

Paling Yards Wind Farm – Land Use Conflict Risk Assessment

Tract

Paling Yards Wind Farm

Land Use Conflict Risk Assessment Rev2

Prepared for Global Power Generation Australia Pty Ltd and Paling Yards Development Pty Ltd

Quality Assurance

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Land Use Conflict Risk Assessment_Rev2

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1 Introduction

1.1 Purpose and Scope of Assessment

Tract was commissioned by Global Power Generation Australia Pty Ltd (GPGA) and its wholly owned subsidiary Paling Yards Development Pty Ltd (PYDPL or the Proponent) to prepare a Land Use Conflict Risk Assessment (LUCRA) to support the Environmental Impact Statement (EIS) prepared as part of the State Significant Development (SSD) Application for the proposed Paling Yard Wind Farm.

The purpose of the LUCRA is to identify land use compatibility and potential conflict between neighbouring land uses, and the identification of conflict avoidance or mitigation measures.

As outlined in the *NSW Land Use Conflict Risk Assessment Guide 2011* (LUCRA Guide), the LUCRA aims to:

- Accurately identify and address potential land use conflict issues and risk of occurrence before a new land use proceeds or a dispute arrives.
- Objectively assess the effect of a proposed land use on neighbouring land uses.
- Increase the understanding of potential land use conflict to inform and complement development control and buffer requirements.
- Highlight or recommend strategies to help minimise the potential for land use conflicts to occur and contribute to the negotiation, proposal, implementation, and evaluation of separation strategies.

A LUCRA is required to assist in guiding an assessment of potential conflict between land uses and the potential implications of that conflict.

To successfully achieve these aims, a four-step assessment process was undertaken guided by the following:

1. Information gathering – gather information about the proposed land use change and associated activities, surrounding land uses and the site's environmental characteristics.
2. Risk level evaluation – each proposed activity is recorded, and potential land use conflict level is assessed. The higher the risk level, the more stringent the mitigations measures that would be required.
3. Identification of risk mitigation strategies – mitigation strategies are identified which assist in lowering the risk of potential conflict.
4. Record results – key issues, risk level and recommended management measures are recorded and summarised.

1.2 Project Background

GPGA has established a subsidiary company called Paling Yards Development Pty Ltd, being the Proponent for the proposed Paling Yards Wind Farm project (PYWF or the Project).

The Project supports the installation, operation and maintenance of a wind farm development that will comprise of up to forty-seven (47) Wind Turbine Generators (WTGs), and ancillary infrastructure and facilities. The site is located within the Central Tablelands of NSW on the western extent of the Great Dividing Range.

The Project will provide renewable energy to the Central Tablelands region. Each wind turbine would allow for a maximum capacity of up to 6.1MW, with a total generation capacity of up to 287MW. The PYWF will see clean electricity generated and dispatched which will result in a reduction of greenhouse gas emissions of 900,000 tonnes of CO₂-equivalent annually.

Other key benefits include:

- A total capital investment of between \$550 million and \$600 million;
- Additional job creation and upskilling of the local workforce; and
- Provision of community grants and initiatives.

1.3 Regional Strategic Plans

1.3.1 Central West and Orana Regional Plan 2036

The *Central West and Orana Regional Plan 2036* (Regional Plan) released by the NSW Government in 2017 is a regional strategy for guiding future land use priorities and decisions for the region over the next 20 years. The Regional Plan is the regional strategy for the 19 Local Government Areas (LGAs) of Bathurst Regional, Blayney, Bogan, Cabonne, Coonamble, Cowra, Dubbo Regional, Forbes, Gilgandra, Lachlan, Lithgow, Mid-Western Regional, Narromine, Oberon, Orange, Parkes, Warren, Warrumbungle and Weddin.

The Regional Plan has established four goals (including relevant directions and actions) with which Oberon Council's local plans and strategies must be consistent:

- Goal 1 – The most diverse regional economy in NSW
 - Direction 9: Increase renewable energy generation.
 - *Action 9.1 - The Regional Plan identifies that wind generation opportunities are focused on the tablelands and slopes of the Central West including areas within Blayney, Oberon and Wellington which all have access to the existing electricity network.*
 - *Action 9.3 – Outlines that best practice community engagement approaches should be utilised to ensure that the community benefits from all utility-scale renewable energy projects.*
- Goal 2 – A stronger, healthier environment and diverse heritage
 - Direction 13: Protect and manage environmental assets
 - *Action 13.2 – Outlines those potential impacts arising from development in areas of high environmental value are to be minimised, with offsets or other mitigation mechanisms considered for unavoidable impacts.*
 - Direction 14: Manage and conserve water resources for the environment
 - *Action 14.2 – Outlines that the location, design, construction and management of new developments are to minimise impacts on water catchments, including downstream areas and groundwater sources.*
- Goal 3 – Quality freight, transport and infrastructure networks
 - Direction 21: Coordinate utility infrastructure investment
 - *Action 21.3 – Outlines that the developments should be monitored to ensure that infrastructure is responsive to investment opportunities.*
- Goal 4 – Dynamic, vibrant and healthy communities.

The Project supports Direction 9 of the Regional Plan through its proposal to develop a modern generation wind farm in a manner that creates economic opportunity, ensures the protection and conservation of the environment, and promotes community engagement and benefits. The Project is further in line with Direction 21 through the provision of additional infrastructure investment and development.

1.3.2 Oberon Local Strategic Planning Statement 2040

The Oberon Council's *Local Strategic Planning Statement 2040: Oberon – More Than You Imagine* (LSPS) sets out the 20-year vision for land use planning framework to address Oberon's economic, social and environmental needs. It highlights the strategic planning outcomes and development issues for the LGA and sets out a range of planning priorities and actions to guide planning and support the community of Oberon for the next 20 years.

The following five planning priorities were identified as being the focus for future strategic planning:

- Growth
- Community Well-being
- Infrastructure
- Environment
- Leadership

The 'Infrastructure' planning priority gives effect to the Regional Plan directions, specifically – Direction 21: "Coordinate utility infrastructure investment." It outlines that the existing electricity network capabilities provide constraints to the

provision of electricity to future growth and development areas. Council has identified that it will capitalise on planned investments in utility infrastructure in the towns and villages to drive opportunities for economic and housing growth. The Project will support residents in towns and villages through supporting jobs, employment, and maximising private infrastructure investment within the Oberon LGA.

The 'Environment' planning priority within the LSPS gives effect to the Regional Plan directions, specifically – Direction 9: "Increase renewable energy generation." The LSPS explains through NSW Wind Atlas that the Oberon LGA has a high wind speed. The LSPS states that alternative energy sources like wind farms are identified as a potential future opportunity for the LGA.

The Project supports the above general planning priorities and supports renewable energy generation and infrastructure investment within the Oberon LGA. The Project seeks approval for a wind farm that features modern wind turbine generation technology and will be implemented in consultation with the Oberon Council and the local community.

2 Information Gathering

2.1 Site Location and Zoning

2.1.1 Location

While the Project is situated in the Oberon LGA, it is located in close proximity with the Upper Lachlan LGA. The major regional centre servicing this area is Goulburn, which is in the Goulburn-Mulwaree LGA. The subject Site has therefore been identified as being within the combined LGAs of Oberon, Upper Lachlan and Goulburn-Mulwaree.

