioning/Closure Management Plan • Draft SEARs provided for consideration
CASA	Email	• Consider the current guidelines and regulations for wind farms • Consult with the Aerial Agricultural Association of Australia (AAAA), RFS (Air Operations), aerodromes, landowners, and other aviation groups • Consult with the Department of Defence about low flying training and operations • Consideration of obstacle lighting
Department of Regional NSW	Email	• No comment currently
Air Services Australia	Email	• Preparation of an Aviation Impact Statement (AIS) will be necessary
Murray Local Lands Services	Email	• Will provide comment during the EIS stage

8.8 Consultation during EIS Preparation

The Proponent will continue to engage with the community and other stakeholders as the project progresses through the various stages of development, construction, and operations. Following this Report and issue of SEARs, the community engagement strategy will continue to ensure all possible stakeholders are consulted about the project and feedback is considered and incorporated into the Project design.

The Proponent will continue to implement the SCEP including:

- Updated information on the project website,
- Community information sessions (in-person),
- Discussions with near neighbours (face to face, telephone etc.),
- Attendance at local community events, to provide information, listen to feedback and answer questions,
- Consultation on the framework for a Community Benefits Package,
- Establishment of a Community Consultative Committee (CCC); and

- Council and other political briefings.

Engagement outcomes will be regularly reviewed, and actions tailored to meet the requirements of the community, stakeholders, and the Project.

9.0 CONCLUSION

This Report provides details of the proposed Baldon Wind Farm and a preliminary environmental assessment for the construction, operation and decommissioning of the Project. It evaluates both social and environmental constraints, identifies potential impacts and proposes the measures to manage such impacts. Initial consultation with regional councils, landowners and local stakeholders indicates a generally supportive community and their expectations and an ongoing close partnership with these stakeholders indicates a promising outcome for community acceptance of this project.

The Baldon Wind Farm project will have the following potential benefits:

- Generate low emission electricity into the NEM,
- Assist both Federal and State government achieve their Renewable Energy Targets,
- Provide a high quality, low impact development which does not require new transmission lines,
- Support both local and regional economies by bringing new investment opportunities for local businesses,
- Contribute to diversifying the regional economy by providing large non-farming investment,
- Create temporary construction jobs and permanent jobs for the 30-year life of the project,
- Provide local community social benefit, invest in the people and culture; and
- Improvements to local infrastructure such as transportation/telecommunication.

This assessment outlines the following potential impacts for Landscape and Visual, Noise, Traffic and Biodiversity. It also investigated the consequential outcomes in Aboriginal cultural and historical heritage as well as other Social-economic issues. The information in this Report is considered suitable to inform DPE of matters to be addressed by the SEARs.

The EIS will respond to the specific requirements of the SEARs and provide a reliable assessment of all relevant issues for the Development Application process and to support determination of the Development Application

10.0 REFERENCES

Australian Bureau of Statistics (2020). 2016 Census of Population and Housing. Canberra.

Australian Government (2022). Nation Map, Spatial Data Services. Retrieved from: https://nationalmap.gov.au/

Australian Wind Energy Association (Auswind) (2006). Best practice guidelines for the implementation of wind energy projects in Australia.

AEMO (2019). Draft 2020 Integrated System Plan. Australian Energy Market Operator Limited.

AEMO (2020). 2020 Electricity Statement of Opportunities. Australian Energy Market Operator Limited

Australian Energy Regulator (2020). State of the Energy Market 2020. Melbourne: Australian

Bacon, D. F. 2002. Fixed-link wind-turbine exclusion zone method. OFCOM UK. Version 1.1.

Bureau of Meteorology (2020), Climate statistics for Australian locations, Retrieved from: http://www.bom.gov.au/climate/averages/tables/cw_077042_All.shtml

Bureau of Meteorology (2020). Groundwater Dependent Ecosystems Atlas. Retrieved from: http://www.bom.gov.au/water/groundwater/gde/service/simpleattributes.php?id=23000134&start=1001&gde_type=GDE_SURFACE&state=2&basin=144&letter=All

Bureau of Meteorology (2020). Groundwater Dependent Ecosystems Atlas. Retrieved from

Clean Energy Council (2021). Best Practice Charter for Renewable Energy Projects

Clean Energy Council (2017). Battery Install Guidelines for Accredited Installers

Clean Energy Council (2018). Best Practice Guidelines for Implementation of Wind Energy Projects in Australia.

Department of Environment, Climate Change and Water (NSW DECCW) 2010. Aboriginal cultural heritage consultation requirements for s 2010.

Department of Infrastructure, Regional Development and Communications (DIRDC) 2012. National Airports Safeguarding Framework Guideline D: Managing Wind Turbine Risk to Aircraft.

Department of Planning (2011). Hazardous Industry Planning Advisory Paper No. 6.

Department of Planning (2011). Multi-Level Risk Assessment.

