Department of Planning, Housing and Infrastructure

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Spicers Creek Wind Farm

State Significant Development Assessment Report (SSD 41134610)

July 2024

Acknowledgement of Country

The Department of Planning, Housing and Infrastructure acknowledges that it stands on Aboriginal land. We acknowledge the Traditional Custodians of the land and show our respect for Elders past and present through thoughtful and collaborative approaches to our work, seeking to demonstrate our ongoing commitment to providing places in which Aboriginal people are included socially, culturally and economically.

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Preface

This assessment report provides a record of the Department of Planning, Housing and Infrastructure's (the Department) assessment and evaluation of the State significant development (SSD) application for the Spicers Creek Wind Farm located approximately 25 kilometres north west of Gulgong, lodged by Spicers Creek Wind Farm Pty Ltd. The report includes:

- an explanation of why the project is considered SSD and who the consent authority is;
- an assessment of the project against government policy and statutory requirements, including mandatory considerations;
- a demonstration of how matters raised by the community and other stakeholders have been considered;
- an explanation of any changes made to the project during the assessment process;
- an assessment of the likely environmental, social and economic impacts of the project;
- an evaluation which weighs up the likely impacts and benefits of the project, having regard to the proposed mitigations, offsets, community views and expert advice; and provides a view on whether the impacts are on balance, acceptable; and
- an opinion on whether the project is approvable or not, along with the reasons, to assist the Independent Planning Commission in making an informed decision about whether development consent for the project can be granted and any conditions that should be imposed.

Executive Summary

This report details the Department's assessment of the State significant development application SSD-41134610 for the Spicers Creek Wind Farm and will be provided to the Independent Planning Commission (the Commission) for their consideration when deciding whether to grant consent to the SSD.

Spicers Creek Wind Farm Pty Ltd, a project entity owned by the Squadron Energy group of companies (Squadron) proposes to develop a 700 megawatt (MW) wind farm, located approximately 25 kilometres north-west of Gulgong in the declared Central West Orana Renewable Energy Zone (CWO REZ). The project is within the Dubbo Regional and Warrumbungle Shire local government areas. The proposed project involves the development of up to 117 turbines with a maximum tip height of 256 metres (m) high, a 400 MW battery energy storage system (BESS), connection to the proposed CWO REZ transmission line and other ancillary infrastructure. The project has a capital investment value of approximately $2 billion and is expected to generate 590 construction jobs and 12 operational jobs. If approved, construction of the project would take about 40 months.

Over the next decade, three of the four remaining coal fired generators in NSW are scheduled to retire, removing around 8.3 gigawatts of dispatchable electricity generation from the system. The NSW Government's *Electricity Infrastructure Roadmap* (the Roadmap) provides a plan to coordinate investment in new generation and supports the delivery of 12 gigawatts of new renewable electricity generation and 2 gigawatts of long-duration storage in NSW by 2030.

The project is classified as State significant development (SSD) under the *Environmental Planning and Assessment Act 1979* (EP&A Act). The Independent Planning Commission is the consent authority for the project as the project has received more than 50 unique public submissions by way of objection, Warrumbungle Shire Council objects to the project and Squadron has made a reportable political donations disclosure.

The Department publicly exhibited the Environmental Impact Statement for the project from 28 July until 24 August 2023 and received 67 unique public submissions (57 objections, seven in support and three comments on the project). Key reasons for objections from the community include impacts to amenity, biodiversity, transport and cumulative impacts.

The Department received advice from 15 government agencies and two host councils, Dubbo Regional Council and Warrumbungle Shire Council. Warrumbungle Shire Council objected to the project and comments were also received from Mid-Western Regional Council.

The Department engaged with local councils and relevant government agencies on key issues and they each recommended the implementation of appropriate mitigation and management measures. The Department visited the site on two occasions.

The key assessment considerations are energy security, biodiversity and visual impacts. The Department has also undertaken a comprehensive assessment of the full range of other potential impacts and recommended a range of detailed conditions, developed in conjunction with agencies and councils, to ensure all potential impacts are effectively minimised, managed or offset.

The project would have the capacity to generate 700 MW of renewable energy, sufficient to power around 370,000 homes per year. The project would save up to about 2,060,000 tonnes of greenhouse gas emissions per

year and would make a material contribution towards the State meeting its net zero targets and the renewable energy objectives of the Roadmap.

The project is within the Central-West Orana Renewable Energy Zone (CWO REZ), which has good wind resource potential, and would connect directly to the proposed CWO REZ Transmission line. The project is also located on land where wind development is permissible with consent.

The disturbance footprint includes 275.3 ha of native vegetation, of which approximately 128.1 ha is woodland (in moderate to good condition), 44.4 ha is modified woodland, and 102.8 ha is derived native grassland. The project has been designed and refined to avoid and minimise biodiversity impacts with 1,194.7 ha (approximately 81%) of the development footprint being on land with no native vegetation. The Department considers that the vegetation clearing impacts of the project would not be significant, subject to a range of mitigation and adaptive management measures and by offsetting the residual biodiversity impacts.

The project has the potential to result in impacts to bats and avifauna. The Department has recommended a condition requiring adaptive management in a Bird and Bat Adaptive Management Plan (BBAMP) including detailed monitoring and a trigger action response plan to minimise potential impacts of the project; and the implementation of measures to reduce the mortality of those species or populations.

Squadron reduced the number of proposed turbines from the early conceptual layout as part of the iterative project design process and further reduced these numbers in the EIS. There are 35 non-associated receivers located within 5 km of the nearest proposed turbine i.e. the distance within which turbines of this size may potentially have visual magnitude impacts under the Wind Energy Guideline's Visual Assessment Bulletin (Visual Bulletin). Most dwellings benefit from distance, intervening topography and screening from existing mature vegetation between viewpoints and the project. The visual performance objectives set out in Visual Bulletin are achieved at all receivers. The Department is satisfied that the project would not fundamentally change the broader landscape characteristics of the area or result in any significant visual impacts on the surrounding non-associated residences.

The Department considers the project would not result in any significant impacts on the local community or the environment, is located on a suitable site for a wind farm development, and any residual impacts can be managed through the implementation of the recommended conditions.

The project would result in benefits to the State of NSW and is therefore in the public interest and is approvable.

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1 Introduction

1.1 The Proposal

1. Spicers Creek Wind Farm Pty Ltd, owned by the Squadron Energy group of companies (Squadron), is proposing to develop a State significant development (SSD) wind farm in the Central-West Orana Renewable Energy Zone (CWO REZ), approximately 25 km north-west of Gulgong and 35 km north-east of Wellington, within the Dubbo Regional and Warrumbungle Shire local government areas (LGAs) (see **Figure 1**).