The Project is proposed to be located approximately 60km South of Oberon, 75km North of Goulburn and approximately 140km west of Sydney. National Parks border the site:

- To the Southwest the site borders the Abercrombie National Park; and
- To the East of the site is the Wiabarough Nature Reserve and Blue Mountains National Park.

The closest settlements to the site are Porters Retreat and Curraweela, which have populations of approximately 64 (down from 259 in 2011) and 67 (down from 263 in 2011) respectively according to the 2021 Census.

Topographically, the project site runs along a plateau along Abercrombie Road, which is intersected by Goulburn to the south and Oberon to the north. This plateau is approximately 800 m to 1000 m above sea level. The surrounding district is primarily used for agricultural (grazing) purposes with areas surrounding the project site covered in native vegetation. The Abercrombie River is to the south of the project site and plateaus into a steep gully. Most of the site has been cleared of native vegetation, although trees are scattered and thicker vegetation exists near the site's western boundary. It contains several ephemeral creeks and drainage lines which cross the site and effectively drains into the Abercrombie River to the south.

The Site includes four separate land holdings comprising over approximately 4,600 hectares and referred to as 'Mingary Park', 'Paling Yards', 'Middle Station' and 'Hilltop'.

The project site is approximately 30km north-west from the proposed new Taralga Wind Farm, and 45km to the north-east of the existing Crookwell 1, Crookwell 2 Wind Farms, and the recently approved Crookwell 3 Wind Farm.

Refer to Figure 1 for Site Locality plan.

Figure 2 provides an overview of the land use on and directly adjacent the site. Main land-uses on the site itself consists of dryland cropping and grazing. Around the site, key land uses identified includes nature conservation to the south and west, grazing to the north, east and south, and plantation forestry to the north-east.

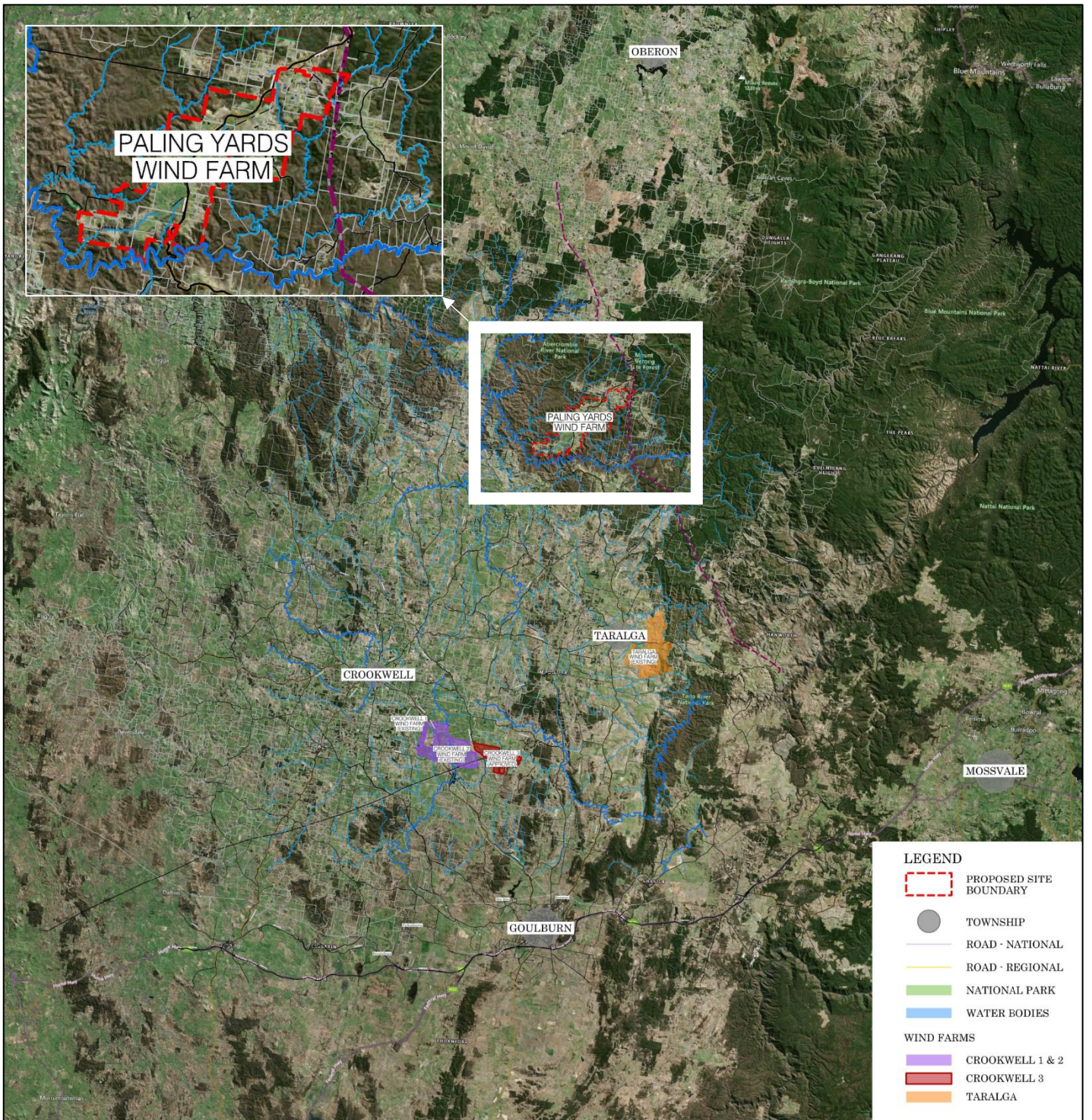


Figure 1. Site Locality (Source: Tract 2023)