Department of Planning and Environment (DPE) (2018). NSW Government Submission on AEMO's Integrated System Plan

Department of Planning and Environment (DPE) (2016). Wind Energy Guideline (Wind Guideline).

Department of Planning and Environment (DPE) (2016). Wind Energy: Visual Assessment Bulletin.

Department of Planning and Environment (DPE) (2016). Wind Energy: Noise Assessment Bulletin.

Department of Planning and Environment (DPE) (2011). Hazardous and Offensive Development Application Guidelines - Applying SEPP 33.

Department of Planning and Environment (DPE) (2017). Draft Environmental Impact Assessment Guidance Series, Scoping an Environmental Impact Statement

Department of Planning and Environment (DPE) (2017). Riverina Murray Regional Plan 2036.

Department of Planning Industry and Environment (DPE) (2020). Land and Soil Capability Mapping for NSW, NSW Department of Planning, Industry and Environment, Parramatta.

Department of Planning Industry and Environment (DPE) (2020). Social Impact Assessment Guideline State Significant Projects October 2020

Department of Planning, Industry and Environment (DPE) (2020). Net Zero Plan Stage 1: 2020–2030

Department of Planning and Environment (DPE) (2016). NSW Wind Energy Framework. Retrieved from: https://www.planning.nsw.gov.au/Policy-and-Legislation/Renewable-Energy/Wind-Energy-Framework

Department of Planning and Environment (DPE) (2017). NSW Landuse 2017. Retrieved from: https://data.gov.au/dataset/ds-nsw-de27e381-9595-4562-9347-b00e71d4c3bd/details?q=

Department of Planning and Environment (DPE) (2020). eSPADE. Retrieved from: https://www.environment.nsw.gov.au/eSpade2WebApp

Elders Weather (2022). Keri Keri Weather Station Information. Retrieved From: https://www.eldersweather.com.au/local-forecast/nsw/keri-keri

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

Energy Network Australia (2022). Network Opportunity Maps. Retrieved from: https://www.energynetworks.com.au/projects/network-opportunity-maps/

Environment NSW (2011). SEED: Land Systems of Western New South Wales. Retrieved from: https://datasets.seed.nsw.gov.au/dataset/land-systems-of-western-new-south-wales0f783

Murray River Council (2020). Local Strategic Planning Statement 2020-2040. Retrieved from: https://yoursay.murrayriver.nsw.gov.au/lsps

NGH (2020). Fatal Flaws Assessment: Moulamein Wind Farm

Geoscience Australia (2022). Elevation and Depth – Foundation Spatial Data. Retrieved from: https://elevation.fsdf.org.au/

Glenday, J. 'Scott Morrison inches Australia towards 2050 net zero emissions, but distances himself from 'inner city' types', ABC News, 20 April 2021, viewed 21 May 2021. Retrieved from: https://www.abc.net.au/

Global Wind Atlas, accessed 24 June 2021, Retrieved from: https://globalwindatlas.info/

Green D., Petrovic J., Moss P., Burrell M. 2011. Water resources and management overview Murrumbidgee catchment.

GBD Landscape Architecture (2022). Baldon Wind Farm, Preliminary Landscape and Visual Assessment.

Intergovernmental Panel on Climate Change (IPCC). 2018. Global warming of 1.5°C. An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty. [V. Masson-Delmotte, P. Zhai, H. O. Pörtner, D.

Roberts, J. Skea, P. R. Shukla, A. Pirani, W. Moufouma-Okia, C. Péan, R. Pidcock, S. Connors, J. B. R. Matthews, Y. Chen, X. Zhou, M. I. Gomis, E. Lonnoy, T. Maycock, M. Tignor, T. Waterfield (eds.)]. World Meteorological Organization, Geneva, Switzerland.

Morrison, S. 2021. Address, Business Council of Australia Annual Dinner – Sydney, NSW. 19 April 2021.

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

NSW Rural Fire Service (RFS) (2019). Planning for Bushfire Protection: A guide for Councils. Planners, Fire Authorities and Developers.

NSW Government (2022). Spatial Information Exchange, Clip and Ship Services. Retrieved from: https://maps.six.nsw.gov.au/clipnship.html

South Australian Environment Protection Authority (2009). Wind farms environmental noise guidelines.

TransGrid (2020). Environmental Scoping Report: EnergyConnect (NSW – Eastern Section)

UNEP (2018). The Emissions Gap Report 2018. United Nations Environment Programme, Nairobi

WaterNSW (2012). Guidelines for controlled activities. Retrieved from: https://www.industry.nsw.gov.au/water/licensing-trade/approvals/controlled-activities/guide

11.0 APPENDIX 1 – SOCIAL IMPACT ASSESSMENT WORKSHEET

12.0 APPENDIX 2 – SCOPING SUMMARY TABLE

14.0 APPENDIX 3 – LANDSCAPE VISUAL ASSESSMENT