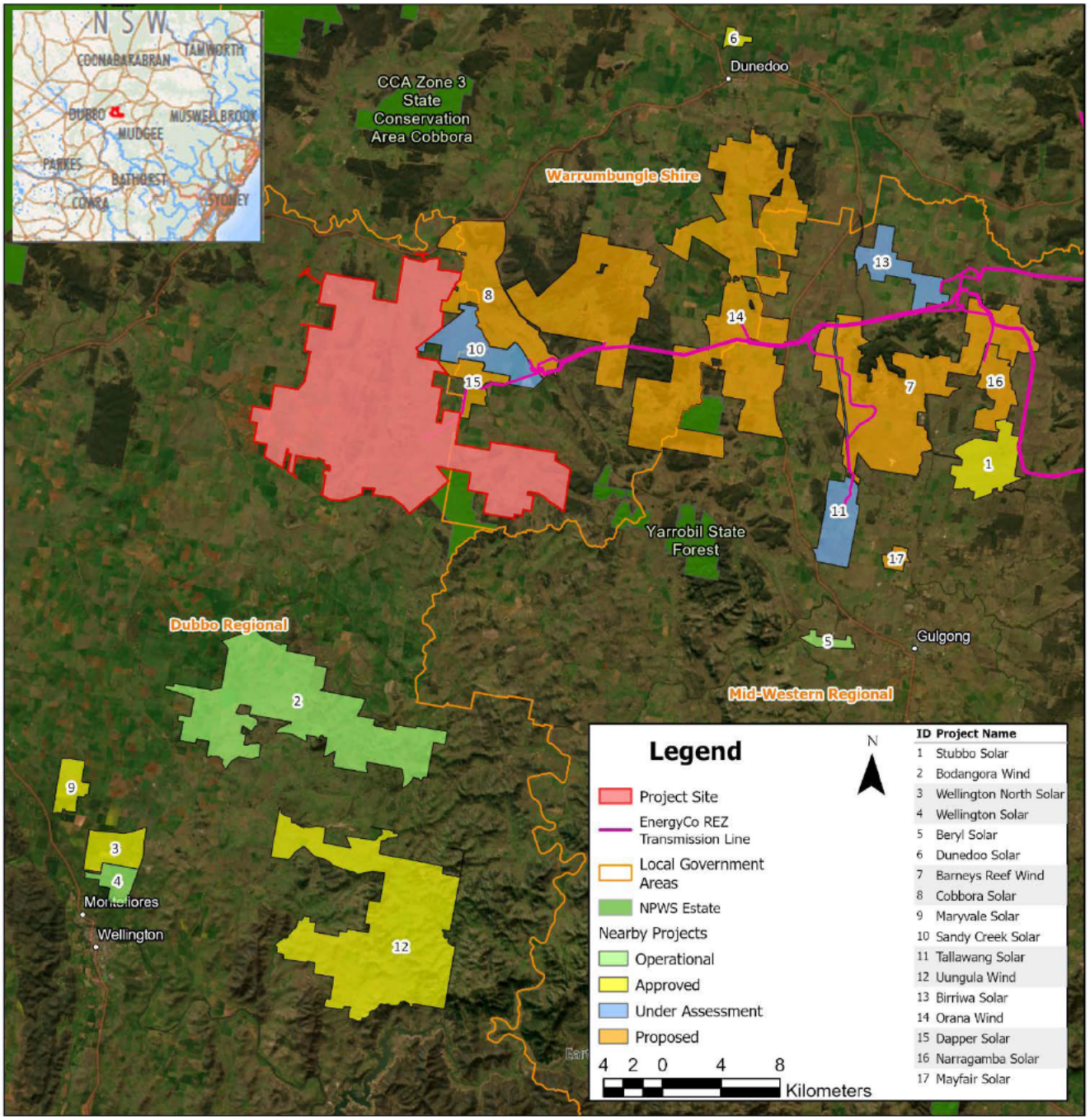

Figure 1 | Regional context map

2 Project

2.1 Project overview

2. Squadron is proposing to develop a wind farm with up to 117 turbines, with a maximum tip height of 256 metres (m). The project would have a nameplate capacity of 700 megawatts (MW), generating up to 2,085,000 megawatt hours (MWh) of electricity annually.

3. The project also includes a battery energy storage system (BESS) with a capacity of up to 400 MW (1,800 MWh) and up to three substations. The wind farm would connect to Energy Corporation of NSW's (EnergyCo) approved CWO REZ Transmission Line via direct connection to one of the onsite substations.

4. The key components of the project as amended are summarised in **Table 1**, shown in **Figure 2**, and described in the Environmental Impact Statement (EIS) (see **Appendix A**), Submissions Report (see **Appendix C**) and additional information provided during the Department's assessment of the project (see **Appendix D**).

Table 1 | Key aspects of the project

Aspect	Description
Project summary	• Up to 117 turbines and associated infrastructure (700 MW capacity) • Centralised energy storage facility with a capacity of up to 400 MW / 1,800 MWh
Project area	• Project Site: 17,645 ha • Development corridor: 4,830 ha • Development footprint: 1,470 ha
Wind turbine dimensions	• Maximum tip height of 256 m • Turbine hub height of 170 m • Maximum blade length approx. 85 m
Ancillary infrastructure	• Connection to the proposed CWO REZ transmission line within the site • Up to three substations, 30 km of overhead and 237 km of underground transmission cables • Up to two operation and maintenance compounds and two electrical plant compounds • Temporary facilities, including up to 15 site construction compounds, including site office and compound, rock crushing facilities and concrete batching plants, stockpiles and materials storage and laydown areas • Up to 154 km of new internal tracks and two site access points • Up to four permanent meteorological masts (up to 200 m in height) and four temporary meteorological masts (up to 170 m in height)
Off-site road works	• Upgrades to intersections, local roads and waterway crossings
Construction	• Construction would last approximately 40 months with a six month peak. • Hours to be limited to Monday to Friday 7am to 6 pm, and Saturday 8 am to 1 pm.
Operation	• Approximately 30 years. However, the project may involve infrastructure upgrades that could extend its operation
Access route	• Heavy vehicles requiring escort: access from the Port of Newcastle, via Selwyn Street, George Street, Industrial Drive, Maitland Road, New England Highway, John Renshaw Drive, Hunter Expressway, New England Highway, Golden Highway and Sweeneys Lane southbound or continuing to Saxa Road and Tallawonga Road. • A high-load bypass route around Denman, which travels along Denman Road (north-east of Denman), Bengalla Road and Wybong Road before re-joining Golden Highway near Sandy Hollow. • There would be seven primary site access points: two off Sweeneys Lane and five off Tallawonga Road, and one secondary site access from Ben Hoden Road (for standard heavy and light vehicles only).
Decommissioning and rehabilitation	• The project includes decommissioning at the end of the project life, which would involve removing all above ground infrastructure
Employment	• Up to 590 construction jobs and 12 operation jobs
Capital Investment Value	• $2 billion
VPA	• A total of 1.5 % of CIV (indexed to CPI) to be split proportionately between Dubbo Regional Council and Warrumbungle Shire Council

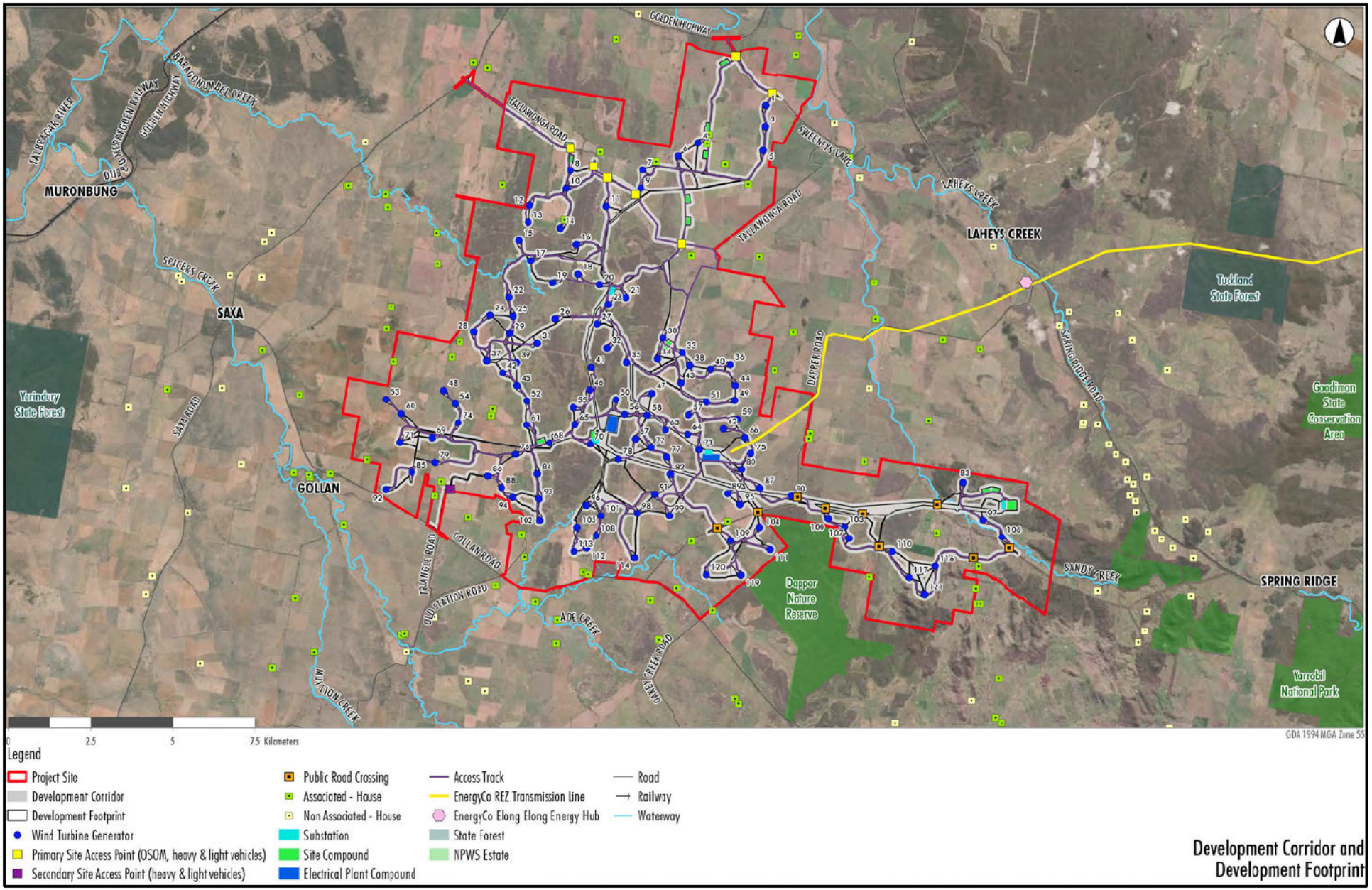

Figure 2 | Site layout

3 Strategic context

3.1 Site and Surrounds

5. The project is located in the Central West region of NSW within the CWO REZ, an area identified as strategically advantageous with strong renewable energy resource potential, proximity to the existing electricity network, and consideration of potential interactions with existing land uses, including agricultural lands and biodiversity conservation.