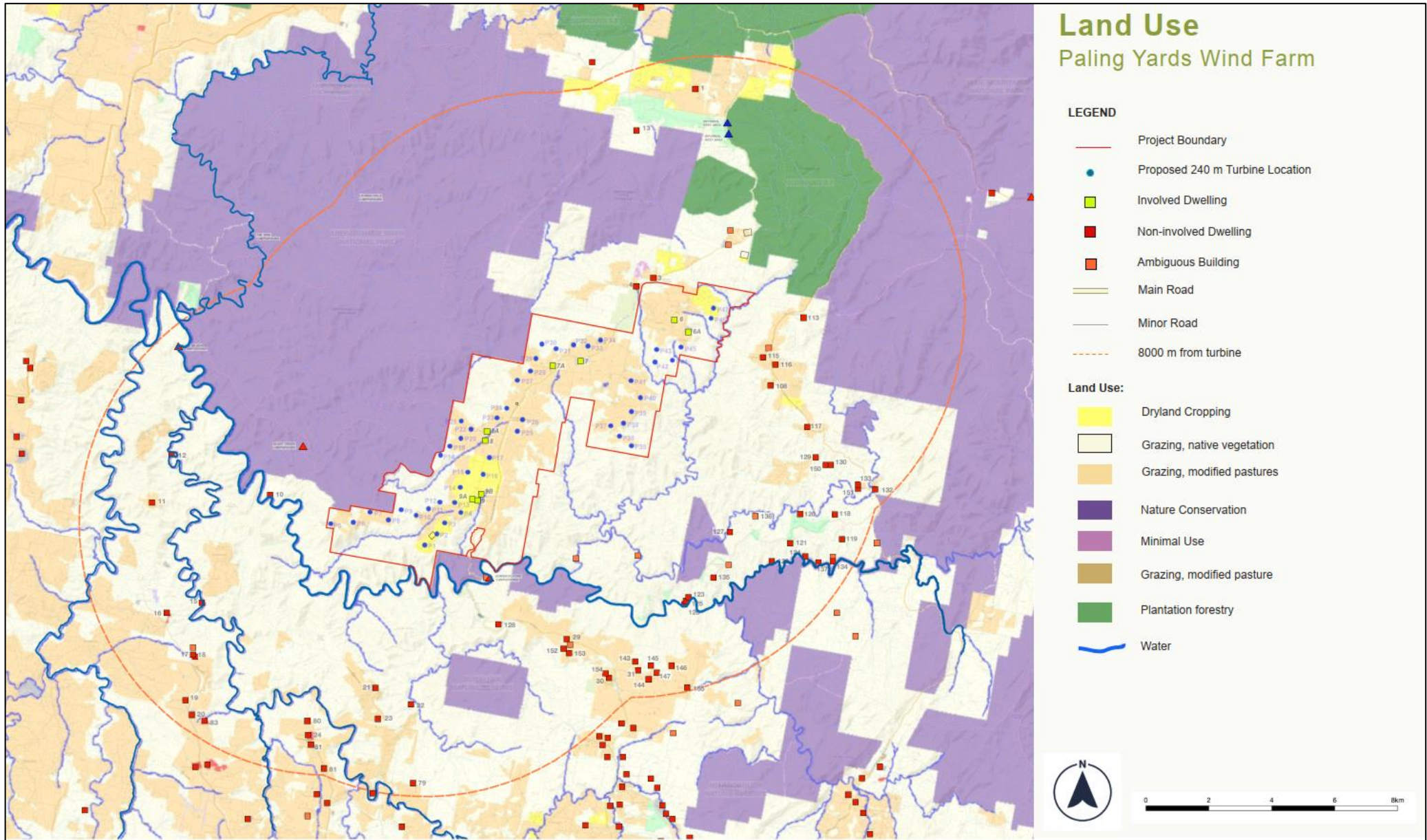


Figure 2. Land Use Plan - Paling Yards (Figure 7 – LVIA, Moir, 2023)

The site extends over a number of lots which are identified as follows:

Table 1. Involved Identified Lots

Site Address	Lot/DP	Lot Involvement
7056 Abercrombie Road Paling Yards 2580	Lot 1 / DP 753019	· WTG and ancillary
7056 Abercrombie Road Paling Yards 2580	Lot 2 / DP 753019	· WTG and ancillary
7056 Abercrombie Road Paling Yards 2580	Lot 3 / DP 753019	· WTG and ancillary
7056 Abercrombie Road Paling Yards 2580	Lot 4 / DP 753019	· WTG and ancillary
7056 Abercrombie Road Paling Yards 2580	Lot 30 / DP 753019	· WTG and ancillary
7056 Abercrombie Road Paling Yards 2580	Lot 31 / DP 753019	· WTG and ancillary
7056 Abercrombie Road Paling Yards 2580	Lot 32 / DP 753019	· WTG and ancillary
7056 Abercrombie Road Paling Yards 2580	Lot 1 / DP 753037	· WTG and ancillary
6466 Abercrombie Road Paling Yards 2580	Lot 2 / DP 753037	· WTG and ancillary
7056 Abercrombie Road Paling Yards 2580	Lot 5 / DP 753037	· WTG and ancillary
6335 Abercrombie Road Paling Yards 2580	Lot 6 / DP 753037	· WTG and ancillary
6055 Abercrombie Road Paling Yards 2580	Lot 7 / DP 753037	· WTG and ancillary
7056 Abercrombie Road Paling Yards 2580	Lot 11 / DP 753037	· WTG and ancillary
7056 Abercrombie Road Paling Yards 2580	Lot 13 / DP 753037	· WTG and ancillary
7056 Abercrombie Road Paling Yards 2580	Lot 14 / DP 753037	· WTG and ancillary
6055 Abercrombie Road Paling Yards 2580	Lot 15 / DP 753037	· WTG and ancillary
6335 Abercrombie Road Paling Yards 2580	Lot 16 / DP 753037	· WTG and ancillary
7056 Abercrombie Road Paling Yards 2580	Lot 17 / DP 753037	· WTG and ancillary
7056 Abercrombie Road Paling Yards 2580	Lot 18 / DP 753037	· WTG and ancillary
6055 Abercrombie Road Paling Yards 2580	Lot 19 / DP 753037	· WTG and ancillary
7056 Abercrombie Road Paling Yards 2580	Lot 20 / DP 753037	· WTG and ancillary
7056 Abercrombie Road Paling Yards 2580	Lot 21 / DP 753037	· WTG and ancillary
6335 Abercrombie Road Paling Yards 2580	Lot 22 / DP 753037	· WTG and ancillary
7056 Abercrombie Road Paling Yards 2580	Lot 23 / DP 753037	· WTG and ancillary
7056 Abercrombie Road Paling Yards 2580	Lot 24 / DP 753037	· WTG and ancillary
7056 Abercrombie Road Paling Yards 2580	Lot 25 / DP 753037	· WTG and ancillary
6335 Abercrombie Road Paling Yards 2580	Lot 26 / DP 753037	· WTG and ancillary
7056 Abercrombie Road Paling Yards 2580	Lot 27 / DP 753037	· WTG and ancillary
6335 Abercrombie Road Paling Yards 2580	Lot 28 / DP 753037	· WTG and ancillary
6790 Abercrombie Road Paling Yards 2580	Lot 31 / DP 753037	· WTG and ancillary
6055 Abercrombie Road Paling Yards 2580	Lot 34 / DP 753037	· WTG and ancillary
7056 Abercrombie Road Paling Yards 2580	Lot 35 / DP 753037	· WTG and ancillary

6790 Abercrombie Road Paling Yards 2580	Lot 39 / DP 753037	· WTG and ancillary
6335 Abercrombie Road Paling Yards 2580	Lot 40 / DP 753037	· WTG and ancillary
6466 Abercrombie Road Paling Yards 2580	Lot 41 / DP 753037	· WTG and ancillary
6466 Abercrombie Road Paling Yards 2580	Lot 42 / DP 753037	· WTG and ancillary
6790 Abercrombie Road Paling Yards 2580	Lot 43 / DP 753037	· WTG and ancillary
6335 Abercrombie Road Paling Yards 2580	Lot 44 / DP 753037	· WTG and ancillary
7056 Abercrombie Road Paling Yards 2580	Lot 45 / DP 753037	· WTG and ancillary
6055 Abercrombie Road Paling Yards 2580	Lot 48 / DP 753037	· WTG and ancillary
7056 Abercrombie Road Paling Yards 2580	Lot 49 / DP 753037	· WTG and ancillary
7056 Abercrombie Road Paling Yards 2580	Lot 50 / DP 753037	· WTG and ancillary
7056 Abercrombie Road Paling Yards 2580	Lot 51 / DP 753037	· WTG and ancillary
6650 Abercrombie Road Paling Yards 2580	Lot 53 / DP 753037	· WTG and ancillary
6790 Abercrombie Road Paling Yards 2580	Lot 56 / DP 753037	· WTG and ancillary
7056 Abercrombie Road Paling Yards 2580	Lot 61 / DP 753037	· WTG and ancillary
6057 Abercrombie Road Paling Yards 2580	Lot 2 / DP 753064	· WTG and ancillary
6057 Abercrombie Road Paling Yards 2580	Lot 6 / DP 753064	· WTG and ancillary
6055 Abercrombie Road Paling Yards 2580	Lot 41 / DP 753064	· WTG and ancillary
6055 Abercrombie Road Paling Yards 2580	Lot 56 / DP 753064	· WTG and ancillary
6057 Abercrombie Road Paling Yards 2580	Lot 67 / DP 753064	· WTG and ancillary
7056 Abercrombie Road Paling Yards 2580	Lot 41 / DP 1025920	· WTG and ancillary
6790 Abercrombie Road Paling Yards 2580	Lot 51 / DP 621232	· WTG and ancillary

Involved Lots Associated with the Transmission Line

Additionally, the involved lots associated with the transmission line as part of the Project are listed within the table below:

Table 2. Involved Lots for the Project - Transmission Line (NSW Planning Portal, 2021)

Site Address	Lot/DP	Lot Involvement
6466 Abercrombie Road Paling Yards 2580	Lot 2 / DP 753037	· Transmission Line & Associate Infrastructure
6335 Abercrombie Road Paling Yards 2580	Lot 16 / DP 753037	· Transmission Line & Associate Infrastructure
6335 Abercrombie Road Paling Yards 2580	Lot 40 / DP 753037	· Transmission Line & Associate Infrastructure
6055 Abercrombie Road Paling Yards 2580	Lot 56 / DP 753064	· Transmission Line & Associate Infrastructure
6057 Abercrombie Road Paling Yards 2580	Lot 67 / DP 753064	· Transmission Line & Associate Infrastructure

2.1.2 Zoning

The site is governed by *Oberon Local Environmental Plan 2013 (OLEP)* which determines the land use within the *Oberon Local Government Area (LGA)*. The site is predominantly zoned as *RU1 Primary Production*.

As per the LEP, the key objectives of the *RU1 Primary Production* zone are:

- 'To encourage sustainable primary industry production by maintaining and enhancing the natural resource base.
- To encourage diversity in primary industry enterprises and systems appropriate for the area.
- To minimise the fragmentation and alienation of resource lands.
- To minimise conflict between land uses within this zone and land uses within adjoining zones.
- To enable other forms of development associated with primary production activities, which may require an isolated location or which support tourism or recreational activities.'

The primary objective of the *RU1* zone is to encourage primary production. The project is classified as 'electricity generating works' under the *State Environmental Planning Transport and infrastructure 2021* and is permissible within the *RU1 Primary Production* zone subject to development consent.

Figure 3 below provides an overview of the site zoning in relation to its surrounds.

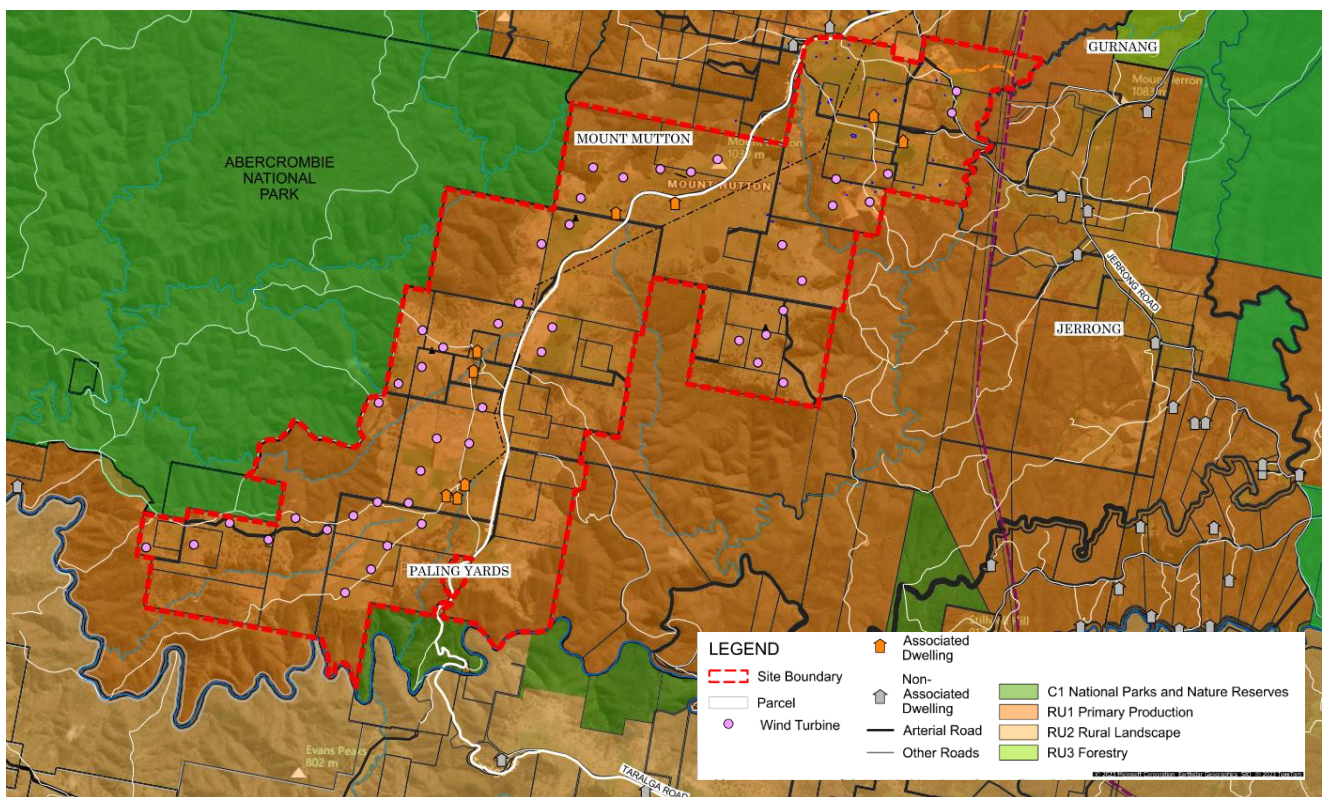


Figure 3. *Paling Yards and Surrounds Zoning Map (Source: Tract 2023)*

Figure 4 illustrates the proposed site layout, wind tower and transmission infrastructure locations