6. Key industries in the region are agriculture, mining and manufacturing. The site and surrounding land is predominantly a rural landscape, interspersed with rural residences and farm buildings.

7. The area surrounding the project site is sparsely populated by neighbours with large land holdings. There are four non-associated residences located within 3.4 km (the black line) of a proposed turbine location. Potential amenity impacts on these residences are discussed in **Section 6**.

8. The project is located near the localities of Ballimore, Elong Elong, Goolma, Gollan and Dunedoo. Dwellings are mainly concentrated around the villages of Elong Elong, Goolma and Ballimore which have an approximate population of 142, 95 and 240 respectively.

9. The topography features undulating terrain with ridgelines separating the intervening valleys. The site has an elevation ranging from 36 m and 540 m Australian Height Datum (AHD).

10. Land within the site has been subject to extensive historical land clearing for agricultural purposes, primarily for sheep grazing with some cattle grazing and cropping. The site includes 4.5 hectares (ha) of mapped Biophysical Strategic Land (BSAL) within the development corridor. Of this, 0.15 ha is within the development footprint. Squadron has committed to avoiding all mapped BSAL as part of detailed design. Dapper Nature Reserve is located adjacent to the southern boundary of the site.

11. The site is located within the Macquarie-Bogan River system and extends across the catchments of a number of tributary channels of the Talbragar River. The site is not prone to flooding.

12. There are 22 State significant renewable energy projects within 30 km of the site, including three proposed solar farms located adjacent to the site. These projects are listed in **Table 2** and shown in **Figure 1.**

Table 2 | Nearby renewable energy projects

Project	Capacity	Status	Distance from the project
CWO REZ Transmission Project		Approved	East
Dapper Solar Farm	300 MW	Proposed	Adjacent east
Sandy Creek Solar Farm	750 MW	Proposed	Adjacent east
Cobbora Solar Farm	700 MW	Proposed	Adjacent east
Bodangora Wind Farm	100 MW	Operational	11 km south
Orana BESS	400 MW / 1600 MWh	Approved	12 km south-west
Orana Wind Farm	524 MW	Proposed	16 km east
Tallawang Solar Farm	500 MW	Proposed	17 km east
Barneys Reef Wind Farm	441 MW	Proposed	18 km north-east
Piambong Wind Farm	551 MW	Proposed	18 km south-east
Bellambi Heights BESS	408 MW / 816 MWh	Approved	19 km south-east
Beryl Solar Farm	87 MW	Operational	19 km south-east
Beryl BESS	100 MW / 200MWh	Proposed	20 km south-east
Uungula Wind Farm	400 MW	Construction	22 km south
Mayfair Solar Farm	60 MW	Proposed	22 km south-east
Dunedoo Solar Farm	55 MW	Approved	24 km north-east
Birriwa Solar Farm	600 MW	Proposed	25 km north-east
Maryvale Solar Farm	230 MW	Approved	25km south-west
Wellington North Solar Farm	300 MW	Construction	25 km south-west
Stubbo Solar Farm	400 MW	Construction	26 km east
Narragamba Solar Farm	320 MW	Proposed	28 km east
Wellington Solar Farm	174 MW	Operational	28 km south-west

3.2 Renewable energy context

13. In 2023, NSW derived approximately 36% of its electricity generation from renewable sources. The rest was derived from fossil fuels, including approximately 61% from coal and 3% from gas. NSW is one of the nation's leaders in large-scale wind with 15 major operational projects and five under construction.

14. The project is located in the declared CWO REZ and would connect directly into the approved CWO REZ Transmission line via the onsite substation providing access to the electrical grid at a location with available network capacity.

15. The Commonwealth and State energy context is described in **Table 3**.

Table 3 | Energy Context

Policy/Year	Comments
Australia's Long Term Emissions Reduction Plan (2021) and Nationally Determined Contribution (2022)	Sets a pathway to net zero emissions by 2050 and affirms Australia's commitment to meeting its revised 2030 target (43% below 2005 levels).
Climate Change (Net Zero Future) Act 2023	Legislates a whole-of-government climate action to deliver net zero by 2050.
Australian Energy Market Operator's 2024 Integrated System Plan (ISP)	Notes that: • without coal, investment is urgently needed to meet significantly increased electricity demand requiring a six-fold increase in large-scale variable renewable energy generation; and • a mix of solar and wind is needed, and they offer complementary daily and seasonal profiles.
NSW: *Climate Change Policy Framework (2016),* *Transmission Infrastructure Strategy (2018),* *Electricity Strategy (2019),* *Electricity Infrastructure Roadmap (2020),* *Net Zero Plan Stage 1: 2020 – 2030 (2020) and Implementation update (2022);* *Central West and Orana Regional Plan 2041*	Relevant aspects of these policy documents include: • aim to achieve net zero emissions in NSW by 2050 and reduce emissions by 50% below 2005 levels by 2030; • note that all coal fired power plants in NSW are scheduled for closure within the next twenty years; • identifies Renewable Energy Zones (REZ) across NSW, including in the CWO REZ, aimed at encouraging investment in electricity infrastructure and unlocking additional generation capacity in order to ensure secure and reliable energy in NSW; • notes the need to expand transmission infrastructure into REZs to open new parts of the grid for renewable energy projects; and • unlock regional investment and new energy generation infrastructure.

16. The project's alignment with existing Commonwealth and State policies and strategies are considered in **section 6.2.**

3.3 NSW Wind Energy Framework

17. In December 2016, the Department released the NSW Wind Energy Framework (the Framework). The Framework seeks to provide greater clarity, consistency and transparency for industry and the community regarding assessment and decision-making on wind energy projects.

18. The Framework provides a merit-based approach to the assessment of wind energy projects, which is focused on the issues unique to wind energy, particularly visual and noise impacts. The key documents comprising the Framework include the Wind Energy Guideline, the Visual Assessment Bulletin and the Noise Assessment Bulletin.

19. The Department's assessment of the project against the requirements of the Framework are detailed in **Section 6.**

20. The Department is implementing a new Energy Policy Framework to help achieve the transition to renewable energy, reduce emissions and secure an affordable supply of electricity for the people of NSW.

The Framework includes a new Wind Energy Guideline, which includes updates to the existing wind energy guideline. The Framework is currently in draft form and will be finalised sometime in 2024. The draft Framework, including the Wind Energy Guideline, does not apply to the assessment of this project.

4 Statutory context

4.1 State significant development

21. The project is classified as State significant development under section 4.36 of the EP&A Act. This is because it triggers the criteria in Clause 20 of Schedule 1 of *State Environmental Planning Policy (Planning Systems) 2021* (Planning Systems SEPP), as it is development for the purpose of electricity generating works with a capital investment value (CIV) of more than $30 million.

22. Under section 4.5(a) of the EP&A Act and section 2.7 of the Planning Systems SEPP, the Independent Planning Commission (the Commission) is the consent authority for the development as the project has received more than 50 unique public submissions by way of objection, Warrumbungle Shire Council objects to the project and Squadron have disclosed a reportable political donation.

4.2 Permissibility

23. The site is located within land primarily zoned RU1 – Primary Production under the *Dubbo Regional Local Environmental Plan (LEP) 2022* and the *Warrumbungle LEP 2013*. The site also contains small areas of land zoned SP2 – Infrastructure under the Dubbo Regional LEP, associated with roads including the Golden Highway and Saxa Road.

24. The RU1 and SP2 zone include various land uses that are both permitted with and without consent. Under the Dubbo Regional and Warrumbungle Shire LEP's electricity generating works are not expressly listed as permitted with or without consent, and is therefore a prohibited land use.