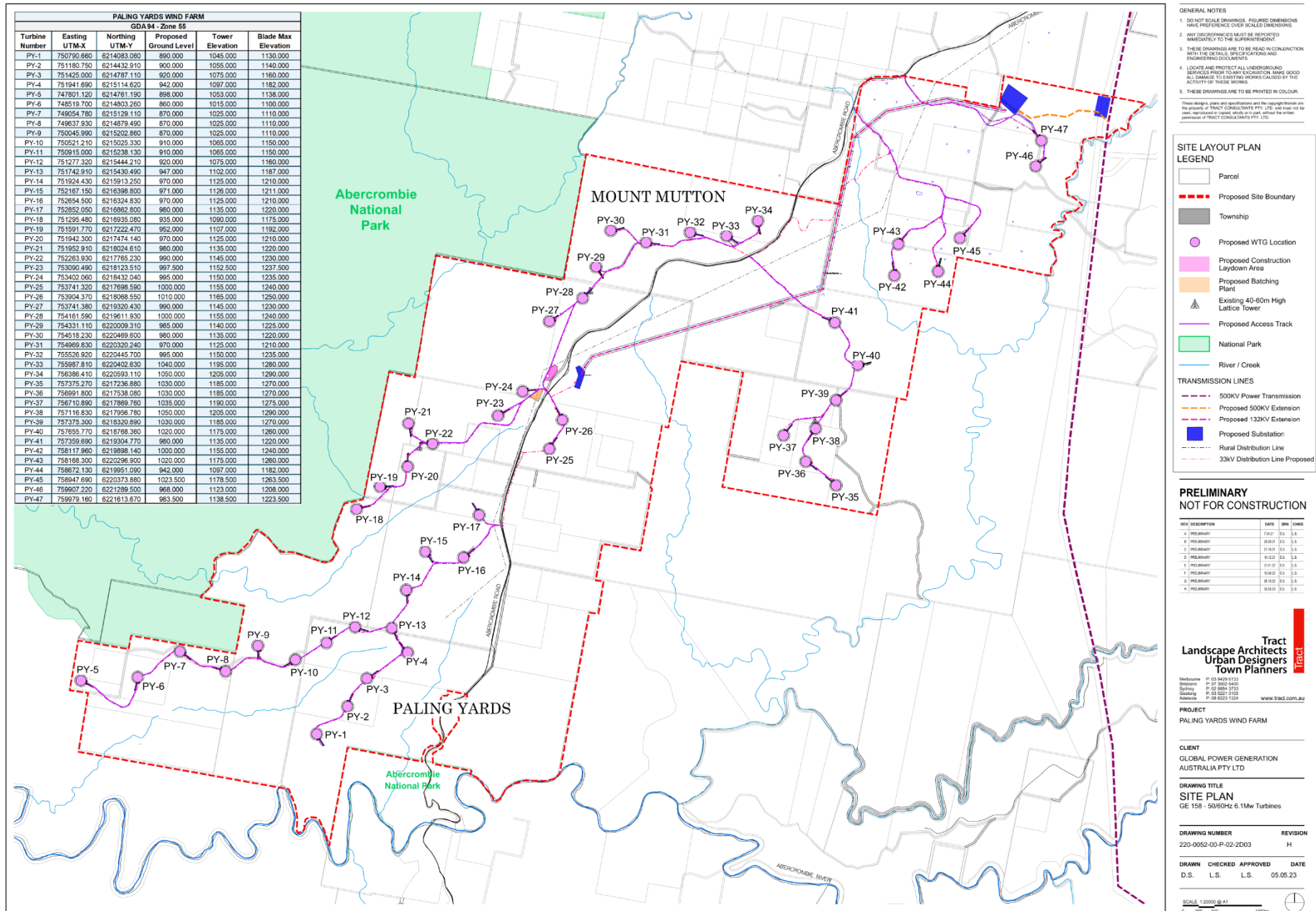


Figure 4. Site Plan Wind Turbine Location (Source: Tract 2023)

2.2 Site History and Surrounding Land Use

The project site is located at the western extent of the Great Dividing Range in NSW, 60km south of Oberon, 75km north of Goulburn and approximately 140km west of Sydney. The site is bordered by national parks and uncleared land to the south-east all of which are heavily vegetated. Abercrombie National Park borders the site to the west and south, and to the east is the Wiarborough Nature Reserve and Blue Mountains National Park.

As mentioned earlier, the project site is approximately 4,600 hectares in size which is referred to as 'Mingary Park', 'Paling Yards', 'Middle Station' and 'Hilltop'. The site is accessible via Abercrombie Road, which is the main road from Oberon to Taralga. The site's topography is varied, with steep vegetated slopes in some areas characterised by the connectivity to the surrounding bushland which comprise of national parks, conservation areas and reserves. The site includes several ephemeral creeks and drainage lines, which drains into Abercrombie River. Most of the project site has been cleared of native vegetation, although scattered trees are common within the site, and thicker vegetation exists near the boundaries to the west, east and south.

Rural residential dwellings are located throughout with surrounding land use primarily being for agricultural purposes particularly for sheep and cattle grazing. The site has no existing significant development other than the residential dwellings and agricultural uses.



Figure 5. Site Photo facing Southwest from Abercrombie Road (Source: Tract 2020)



Figure 6. Site Photo facing Southeast from Abercrombie Road (Source: Tract 2020)



Figure 7. Site photo facing Southwest from Abercrombie Road (Source: Tract 2020)



Figure 8. Site Photo facing Southwest overlooking site from Golspie (Source: Tract 2020)



Figure 9. Site Photo facing Southwest from 6660 Abercrombie Rd, Paling Yards (Source: Tract 2020)

The site is being primarily used for agricultural purposes. The largest source of land use disturbance throughout the Project area to date is attributed to farming activities, having resulted in land clearances, construction of buildings (homesteads and sheds), installation of fences, construction of dams and irrigation systems, and intensive stock grazing. As noted previously, the project involves the installation, operation and maintenance of a wind farm development that will comprise of the following:

- Up to forty- seven (47) Wind Turbine Generators (WTGs) inclusive of tower, blades and components required for the generation of electricity using wind power.
- Overall WTG maximum blade tip height of up to 240, with a total of three (3) blades per turbine.
- Construction of up to three (x3) wind monitoring masts fitted with various instruments such as anemometers, wind vanes, temperature gauges and potentially other electrical equipment.
- Construction of on-site collector substation (33/132kV) with associated control room, maintenance building, switchgear, and associated control systems.
- Approximately 8km of 132kV overhead powerlines (with a total easement of 45m in width) to connect the collector substation to the switching station (including control room and other associated grid facilities).
- An on-site switching station (132/500kV) to connect to the existing TransGrid 500kV Mount Piper to Bannaby transmission line (including control room and other associated grid connection facilities).
- Cut-in works on the 500kV Mount Piper to Bannaby transmission line to connect it to the switching substation, resulting on a section of approximately 1km of 500kV transmission line (with a total easement width of 70m).
- Roadworks and upgrades to local road infrastructure at key access points along Abercrombie Road and internal tracks for vehicle access to turbines and infrastructure.
- Obstacle lighting to selected turbines (if required).
- Removal of native vegetation and additional vegetation planting to provide screening (as required).
- Temporary facilities, including a batching plant to supply concrete, a laydown area for during construction, and a demountable site office and site store within the laydown area.

The Wind Farm is proposed to be in operation between 2025-2055 and will operate 24 hours per day, 7 days per week.

The proposal will include the provisions to allow for the micro-siting of turbines, ancillary infrastructure and temporary facilities post development consent during the optimisation and detailed design phase. The relevant specialist assessments have therefore considered the 100m wide radius for the turbines and 50m wide corridor for ancillary equipment as part of the micro-siting approach.

The proposed Wind Farm would alter the existing agricultural landscape of the Site by establishing an electricity generating land use. Nevertheless, the proposed development would not preclude other land uses on or around the Site, nor would the proposed Wind Farm be incompatible with other uses.

To understand compatibility of the proposed Wind Farm with its surrounding land uses, a review of relevant environmental and amenity issues has been undertaken, focusing on issues which may arise from the Wind Farm and its potential to affect adjacent and nearby and uses.

3 Land Use Conflict Risk Assessment

The LUCRA process uses a “probability and consequences” matrix to estimate the potential for land use conflict. It assesses the environmental, public health and amenity impacts according to the:

- Probability of occurrence; and
- Consequence of the impact.