25. However, electricity generating works are permissible with consent on any land in a prescribed non-residential zone, including land zoned RU1 and SP2, under clause 2.36 of the *State Environmental Planning Policy (Transport and Infrastructure) 2021* (Transport and Infrastructure SEPP). Consequently, the project is permissible with development consent.

4.3 Integrated and other approvals

26. Under section 4.41 of the EP&A Act, several other approvals are included in the SSD approval process, and consequently are not required to be separately obtained for the project.

27. Under section 4.42 of the EP&A Act, a number of further approvals are required, but must be substantially consistent with any development consent for the project (e.g. approvals for any works under the *Roads Act 1993*).

28. As the project traverses Crown land, including Crown roads and a section of Crown reserve, further authorisations are required under the *Crown Land Management Act 2016* prior to its use.

29. The Department has consulted with the relevant government authorities responsible for the integrated and other approvals, considered their advice in its assessment of the project, and included suitable conditions in the recommended conditions of consent to address these matters (see **Appendix E**).

4.4 Mandatory matters for consideration

30. Section 4.15 of the EP&A Act outlines the matters that a consent authority must take into consideration when determining development applications. These matters are summarised as:

- the provisions of environmental planning instruments (including draft instruments), development control plans, planning agreements and the EP&A Regulations;
- the environmental, social and economic impacts of the development;
- the suitability of the site;
- public submissions and advice from government agencies; and
- the public interest, including the objects in the EP&A Act and the encouragement of ecologically sustainable development (ESD).

31. In addition, under Section 92 of the EP&A Regulation 2000, a consent authority must also consider the *Dark Sky Planning Guideline 2023* for SSD projects less than 200 km from the Siding Spring Observatory.

32. The Department has considered these matters in its assessment of the project, as well as Squadron's consideration of environmental planning instruments in its EIS. Detailed consideration of the relevant provisions of the environmental planning instruments is provided in **Appendix F**, and the Department concluded the project is consistent with the relevant provisions.

4.5 Application of the Biodiversity Conservation Act 2016

33. The *Biodiversity Conservation Act 2016* (BC Act) applies to the project. In particular:

- under section 7.9 of the BC Act, the EIS for the project must be accompanied by a biodiversity development assessment report (BDAR);
- under section 7.14, the Minister must consider the likely impact of the project on biodiversity values as assessed under the BDAR; and
- under section 7.16, the consent authority must consider if the project is likely to have serious and irreversible impacts (SAII) on biodiversity values and if so, whether there are any additional and appropriate measures that will minimise those impacts.

34. The EIS for the project included a BDAR, which was prepared in accordance with the Biodiversity Assessment Methodology (see Appendix 10 of the EIS, which is included in **Appendix A**). The BDAR was updated to address comments raised in submissions on the project and to account for project refinements

(see Appendix 5 of the Submissions Report), which is included in **Appendix C** . Squadron also provided a BDAR Addendum to address residual matters raised by BCS (see **Appendix D**).

35. The Department has considered the findings of the updated BDAR and the advice from the Biodiversity, Conservation and Science Group (BCS) in its assessment (see **Appendix B**).

4.6 Commonwealth Matters

36. On 4 January 2023, a delegate of the Commonwealth Minister for the Australian Government Department of Climate Change, Energy, the Environment and Water (AG DCCEEW) determined the project (EPBC 2022/09387) to be a 'controlled action' in accordance with section 75 of the *Environment Protection and Biodiversity Act 1999* (EPBC Act) due to likely significant impacts to listed threatened species and communities (section 18 and 18A) ad listed migratory species (section 20 and 20A).

37. The Department's assessment of the potential impacts of the project on controlling provisions under the EPBC Act relating to biodiversity is provided in **section 6.3.7.** Further information on the matter that the Commonwealth Minister must consider under the EPBC Act is provided in **Appendix H**.

38. The Department consulted with the AG DCCEEW in accordance with the bilateral agreement and provided draft copies of this assessment report and the recommended conditions of approval to the AG DCCEEW for comment.

5 Engagement

39. The Department publicly exhibited the EIS from 28 July 2023 until 24 August 2023 (28 days) on the Department's website.

40. The exhibition was advertised in the *Dubbo Daily Liberal* and *Mudgee Guardian* and *The Australian*, the Department wrote directly to landowners up to 8 km from the project site, notifying them of the proposal and exhibition dates. The Department visited the site and surrounds on 16 to 17 October 2023 and 2 February 2024 and met with non-associated landowners.

41. The Department also consulted with relevant councils and government agencies and members of the community during its detailed assessment of the project. The Department notified and sought comment from EnergyCo and Transport for New South Wales (TfNSW) in accordance with the Transport and Infrastructure SEPP, as discussed further in **section 5.3**.

5.1 Summary of Public Submissions

42. During the exhibition of the application, the Department received 68 public submissions of which 67 were unique (57 objecting to the project, seven in support and three comments). A summary of the proximity of unique submissions is provided in **Table 4** below and a link to all submissions in full is provided in **Appendix B**.

43. The majority (about 85%) of the submissions received during the public exhibition objected to the project. As shown in **Table 4**, most submissions (52 %) came from people living further than 50 km from the project site, all of whom objected to the project. However, submissions from people living within 15 km of the site were more evenly split with approximately 32% supporting the project.

Table 4 | Summary of submitter distances

Submitter Distance	Objection	Support	Comment	Total
< 5km	7	7	2	16
5 - 15 km	5	0	1	6
15- 50 km	10	0	0	10
> 50 km *	35	0	0	35
Total	57	7	3	67

*Includes interstate submissions

5.1.1 Submissions in objections

44. The most common matters raised in submissions objecting to the project included:

- socio-economic factors involving property devaluation, adverse impact on the mental and physical health of some residents and division in the community;
- biodiversity impacts including vegetation clearing and bird and bat strike;
- impacts to agricultural land and the farming community;
- visual impacts on surrounding landscape and residences, including shadow flicker;
- energy security including the efficiency and reliability of renewable energy;
- the cost and responsibility of decommissioning and rehabilitation;
- hazards/ bushfire risk, including concerns that the wind farm could increase the risk of bushfires in the area and impede aerial firefighting efforts;
- construction and operational noise including infrasound and noise and vibration from blasting;
- increased water usage during construction;
- waste management including disposal and recycling of blades; and
- cumulative impacts with other SSD projects in the region.

45. Other issues raised in submissions included traffic and transport during construction, the adequacy of consultation undertaken, project location, the accuracy of the information presented in the EIS and impacts to telecommunications. The key matters raised in public submissions are summarised in **Figure 3**.

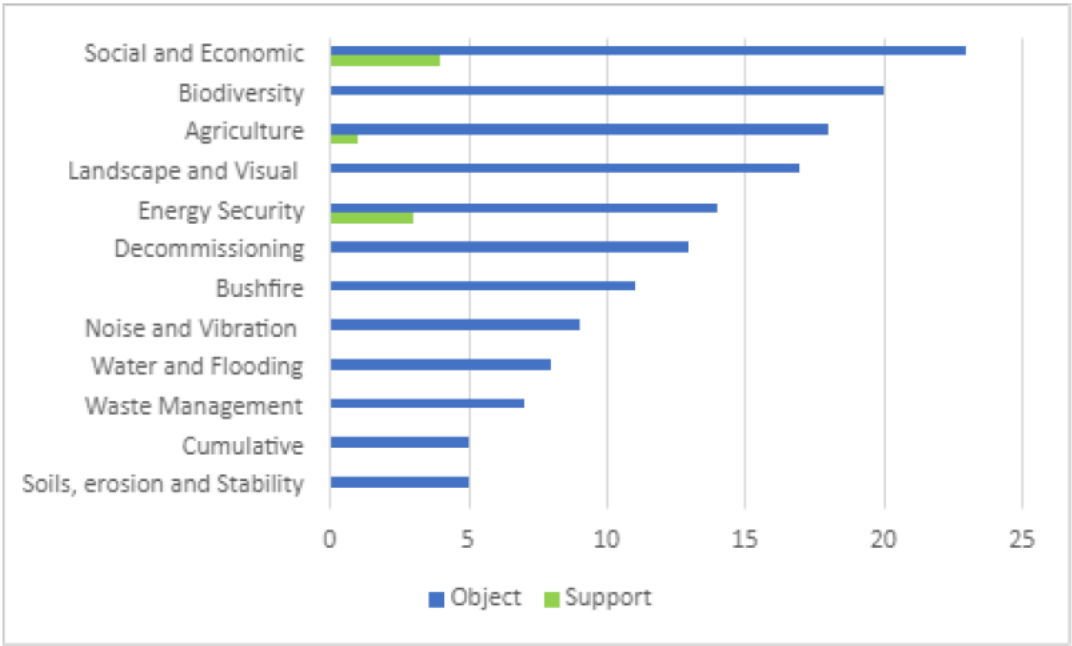

Figure 3 | Key issues raised in public submissions

5.1.2 Submissions in support and comments

46. Submissions in support of the project noted various benefits of the project, including the economic benefits of the project, the creation of jobs, financial support to farmers, road upgrades and improvements to road safety conditions and the benefits of renewable energy including improvements to energy security.