3.1 Applying LUCRA

The initial risk evaluation methods recommended by the LUCRA Guide have been reproduced below in Table 3 through to Table 5.

Table 3. Risk ranking Matrix (LUCRA Guide, 2011)

Probability	A	B	C	D	E
Consequence					
1	25	24	22	19	15
2	23	21	18	14	10
3	20	17	13	9	6
4	16	12	8	5	3
5	11	7	4	2	1

The risk ranking matrix yields a risk ranking from 25 to 1.

It covers each combination of five levels of ‘probability’ (A to E defined in Table 4) and five levels of ‘Consequence’ (1 to 5 defined in Table 5) to identify the risk ranking of each impact.

Table 4. Probability Table (LUCRA Guideline)

Level	Descriptor	Description
A	Almost Certain	Common or repeating occurrence
B	Likely	Known to occur, or ‘it has happened’
C	Possible	Could occur, or ‘I’ve heard of it happening’
D	Unlikely	Could occur in some circumstances, but not likely to occur
E	Rare	Practically impossible

Table 5. Measure of Consequence (LUCRA Guideline)

Level	Descriptor	Description	Example/Implication
1	Severe	<ul style="list-style-type: none"> · Severe and/or permanent damage to the environment · Irreversible · Severe impact on the community · Neighbours are in prolonged dispute and legal action involved 	<ul style="list-style-type: none"> · Harm or death to animals, fish, birds or plants · Long term damage to soil or water · Odours so offensive some people are evacuated or leave voluntarily · Many public complaints and serious damage to Council’s reputation · Contravenes Protection of the Environment & Operations Act and the conditions of Council’s

			licences and permits. Almost certain prosecution under the POEO Act
2	Major	<ul style="list-style-type: none"> · Serious and/or long-term impact to the environment · Long-term management implications · Serious impact on the community · Neighbours are in serious dispute 	<ul style="list-style-type: none"> · Water, Soil or air impacted, possibly in the long term · Harm to animals, fish, birds, or plants · Public complaints. Neighbour disputes occur. Impacts quickly · Contravenes the conditions of Council's licences, permits and the POEO Act · Likely Prosecution
3	Moderate	<ul style="list-style-type: none"> · Moderate and/or medium-term impact to the environment and community · Some ongoing management implications · Neighbour disputes occur 	<ul style="list-style-type: none"> · Water, soil or air known to be affected, probably in the short term · No serious harm to animals, fish, birds or plants · Public largely unaware and few complaints to Council · May contravene the conditions of Council's Licences and the POEO Act · Unlikely to result in prosecution
4	Minor	<ul style="list-style-type: none"> · Minor and/or short-term impact to the environment and community · Can be effectively managed as part of normal operations · Infrequent disputes between neighbours 	<ul style="list-style-type: none"> · Theoretically could affect the environment or people but no impacts noticed · No complaints to Council · Does not affect the legal compliance status of Council
5	Negligible	<ul style="list-style-type: none"> · Very minor impact to the environment and community · Can be effectively managed as part of normal operations · Neighbour disputes unlikely 	<ul style="list-style-type: none"> · No measurable or identifiable impact on the environment · No measurable impact on the community or impact is generally acceptable

3.2 Initial Risk Evaluation

This Section details:

- The activity that may cause a conflict;
- The potential conflict arising from that activity; and
- Risk rating without mitigation or management measures.

A list of the potential sources of conflict arising from the project have been developed and are presented in Table 6 below.

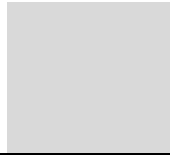
Table 6. Initial Risk Evaluation

Activity	Identified Potential Conflict	Risk Ranking
Construction	<ul style="list-style-type: none"> · Impacts to surrounding heritage items and values. · Generation of dust, affecting human health, animal health and viability of grazing activities. · Exceedance of noise management levels on a frequent basis, affecting human amenity. · Contamination or sedimentation of surrounding water courses and subsequent impact on health of livestock. · Increased heavy vehicle movements resulting in road safety issues for livestock and vehicles. 	21

	<ul style="list-style-type: none"> · Potential adverse impacts existing visual amenity of surrounding residents and roads users. · Potential impact of noise to surrounding dwellings and other sensitive uses. · Social impact assessment to be undertaken to assess the impacts. · Assess disruptions to farming practices ranging from biosecurity risks to farm access impacts, and interruptions to normal activities due to construction traffic and delivery. · Use of environmental resources (water, stone, etc.) which may be limited to the site's location. 	
Traffic/ Transport and Access	<ul style="list-style-type: none"> · Increased traffic generation within the site with workers travelling to and from the site, particularly during the construction period. · Transport of materials to site, which would require an increased number of heavy vehicles to use the surrounding roads. · Access route from Newcastle to Paling Yards - assessed on a number of factors including the restrictions posed by biodiversity, size of load, extent of roads, including turns and inclines/declines, etc. · Traffic control measures and speed reduction. · Sighting distance on rural roads to enable safe access to and from the roads. · Increased traffic generation on lower order roads including Littlebourne Street, O'Connell Road, and Abercrombie Road. · Degradation of local access roads through consistent heavy vehicle movements, resulting in road conditions that may cause damage to other vehicles or compromise road safety. 	21
Visual Amenity	<ul style="list-style-type: none"> · Visual impacts from surrounding vantage points and national parks. · Activities will result in physical change in the landscape. · Potential adverse impacts upon the existing visual amenity of surrounding residents and roads users. · Project visible (in part) from six Land Character Units (LCUs). 	18
Noise Amenity	<ul style="list-style-type: none"> · Construction activities to generate a significant amount of noise during construction hours. · Operational noise will be generated from the wind farm and could potentially impact surrounding residential dwellings. · Environmental impacts on wildlife in the area with noise possibly impacting their ability to communicate, navigate and forage. 	18
Shadow Flicker	<ul style="list-style-type: none"> · Disturbance caused by shadow flicker to surrounding areas, environment and livestock. · Potential shadow flicker impacts on involved and non-involved dwelling owners. 	13
Biodiversity	<ul style="list-style-type: none"> · Clearing and modification of native vegetation communities and fauna habitat. · Impacts on local populations of native species. · Removal of hollow-bearing trees and subsequent impact on hollow-dependent native fauna. · Removal of woody debris and bush rocks. · Mortality and injury to native fauna during vegetation clearing. 	23

	<ul style="list-style-type: none"> · Inadvertent impacts on adjacent habitat or vegetation during construction reducing the condition of retained native vegetation adjacent to the Proposal. · Reduced viability of adjacent habitat due to edge effects reducing the condition and habitat quality of retained native vegetation and affecting habitat use or movements of some species. · Reduced viability of adjacent habitat due to noise, dust and/or light spill disrupting habitat during construction and operation. · Transport of weeds and pathogens from the site to adjacent vegetation reducing the condition of adjacent native vegetation. 	
Biosecurity	<ul style="list-style-type: none"> · Highest risk associated with this activity during the construction phase of the Project. · Three species of exotic flora have been identified on the site. · Five pest animal species have been recorder within the Project area (Wild Dog, Red Fox, Fallow Deer, Rabbit, Common Myna). · Activities that could potential introduce or spread weeds and facilitate pert animal incursion include: <ul style="list-style-type: none"> ◦ Movement of construction and operation vehicles ◦ Ground disturbance ◦ Vegetation clearing ◦ Delivery of materials ◦ Ongoing site management and operational activities. · Transport of weeds and pathogens from the site to adjacent vegetation. 	18
Heritage	<ul style="list-style-type: none"> · Loss of Aboriginal cultural heritage landscape and significance. · Loss of historic heritage landscape and significance. · Changed conditions to the site such as wind can contribute to the decline in heritage maintenance (e.g., increased erosion from wind). · Potential for archaeological remains to be uncovered during construction (e.g., chance find). 	18
Social Impact	<ul style="list-style-type: none"> · Impacts on social infrastructure and availability of services due to increase population/demand for services. · Disruptions to farming practices because of Project construction. · Impacts to existing agricultural operations, including efficiency or aerial agricultural applications in the vicinity of the Project. · Impacts to telecommunication services and infrastructure. · Perceived health impacts from electromagnetic interference. · Degradation to local roads. · Increased demand for short and long-term accommodation in adjacent towns. · Perceived impact to neighbouring land values. · Impacts to tangible and intangible Aboriginal Heritage. 	23
Economic Impact	<ul style="list-style-type: none"> · Impacts to land value. · Potential loss of agricultural activities and therefore loss of economic return. · Some aspects of the works require a specific skill and would require workers external to the region to work. 	20

- Direct and indirect regional economic impact.
 - Need for a community benefit scheme.
 - Voluntary Planning Agreement (VPA) to be offered/considered.
-



3.3 Risk Reduction Controls

Risk reduction controls help to provide insight into:

- Management strategies for each identified conflict that could help lower the risk level
- Re-asses the risk level based on these management strategies being implemented
- For each of the strategies, identify performance targets and details of how the effectiveness of the strategy will be monitored.

Solutions to these identified risks will be dependent on a range of factors including, local government circumstances, planning rules and guidelines and industry expectations.

Table 7 below provides a summary of the key management strategies to be implemented in order to reduce the possibility of the risk or impact caused by it.

Table 7. Management Strategy

Identified Potential Conflict	Management Strategy (Method of Control)	Existing Risk Ranking	Performance Target	Revised Risk Ranking
Construction	<ul style="list-style-type: none"> · Dust mitigation techniques to consider: <ul style="list-style-type: none"> ◦ Cover bare soil; ◦ Use a water truck or temporary irrigation to keep haul roads damp; ◦ Spread gravel or mulch to better contain fine soil particles; ◦ Phase site clearance to only clear areas to be worked on; and ◦ Lower Travel Speeds · Construction works to be undertaken at operational hours stated in the EIS. · Provision of road upgrades at certain points which will be the main use/access points for construction site traffic. 	21	<ul style="list-style-type: none"> · Environmental Management Plan to be prepared to address concerns surrounding overall environmental health and sustainability. 	17
Traffic/Transport and Access	<ul style="list-style-type: none"> · Development of 5 new intersections via Abercrombie Road. Some access points would provide dual access to internal tracks used to facilitate movement of vehicles between access locations and infrastructure. · Preferred Haulage Route to be via Mudgee avoiding the Blue Mountains route. · Use of communal transport for workers. · Further engagement with TfNSW prior to construction. 	21	<ul style="list-style-type: none"> · Recommendation that a Construction Traffic Management Plan (CTMP) or equivalent document be prepared prior to substantial commencement of construction activities but following approval of the EIS. 	15
Visual Amenity	<ul style="list-style-type: none"> · Residence Screen Planting. · Residence Supplementary Planting. <ul style="list-style-type: none"> ◦ Provision of additional planting of trees and bushes to buffer the visual impacts of the WTG's. · Uniformity in the colour, design, height and rotor diameter. 	18	<ul style="list-style-type: none"> · To reduce the visual impact from residences and public viewpoints. 	17

	<ul style="list-style-type: none"> The use of simple muted colours and non-reflective materials to reduce distant visibility and avoid drawing the eye. Blades, nacelle and tower to appear as the same colour. Avoidance of unnecessary lighting, signage, logos etc. 			
Noise	<ul style="list-style-type: none"> Establish ambient noise levels at receptor locations. Utilising noise optimised modes or substitution of quieter WTGs in proximity to the receptors. Reduced noise modes to either 104 dBA mode or 101 dBA for specific WTG identified as; <ul style="list-style-type: none"> PY-4 at 101 dBA mode; PY-13 at 104 dBA mode; PY-14 at 101 dBA mode; PY-15 at 101 dBA mode; PY-16 at 104 dBA mode; PY-17 at 101 dBA mode; PY-20 at 101 dBA mode; PY-21 at 101 dBA mode; PY-22 at 101 dBA mode; PY-23 at 104 dBA mode; PY-29 at 101 dBA mode; PY-32 at 104 dBA mode; PY-33 at 104 dBA mode; PY-34 at 101 dBA mode; and PY-45 at 104 dBA mode Consider and assess the construction noise and vibration impacts. 	18	<ul style="list-style-type: none"> Potential for improved internal acoustic amenity through implementing building acoustic treatment. Implement turbine noise management modes to reduce noise generation at selected turbines. Ensure ongoing compliance of NSW <i>Policy for Industry</i> for the operation of transformer and substation equipment and activities during night-time. Ensure all noise levels comply with the NSW Interim Construction Noise Guidelines. Construction noise could be mitigated through: <ul style="list-style-type: none"> Scheduling construction work for less critical days and times Using alternative, quieter equipment Keep the community informed of planned activities Record keeping and tracking of complaints about construction noise It is expected the traffic noise will comply with the <i>Road Noise Policy</i> and no further mitigation is required. Assess all noise and vibration activities in the 'worst case' scenario to ensure compliance. 	8
Shadow Flicker	<ul style="list-style-type: none"> Relocation of Turbine to reduce the disturbance of shadow flicker to some residential areas. 	13	<ul style="list-style-type: none"> Minimise the amount of shadow flicker experienced at surrounding areas; particularly 	8

	<ul style="list-style-type: none"> Installation of screening structures and or planting of additional trees to block shadows cast by turbines Using turbine control strategies to shut down turbines when it is predicted shadow flicker it likely to occur. 		involved dwellings expected to be impacted by the turbines shadow flicker.	
Biodiversity	<ul style="list-style-type: none"> Overhead transmission line: Relocation of this transmission line as to avoid removal or modification of remnant native vegetation. Undertake assessments of monthly mortality Access tracks and crane pads: <ul style="list-style-type: none"> WTGs P2, P6 and P7 to be relocated as to avoid the disturbance of a Box Gum Woodland environmental stewardship area. WTG P11 to be relocated as to avoid the disturbance from within a remnant native woodland. WTGs P10, P13 and P14 to be moved closer to the edge of a remnant red stringybark woodland and broadleaved peppermint woodland. WTGs P6, P7, P9, P10 and P11 to be removed or relocated, whichever is more sufficient as to not impact Blue Gum Woodland due to high numbers of hollow-bearing trees being recorded within these areas. 	23	<ul style="list-style-type: none"> Bird and Bat Adaptive Management Plan; <ul style="list-style-type: none"> Recommends monitoring which would include assessments of monthly mortality and periodic BBUS, to assess and adjust mitigation measures. Preparation of a Flora and Fauna Management Plan as part of the Construction Environmental Management Plan. Ensure implementation of Vegetation clearing protocols. For every hollow-bearing tree that is removed a nest-box will be installed. Implement appropriate weed management protocols and undertake Biosecurity Risk Management Plan. Install appropriate sediment and erosion controls. 	17
Biosecurity	<ul style="list-style-type: none"> Foot and Mouth Disease awareness and management Record Keeping Targeted weed management Pest animal management Ensure ongoing and regular monitoring of the Project area. Evaluate success of the Biosecurity Risk Management Plan throughout the Project. 	18	<ul style="list-style-type: none"> Training to be provided to employees and subcontractors on Foot and Mouth Disease and present pests and weeds. Visitors or workers are prohibited of touching or feeding livestock. Footwear and clothing to be washed and disinfected before entering site. Mechanical and chemical control of weeds to be used in accordance with the relevant guidelines 	8