47. Submissions commenting on the project raised queries regarding consultation, property value, compensation for impacts to visual amenity and cumulative impacts to rural communities.

5.1.3 Special interest groups

48. Two submissions on the project were from special interest groups with matters raised summarised in **Table 5**. The Department has carefully considered the submissions provided by the community, as described throughout **Section 6.**

Table 5 | Summary of matters raised in special interest group submissions

Position	Groups	Key Issues
Object (2)	Local groups: Uarbry Tongy Lane Alliance, CWO REZist Inc.	• Inadequate community consultation, impacts to endangered flora and fauna, cumulative impacts, impacts to rural communities and agriculture. Decommissioning and rehabilitation including waste disposal and removal of hardstand areas underground cabling. Clarity of impacts to host landowners and clarification of greenhouse gas production to be avoided as a result of the project. • Dispatchable power, adequacy of community benefits, decline in property value due to reduced visual amenity and meaningful consultation to obtain social licence.

5.2 Summary of council submissions

49. The Department received submissions from three local councils, Dubbo Regional Council, Warrumbungle Shire Council and Mid-Western Regional Council. A summary and overview of the key comments is provided in **Table 6**. A full copy of Council submissions is available in **Appendix B**.

Table 6 | Summary of issues raised by council

Council	Submission summary
Dubbo Regional Council (host Council)	Road and transport; subdivision; community contributions.
Warrumbungle Shire Council (host Council)	Objects to the project. Workforce accommodation; light and heavy vehicle movements; road and traffic impacts; road upgrades; materials sourcing; community contributions; construction and operational jobs; social impacts.
Mid-Western Regional Council	Inadequate consultation; workforce accommodation; water supply; cumulative impacts; waste management.

5.3 Summary of Agency Advice

50. During exhibition of the EIS, the Department received advice from 20 government agencies. A summary of the agency advice is provided in **Table 7**. A link to the full copies of the advice is provided in **Appendix B**.

Table 7 | Summary of agency submissions

Agency	Key matters raised
TfNSW	Road and intersection upgrade requirements, updates to the traffic impact assessment such as additional information on traffic count surveys, SIDRA analysis, turn warrant assessments and heavy vehicle access.
BCS	Requested additional information regarding the BDAR, including impact to serious and irreversible impacts (SAII) entities, microbat surveys, identification of category 2 regulated land, number of vegetation integrity plots, targeted surveys for credit species and bird and bat utilisation surveys (BBUS).
Environment Protection Authority (EPA)	Provided recommendations regarding water pollution, wastewater discharge, stormwater and sediment control, out of hours work, noise and dust management.
National Parks and Wildlife Service (NPWS)	Raised concerns about buffer distances around telecommunication services, absence of lighting on turbines and meteorological masts. Advised that the recreational amenity noise levels should be capped at 50 dB(A) for the Dapper Nature Reserve and that cumulative impacts on Dapper Nature Reserve are considered.
Heritage NSW – Aboriginal Cultural Heritage	Raised concerns regarding community consultation, mapping of artefact scatters, test excavation locations, assessment of transport route and powerline easement and mitigation measures. Made recommendations regarding archaeological salvage excavations to be addressed through a Heritage Management Plan.
Civil Aviation Safety Authority (CASA)	Provided recommendations regarding lighting of turbines to avoid aircraft collisions.

Agency	Key matters raised
Australian Government Department of Defence (DoD)	Requested the proponent continue to engage with Defence for details of the progress of the changes to the airspace. Recommendations for the provision of obstacle lighting and provision of 'as constructed' details of tall structures to ASA.
NSW Rural Fire Service (RFS)	Requested a bushfire report and clarification on asset protection zones (APZs) and construction standards for the wind farm construction compound, BESS and associated infrastructure.
Fire and Rescue NSW (FRNSW)	Recommendations requiring the implementation of a Fire Safety Study and Emergency Response Plan.
Department of Primary Industries – Fisheries	Recommendations regarding the design and management of waterway crossings.
NSW DCCEEW – Water Group (Water Group)	Security and supply of water and aquifer interference.
Crown Lands	Impacts on Crown Reserve and Crown Roads. Recommendations regarding authorisations required under the *Crown Land Management Act 2016*.
Mining, Exploration and Geoscience (MEG)	Request any buffer zones that exclude activities near turbines, such as exploratory drilling, be reasonably minimised. Also requested that where affected licence holders have identified exploration prospects and targets that the staging of turbine construction and/or relocation be considered to minimise the potential to sterilise mineral resources.
WaterNSW	Requested ongoing access along Murrawega Road to groundwater bore GW096128.
Siding Spring Observatory	Requested ongoing consultation regarding installation of aviation lighting.
NSW Telecommunications Authority	Confirmed that turbines T47 and T58 had been adequately relocated to avoid intrusion to Telco Authority's microwave link that crosses the project area

51. AirServices Australia, DPI Agriculture, Heritage Council and Siding Spring Observatory did not raise any concerns.

5.4 Response to submissions

52. Following the public exhibition period, the Department requested Squadron to respond to the issues raised in submissions and the advice received from government agencies in a submissions report (see **Appendix D**).

53. The Department published the submissions report on the NSW planning portal and forwarded the submissions report to relevant government agencies and local council(s) for comment.

6 Assessment

6.1 Overview

54. The Department has undertaken a comprehensive assessment of the merits of the development. This report provides a detailed discussion of the key issues, namely energy transition, biodiversity, visual and traffic and transport (see **section 6.2** to **6.5**).

55. The Department acknowledges that being located within the CWO REZ, the project has the potential to contribute to some cumulative impacts in the region. The Department has considered cumulative impacts throughout its assessment of each of the potential impacts associated with the project, and has also included a summary of its assessment of these matters in **section 6.6**.

56. The Department notes that the assessment of a wind farm of this size in this location has been comparatively straightforward to other wind farm projects given the project has been sited and designed to minimise potential impacts, including locating turbines and associated infrastructure within areas of relatively low biodiversity values, and reducing the amenity impacts to the landscape and surrounding non-associated receivers by implementing minimum setback distances from turbines in accordance with NSW government guidelines.

6.2 Energy transition

57. The project aligns with a range of national and state policies, which identify the need to diversify the energy generation mix and reduce the carbon emissions intensity of the grid while providing energy security and reliability (see **section 3.2**).

58. The Australian Energy Market Operator's 2024 Integrated System Plan (ISP) for the National Electricity Market (NEM) notes that about 8.3 gigawatts (GW) of the current 21 GW of coal fired generation capacity is expected to be withdrawn from the NEM by 2030. With the closure of Munmorah Power Station in 2012, Wallerawang Power Station in 2014 and Liddell Power Station in April 2023, and a number of planned closures of coal-fired power stations in the State in the next decade (such as the Eraring, Vales Point and Bayswater power stations), additional utility-scale generation is required to replace the loss of coal-fired generation in the State.

59. The ISP also forecasts that there will be a demand for 83 GW of utility-scale wind and solar in the NEM by 2034-35, and 127 GW by 2049-50. It highlights the importance of the resource diversity that will be opened up by the State's REZ network, providing an even mix of wind and solar across the State, noting that wind and solar have complementary daily and seasonal profiles. The project would therefore contribute to replacing the loss of coal-fired generation in the State as well as providing diversification of the generation profile.

60. The project would have the capacity to generate around 700 MW of renewable energy, which is sufficient to power about 370,000 homes per year, and would save up to two million tonnes of greenhouse gas emissions annually. This would assist NSW in achieving the emissions reduction targets legislated by the

Climate Change (Net Zero Future) Act 2023, and is consistent with the *NSW Climate Change Policy Framework* and the *Net Zero Plan Stage 1: 2020 – 2030* objective of achieving net zero emissions by 2050.

61. The inclusion of a BESS would enable the project to store energy for dispatch to the grid when the wind isn't blowing and/or during periods of peak demand, increasing grid stability and energy security.