			<ul style="list-style-type: none"> and as per the Biosecurity Risk Management Plan. Exclusion fencing to be installed where suitable/possible to help manage pest animals. Any biosecurity matters detected should be immediately reported to the relevant authorities. 	
Heritage	<ul style="list-style-type: none"> Loss of cultural heritage landscape Changed conditions to the site such as wind can contribute to the decline in heritage maintenance e.g., increased erosion from wind. Prepare and implement a Chance Find Procedure. Develop and implement a Cultural Heritage Management Plan. Repatriate archaeological material. 	18	<ul style="list-style-type: none"> Increase in protection and management techniques to be identified in the Heritage assessment report. Ongoing monitoring of sites to ensure they are maintained. It is recommended that a Cultural Heritage Management Plan be developed for the site prior to any construction. 	13
Social	<ul style="list-style-type: none"> Develop and implement a Stakeholder Engagement Plan (SEP). Develop and implement a grievance mechanism to ensure that road user concerns/complaints are identified and acted upon. Develop and implement a Local Employment Plan. Monitor for skills shortages within the region and take this into consideration with EPC recruitment objectives. Develop and implement a local content plan. Repair damage to Council roads and/or upgrade roads as required. Undertake a localised visual impact assessment where merited. Develop and implement an Operational Environmental Management Plan. 	23	<ul style="list-style-type: none"> Monitor, address and resolve number of complaints. Record local employment and employee retention rates. Record and monitor percentage survival rate of trees planted. 	13

Economic

- Employment of regional residents preferentially where they have the required skills and experience and can demonstrate a cultural fit with the organisation.
- Participating, as appropriate, in business group meetings, events or programs in the regional community.
- Locally sourcing non-labour inputs to production where local producers can be cost and quality competitive.
- A neighbouring property benefit scheme so the eligible properties neighbouring the wind farm site see a direct benefit from the Project.
- Provision of community grants through various initiatives and programs within the local community, including the education, arts, sporting, and culture sectors.
- Value adds to a number of industries which are noted to boost regional economy and employment.

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- GPGA proposes to work in partnership with the Oberon Council and the local community so that the benefits of the project economic growth in the region is maximised and impacts minimised.
- It is further proposed that a Voluntary Planning Agreement be established to ensure Oberon Council can administer a range of community infrastructure needs and programs.

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3.4 Performance Monitoring

The performance of the proposed mitigation and management measures would be evaluated through a process of internal reviewing and consulting with affected receivers and stakeholders.

All activities identified in the evaluation process will be undertaken in accordance with the mitigation measures outlined in the EIS as well as environmental management plans prepared for construction.

The below assessments and plans have been prepared and describe how the proposed activities should be managed to reduce their impacts on the environment:

- Aviation Impact Assessment.
- Blade Transport Assessment.
- Blade Throw Assessment.
- Biodiversity Assessment.
- Biosecurity Risk Management Plan.
- Bushfire Assessment.
- Community and Stakeholder Engagement.
- Electro and Magnetic Fields Assessment.
- Fauna Assessment.
- Flood Assessment.
- Geotechnical Assessment.
- Health Assessment.
- Heritage Impact Assessment.
- Landscape and Visual Impact Assessment.
- Noise Assessment.
- Rehabilitation and Decommissioning Plan.
- Shadow Flicker Assessment.
- Social Impact and Economic Assessment.
- Soil Survey and Hydrology Assessment.
- Electromagnetic Interference Assessment.
- Traffic Impact Assessment.
- Waste Management Plan.

During the construction, operational and decommissioning phases of the project, the activities will be checked against the commitments made in the EIS (Section 7.4), the conditions of consent issued by the Controlling Authority and other Agencies, and the relevant environmental management plans prepared by a suitable qualified environmental professional. Seeking compliance of these conditions is crucial for the reduction of the extent of amenity impacts to neighbouring properties and affected stakeholders, in turn reducing the potential for any land use conflict.

During the construction, operation, and decommissioning of this project it is important to ensure that the community and relevant agencies are well informed and have the opportunity to convey their concerns. All efforts will be made to ensure these concerns are addressed at the earliest possible stage.

To ensure that these commitments are met, the proponent has provided the following broad targets to facilitate the monitoring of performance measures aimed at reducing land use conflict:

- Compliance with relevant legislation, commitments made in the EIS, conditions or consent and relevant environmental plans throughout construction, operation, and decommissioning activities.

- Availability of contact details on the Project website.
- Contact to be made with relevant stakeholders or community members within seven business days after receiving a complaint, with the aim to provide an efficient and fast resolution.
- Development and implementation of a Construction Environmental Management Plan.
- Development and implementation of a Biosecurity Risk Management Plan.
- Preparation of a Cultural Heritage Management Plan.

4 Conclusions and Recommendations

This Land Use Conflict Risk Assessment (LUCRA) has identified several potential sources of land use conflict. It is recognised that the development would allow the surrounding existing land uses to remain largely unaffected. The potential for land use conflict is considered to be manageable, especially considering the mitigation and management measures described in this report, as well as the environmental management plans that will be implemented to manage on-site amenity and off-site amenity impacts.

The primary potential sources of land use conflict anticipated for the project are a result of amenity impacts arising from the construction and operational phases of the project. These include:

- Construction Works:
 - Generation of dust;
 - Impacts to surrounding Heritage items including Aboriginal and non-Aboriginal heritage;
 - Exceedance of noise;
 - Contamination of sedimentation of watercourses;
 - Heavy vehicle movements causing safety issues and damaging roads;
 - Impact to visual amenity, including landscape and road use; and
 - Disturbance of vegetation, ecosystems, wildlife and farming activities.
- Operational Phase:
 - Impact to visual amenity of the landscape;
 - Noise impacting surrounding residential dwellings, and wildlife;
 - Ongoing impacts due to wind turbine operations and blade rotations on wildlife; and
 - Reduced productivity of the land for agricultural and grazing activities.

With the application of relevant mitigation measures, each of the potential sources of conflict are considered to be low, with the exception of some proposed impacts such as visual amenity. In these cases, the land use conflict impacts of these items will be lowered as much as possible to help reduce the impact to the surrounding environment.

The mitigation measures proposed in this LUCRA have been largely sourced from the Project's EIS and supporting reports and documentation. These measures are specific, easy to understand and relatively easy to implement by the Proponent. These mitigation measures are commonly used and are therefore considered to be sufficient in ensuring the project will have the most minimal impacts and therefore help to avoid significant land use conflict.

An updated LUCRA can be undertaken prior to the commencement of any construction activities and as part of the Construction Environmental Management Plan, if so required.