62. The project is located in the CWO REZ, a region which has strong renewable energy resources. EnergyCo has identified the project as a Candidate Foundation Generator (CFG) given it would have direct access to the electrical grid via the approved CWO REZ Transmission project and is on land where wind development is permissible with consent under the Transport and Infrastructure SEPP.

63. In light of the above, the Department considers the project is in the public interest as it would play an important role in:

- increasing renewable energy generation and capacity;
- firming the grid by including 400 MW / 1,800 MWh of energy storage; and
- contributing to the transition to a cleaner energy system as coal fired generators retire.

6.3 Biodiversity

64. Although the site has been heavily disturbed by agricultural activity and is characterised predominantly by cleared land, there are some areas of remnant native vegetation generally in the form of scattered paddock trees and patches of woodland vegetation along ridgelines, local roads and drainage lines. These areas of native vegetation only comprise approximately 19% (275.3 ha) of the project footprint.

65. Clearing of this vegetation would cause direct and indirect impacts to threatened biodiversity, while operation of the wind turbines has the potential to impact flight paths of birds and bats from changes in air pressure (barotrauma) or collision with turbines (birds and bat strike).

66. Approximately 35% of submissions objecting to the project raised concerns about impacts on biodiversity from direct clearing of native vegetation, including threatened ecological communities (TECs), impacts on habitat connectivity and blade strikes to birds and bats.

67. BCS initially raised concerns on the application of the Biodiversity Assessment Methodology (BAM) in the preparation of the project's BDAR, in particular, the assessment of potential Serious and Irreversible Impacts (SAII), the land categorisation methodology, targeted threatened species surveys, and requirements for bird and bat utilisation surveys (BBUS).

68. In order to address these concerns (along with comments raised in public submissions), Squadron revised its BDAR and provided additional information during the Department's assessment, including an Amended BDAR and subsequent response documents.

69. Overall, the Department considers that the concerns raised by BCS have been resolved, either through provision of additional information or development of consent conditions, and that the BDAR adequately assesses the potential biodiversity impacts of the project in accordance with the BAM.

6.3.1 Avoidance and minimisation

70. Squadron has focused on avoidance of impacts through site selection and avoidance of higher quality native vegetation and habitat during the preliminary design process for the project.

71. In particular, this work has focused largely on avoiding impacts to areas of Box Gum Woodland CEEC, noting the area of this community within the development corridor has decreased from 419 ha to 156 ha between January 2022 and the current design, a reduction of 263 ha (62%). Importantly, only 53.8 ha of this occurs within the development footprint.

72. Similarly, with respect to impacts on Inland Grey Box Woodland EEC, the area of this community within the development corridor has decreased from 460 ha to 136 ha between January 2022 and the current design, a reduction of 324 ha (70%), noting only 31.2 ha occurs within the development footprint.

73. More generally speaking, Squadron has aimed to avoid and/or minimise impacts on biodiversity values by:

- locating turbines and associated infrastructure within exotic vegetation or Category 1 (exempt) land (i.e. land that is exempt from assessment as per section 6.8(3) of the BC Act) and/or derived grasslands and avoiding areas of high conservation value native vegetation;
- reducing the number of turbines from 138 in early planning stages to 122 at SEARs request, and further again to 117 in the EIS;
- reducing the development footprint from 1,520 ha at EIS exhibition to 1,470 ha;
- excluding riparian zones associated with higher order streams from the development area (noting that some stream crossings for access are still required);
- removing the proposed site access via Binginbar Road to avoid impacts to Box Gum Woodland;
- committing to undertake pre-clearance surveys and tree-felling supervision to minimise potential impacts on native fauna species (including threatened species) during the clearing of hollow-bearing trees;
- committing to develop a Biodiversity Management Plan (BMP) and a Bird and Bat Adaptive Management Plan (BBAMP); and
- committing to providing an additional offset (above and beyond the requirements of the BAM) for impacts to NSW Box Gum Woodland in recognition of it being a SAII entity.

6.3.2 Native vegetation

74. The project development footprint (including proposed road upgrade areas) would disturb around 1,470 ha, the majority of which is not native vegetation (1,194.7 ha or approximately 81% of development footprint) and 275.3 ha is native vegetation. Of the 275.3 ha of native vegetation, 128.1 ha (46% or approximately 9% of the development footprint) is woodland (in moderate to good condition), 44.4 ha is modified woodland, and the remaining 102.8 ha is DNG.

75. In relation to clearing of TECs, the project would impact approximately 85 ha, comprised of:

- 53.8 ha of Box Gum Woodland – consisting of 31.3 ha of woodland in moderate – good condition, 9.9 ha of modified woodland (planted or thinned canopy) and 12.6 ha of derived native woodland (DNG); and
- 31.2 ha of Inland Grey Box Woodland in the Riverina, NSW South Western Slopes, Cobar Peneplain, Nandewar and Brigalow Belt South Bioregions (Inland Grey Box) Endangered Ecological Community (EEC). This consists of 8.9 ha of woodland in moderate – good condition, 6.5 ha of thinned canopy condition woodland and 15.8 ha of DNG.

76. **Table 8** provides a summary of the impacts of the project on native vegetation, and the relevant ecosystem credit liability under the NSW Biodiversity Offset Scheme.

6.3.3 Threatened flora

77. Thirteen candidate flora species were identified as potentially occurring on the site and were the subject of targeted surveys. Of the 13 candidate species, one threatened species listed as vulnerable under the BC Act (pine donkey orchid) was identified during field surveys.

78. This species occurs outside of the development corridor and development footprint and would not be impacted. As such, the project does not generate an offset requirement for threatened flora species.

6.3.4 Threatened fauna

Ecosystem Credit Species

79. Vegetation clearing within the development footprint would result in the loss of habitat for 40 threatened species identified or predicted to occur as ecosystem credit species.

80. Potential impacts on these species would be offset via the ecosystem credit requirements detailed in **Table 8**.

Table 8 | Ecosystem credit requirements*

Plant Community Type	Condition	Conservation Significance		Impact Area (ha)	Credit Liability
		BC Act	EPBC Act		
81 - Western Grey Box - cypress pine shrub grass shrub tall woodland in the Brigalow Belt South Bioregion	Moderate Good	EEC	EEC	1.0	39
	DNG			1.7	33
266 – White Box grassy woodland in the upper slopes sub-region of the NSW South Western Slopes Bioregion	Moderate Good	CEEC	CEEC	10.5	427
	Thinned Canopy			8.0	312
	Planted			2.0	57
	DNG			6.7	152
267 - White Box - White Cypress Pine - Western Grey Box shrub/grass/forb woodland in the NSW South Western Slopes Bioregion	Moderate Good	EEC	EEC	8.3	341
	Thinned Canopy			6.5	290
	DNG			14.1	200
272 - White Box - Black Cypress Pine - red gum +/- Mugga Ironbark shrubby woodland in hills of the NSW central western slopes	Moderate Good	-	-	30.4	1,150
	Shrubby			5.0	135
	Thinned Canopy			2.0	43
	DNG			52.6	899
281 - Rough-Barked Apple - red gum - Yellow Box woodland on alluvial clay to loam soils on valley flats in the northern NSW South Western Slopes Bioregion and Brigalow Belt South Bioregion	Moderate Good	CEEC	CEEC	22.3	1,222
	DNG			6.0	174
467 - Blue-leaved Ironbark – Black Cypress Pine shrubby sandstone open forest in the southern Brigalow Belt South Bioregion (including Goonoo)	Moderate Good	-	-	53.7	1,741
	Shrubby			15.9	285
	Thinned Canopy			5.0	92
	DNG			19.6	135
468 - Narrow-leaved Ironbark – Black Cypress Pine +/- Blakely's Red Gum shrubby open forest on sandstone low hills in the southern Brigalow Belt South Bioregion (including Goonoo)	Moderate Good	-	-	1.9	46
	DNG			2.1	25
Total				275.3	7,798

*As per the Amended BDAR Addendum dated May 2024. As described in Section 4.3 of the Amended BDAR Addendum, not all vegetation zones within of PCTs 81, 266, 267 and 281 conform to the relevant TEC under the BC Act and EPBC Act, as such, the total area of TEC being impacted for the project (as outlined in the above paragraphs) is only a subset of the areas stated in this table.

Species Credit Species

81. Of the 18 candidate threatened fauna species considered to have potential habitat within the site, and therefore subject to targeted surveys, four were recorded, namely the glossy black cockatoo, barking owl, little eagle and square-tailed kite.

82. Importantly, offsets are only required to be provided for the little eagle and square-tailed kite where a development would impact breeding habitat. As the development footprint for the project does not contain any potential breeding habitat for these two species, no credits have been generated.

83. At this stage, Squadron has also assumed the presence of the pink-tailed legless lizard) (listed as vulnerable under the BC Act), and has committed to undertake seasonally appropriate surveys post-approval, in late 2024 for this species.

84. Given these surveys are not able to be undertaken prior to finalising this recommendation, the Department has included conditions requiring credits for this species be offset, unless the additional surveys confirm it is not present.

85. **Table 9** provides a summary of the species credits required to be offset for the project.

Table 9 | Species credit requirements

Species	Conservation significance		SAII Entity	Impact on habitat (ha)	Credit liability
	BC Act	EPBC Act			
Pink-tailed legless lizard (*Aprasia parapulchella*)	V	V	No	4.9	139
Barking owl (*Ninox connivens*)	V	-	No	22.0	889
Glossy black-cockatoo (*Calyptorynchus lathami*)	V	V	No	15.1	649
Total				42	1,677

6.3.5 Prescribed impacts

86. The project has the potential to result in impacts to birds and bats through changes in air pressure (barotrauma) or collision with turbines (birds and bat strike).

87. The assessment of these impacts is dealt with in a different way to other biodiversity impacts. They are considered a 'prescribed impact', as opposed to a 'direct impact' (like clearing and habitat loss) or an 'indirect impact' (such as impacts of predation, and weed invasion, edge effects in adjacent habitat).

88. Prescribed impacts are impacts on biodiversity values which are not related to, or are in addition to, native vegetation clearing and habitat loss. There is no policy on how to calculate or quantitatively assess prescribed impacts relating to barotrauma or bird and bat strike, and there is no requirement to provide biodiversity offset credits.

89. In that context, the approach that has been adopted for these impacts for all wind farms in NSW is a combination of a risk assessment followed by post-determination adaptive management. This adaptive management approach involves stringent requirements for baseline monitoring, ongoing monitoring of

any impacts during operation, and triggers for adaptive management measures to avoid or minimise impacts.

90. Following exhibition of the EIS (and BDAR), BCS requested further information relating to bird and bat utilisation and the turbine-based risk assessment. Squadron updated its risk assessment in the revised BDAR and proposed further mitigation measures in the Addendum BDAR. Squadron's revised risk assessment found that, even without the proposed mitigation measures, no species would have a 'high' residual risk rating.

91. BCS raised residual concerns regarding potential bird and bat strike, particularly in relation to survey effort and turbine risk-rating system, and in response, Squadron provided additional justification and information in the Addendum BDAR. The final assessment concluded that no turbines pose a very high risk, two turbines pose a high risk, 111 turbines pose a medium risk and four turbines pose a low risk of avifauna strike.

92. In consultation with BCS, the Department has recommended conditions requiring a comprehensive regime of adaptive management to address the risk of bird and bat strike, including:

- the collection of relevant baseline data on threatened and 'at risk' bird and bat species and populations in the locality that could be affected by the project;
- a detailed description of the measures that would be implemented on site for minimising bird and bat strike during operation of the project, including:
  - a wind turbine curtailment strategy if required;
  - minimising the availability of raptor perches on wind turbines;
  - prompt carcass removal;
  - controlling pests; and
  - using best practice methods for bat deterrence, including managing potential lighting impacts;
- an adaptive management program that would be implemented if the development is having an adverse impact on a particular threatened or 'at risk' bird and/or bat species or populations, including:
  - trigger action response plan to minimise potential impacts of the project;
  - the implementation of measures to reduce the mortality of those species or populations; or enhance and propagate those species or populations in the locality, where feasible;
- a detailed program to monitor and report on:
  - the effectiveness of these measures; and
  - any bird and bat strikes on site; and
- submitting monitoring data to BCS and the Planning Secretary.

93. Further to this, Squadron has also committed to funding species-specific biodiversity conservation actions should monitoring confirm that any threatened fauna species have been impacted by turbine strikes and/or barotrauma.

94. The Department considers that the recommended conditions, including the requirement to develop and implement an adaptive management plan in consultation with BCS and the AG DCCEEW, would be effective in managing the risk of bird and bat strike.

6.3.6 Serious and irreversible impacts

95. The BDAR identifies that the project would have potential impacts on three entities at risk of serious and irreversible impacts (SAII), namely Box Gum Woodland, large bent-winged bat and large-eared pied bat.

96. The BioNet Threatened Biodiversity Data Collection lists Box Gum Woodland as a potential entity at risk of SAII based on Principle 1 (in a rapid rate of decline) and Principle 2 (a very small population size), while the large bent-winged bat and large-eared pied bat are both listed on the basis of Principle 4 (unlikely to respond to measures to improve its habitat and vegetation integrity).

97. Under clause 6.7 of the *Biodiversity Conservation Regulation 2017* (BC Regulation), an impact is to be regarded as serious and irreversible if it is "likely to contribute significantly to the risk of a threatened species or ecological community becoming extinct" on the basis of the relevant principles.

98. While BCS conclude that SAII is unlikely for the two bat species (given no breeding habitat would be impacted), BCS has stated that impact to the 53.8 ha of Box Gum Woodland is likely to result in a SAII. The Department notes that BCS has not provided a quantitative assessment of how much impact would amount to a serious and irreversible impact, or importantly the relevant question of whether the project's impact is likely to contribute significantly to the entity becoming extinct.

99. Instead, BCS has noted that there would be impacts that relate to the principles for which Box Gum Woodland is listed and then stated that the project "*is likely to result in a serious and irreversible impact*". While not expressly stated, this would imply that BCS's position is that any impact on such a SAII entity, even if very small, is automatically considered to constitute a significant contribution to the risk of extinction.

100. In terms of forming an opinion about whether there is likely to be a serious and irreversible impact on these SAII entities, the Department has focussed on whether the project is "*likely to contribute significantly to the risk of a threatened species or ecological community becoming extinct*" as required under the BC Regulation.

101. The current list of SAII entities contains a wide range of ecological communities (53 in total) and species (401 in total) with widely variable population sizes, geographic distributions, rates of decline and responsiveness to mitigation measures. Whether a project would cause SAII to a specific community or species is a matter of fact and degree, and there is no simple 'rule' or 'formula' that can be applied to all communities and species. The risk of extinction for a specific SAII entity must be assessed on a case-by-case basis, with a particular focus on the relevant principles for which it has been included as a potential entity at risk of SAII.

102. For Box Gum Woodland, it is important to focus on the impacts of the project on the rate of decline and population size, which are the relevant principles for which it has been included as potential entity at risk.

103. The Department has also carefully considered the five assessment provisions in sections 9.1.1 and 9.1.2 of the BAM 2020, and the *'Guidance to assist a decision-maker to determine a serious and irreversible impact* (NSW DPIE – EES, 2019)*'*.

Box Gum Woodland

104. The Department notes that in 2006, the Threatened Species Scientific Committee estimated that the extent of Box Gum Woodland was 250,729 ha, and the Committee's more recent 2020 advice also refers to that figure. Based on that figure, recent assessments (including the BDAR for the Central West Orana REZ Transmission line) estimate that current extent would now be 234,694 ha when combined with estimated annual losses since then.

105. There is also a more recent Commonwealth Conservation Advice (AG DCCEEW, 2023), however it is not directly relevant and more conservative, as it is aimed at protecting higher condition remnants listed under the EPBC Act, and it excludes many areas that are included in the NSW listing under the BC Act.

106. The Department understands that many ecologists consider that the numbers derived from 2006 are out-of-date and likely to substantially underestimate the actual extent of Box Gum Woodland, as listed in NSW. Using the recent State-wide Vegetation Type Map (SVTM) released in 2022, there have been numerous efforts to provide a more up-to-date and accurate estimate of the extent of Box Gum Woodland under the NSW listing.

107. In particular, Dr Col Driscoll recently provided relevant information in relation to the Moolarben Coal Project, which is based on the recent NSW SVTM and estimates that the *"there is approximately 1,788,703 ha of extant Box-Gum Woodland CEEC within the SVTM in woodland form*". Dr Driscoll also estimated that there is approximately 5,315,040 ha of DNG form, which results in a total of 7,103,743 ha of Box Gum Woodland in NSW.

108. The project would impact up to 53.8 ha of Box Gum Woodland. As Box Gum Woodland is listed on the basis of 'population size' and 'rate of decline', it is particularly relevant to consider the project's potential impacts on Box Gum Woodland against the total area remaining in NSW.

109. While the Department considers the estimates of total area based on the recent SVTM are likely to be more appropriate for the NSW listing, it has also considered the updated 2006 figure for comparative purposes. Using Dr Driscoll's estimate, and the updated estimate from the 2006 Final Determination, the project would represent an impact of 0.007%, and 0.02% of the total remaining area in NSW, respectively.

110. The Department considers that it would be very difficult to conclude that an impact in the 0.007%-0.02% range is likely to contribute significantly to the extinction of Box Gum Woodland.

111. However, there are a large number of upcoming projects in the CWO region, including multiple wind farms, solar farms and coal mining projects, and the Department is looking carefully at potential cumulative impacts on biodiversity, particularly in relation to Box Gum Woodland.

112. Based on the next 10-12 projects at various stages of the planning process in the CWO region (including this project), the Department conservatively estimates that there could be a total area of impact of up to 2,000 ha of Box Gum Woodland.

113. In comparison to Dr Driscoll's recent estimate and the updated 2006 figure (reflective of estimated annual loss since 2006), this would represent between 0.03% and 0.85% of the total area of Box Gum Woodland in NSW.

114. The Department considers that it would be reasonable to conclude that a cumulative impact of less than 1% using the most conservative assumptions is still unlikely to contribute significantly to extinction of Box Gum Woodland, and therefore unlikely to be SAII.

115. However, the Department acknowledges that a precautionary approach may be appropriate and has been advising proponents to seek 'nature positive' outcomes that may help to further protect the Box Gum Woodland community.

116. With this in mind, Squadron has offered additional measures to minimise the impacts on Box Gum Woodland, which involves securely conserving an area of approximately 53.8 ha of Box Gum Woodland comprising 31.3 ha of intact woodland, 9.9 ha of disturbed and modified woodland and 12.6 ha of DNG (i.e. equivalent to total clearing of this community required for the project) within a Biodiversity Stewardship Agreement (BSA) area for the purpose of rehabilitation, enhancement and protection, in perpetuity.

117. Importantly, the BSA area which has been identified for this purpose is located within the Inland Slopes Interim Biogeographic Regionalisation of Australia (IBRA) sub-region. Given the project also occurs within the Inland Slopes and Talbragar Valley IBRA sub-regions, use of the proposed BSA would be consistent with the like-for-like trading rules under section 6.3 (2)(a)(i) of the BC Regulation (i.e. it would occur within the same or an adjoining IBRA sub-region). This would further ensure there is a net benefit for the Box Gum Woodland community from this project within the same (or adjoining) IBRA subregion as the project.

118. Consequently, the Department is satisfied that the project's impacts would not contribute significantly to the risk of extinction, and would not constitute SAII.

Large bent winged bat and large eared pied bat

119. No breeding habitat, which is the focus of the SAII Principle 4, would be directly impacted by the project. Consequently, the Department and BCS consider that the project's impacts would not contribute significantly to the risk of extinction of these species, and would not constitute SAII.

6.3.7 Significance of impacts on Commonwealth listed species and ecological communities

120. Squadron identified and addressed all threatened species and communities included in the Commonwealth Referral Decision (EPBC 2022/09387) (Referral Decision).

121. Assessments of significance were undertaken for threatened species and communities that were recorded during field surveys or were considered to have a moderate or higher potential to occur on the site, including two TECs, 12 threatened fauna species, and four migratory species.

122. Squadron concluded there may be a significant impact on two TECs (Box Gum Woodland CEEC and Grey Box Grassy Woodland EEC) and three vulnerable fauna species (superb parrot, glossy black cockatoo and white-throated needletail).

123. The Department considered Commonwealth matters in consultation with BCS and AG DCCEEW, including consideration of Squadron's assessments of significance and the relevant approved conservation advice, recovery plans and threat abatement plans (TAPs). A summary of the assessment is provided in **Appendix H**.

6.3.8 Biodiversity offsets

124. The project would generate a credit liability of 7,798 ecosystem credits and 1,677 species credits requiring offset under the NSW Biodiversity Offset Scheme.

125. The Department notes, the credit liability for the project equates to only roughly 30% of the number of credits required per turbine when compared to other wind farm projects recently assessed, such as Bowmans Creek Wind Farm (recently approved by the Commission) and Hills of Gold Wind (referred to the Commission but yet to be determined).

126. Both the Department and BCS are satisfied that the offset credit requirements have been correctly calculated. Squadron would offset the residual biodiversity impacts of the project in accordance with the NSW Biodiversity Offset Scheme, which includes the following options:

- acquiring or retiring 'biodiversity credits' within the meaning of the BC Act;
- making payments into an offset fund that has been developed by the NSW Government; or
- funding a biodiversity conservation action that benefits the entity impacted and is listed in the ancillary rules of the offset scheme.

127. Although the final breakdown of how the credit liability would be met is still under development, at this stage Squadron estimates that approximately 80% of the total credit liability would likely be secured through the establishment of five BSAs that are either already registered or under assessment.

128. The Department has recommended conditions requiring Squadron to retire the required biodiversity offset credits in accordance with the NSW Biodiversity Offsets Policy for Major Projects prior to carrying out any development that could directly or indirectly impact the biodiversity values requiring offset.

6.3.9 Recommended conditions

129. The Department has recommended conditions requiring Squadron to:

- minimise the clearing of native vegetation and key fauna habitat, including hollow bearing trees, within the development footprint and protect native vegetation and key fauna habitat outside the approved disturbance area in accordance with limits in the recommended conditions;
- prepare and implement the Biodiversity Management Plan which includes a description of the measure to:
  - minimise the impacts of the development on threatened flora and fauna species within the disturbance footprint;
  - secure land comprising 53.8 ha of Box Gum Woodland and implement measures to enhance and protect, in perpetuity, this vegetation to condition state commensurate with Box Gum Woodland;
  - rehabilitate and revegetate temporary disturbance areas and maximise the salvage of resources within the approved disturbance area for beneficial reuse (such as fauna habitat enhancement) during the rehabilitation and revegetation of the site;
  - control weeds and feral pests; and
  - provide a detailed program to monitor and report on the effectiveness of these measures.

- prepare and implement a Bird and Bat Adaptive Management Plan in consultation with BCS and the AG DCCEEW; and
- retire the applicable biodiversity offset credits in accordance with the NSW Offsets Policy prior to carrying out any development that could directly or indirectly impact the biodiversity values requiring offset.

6.3.10 Conclusion

130. The Department considers that significant effort has been made to avoid and minimise biodiversity impacts as far as practicable through project design. This has been achieved through measures such as locating infrastructure within areas of non-native vegetation, adopting buffers for important habitat features and avoiding threatened species habitat, including pine donkey orchid habitat and substantial areas of high quality Box Gum Woodland. Squadron has committed to adopt further avoidance wherever practicable as part of the detailed design process.

131. The Department considers that the recommended condition for a Biodiversity Management Plan and Bird and Bat Adaptive Management Plan would further minimise the impacts on vegetation and fauna, including the collision risk to avifauna.

132. Overall, the Department considers that the biodiversity impacts of the project are acceptable, subject to the implementation of the recommended conditions and offsetting the residual biodiversity impacts of the project.

6.4 Visual

133. Approximately 30% of public submissions objecting to the project raised concerns about visual impacts, particularly regarding the size and scale of the wind farm, views from residences and the cumulative impacts with other wind farms in the REZ.

134. Squadron commissioned a Landscape and Visual Impact Assessment (LVIA) in accordance with the Visual Assessment Bulletin (Visual Bulletin) as part of its EIS. The Department visited the site and several non-associated residences surrounding the project to assess the visual impacts and to further understand residents' concerns.

6.4.1 Avoidance and mitigation

135. The Visual Bulletin lists different visual impact mitigation options for consideration, including physical turbine alterations (re-siting, re-sizing and re-colouring), landscaping alterations such as vegetation screening, and landowner agreements for significantly affected landowners.

136. The Department considers that re-siting or removing turbines is generally the most effective mitigation option, given that re-sizing specific turbines is not a viable option for commercial and maintenance reasons.

137. Squadron reduced the number of proposed turbines from 138 to 117 throughout its design process prior to submitting the EIS. The Department acknowledges that deletion of 21 turbines has reduced the visual impact on the landscape and at many non-associated residences in and around Gollan and Dunedoo.

138. The Department also notes that the site selection and efforts from Squadron to resolve issues through project design and neighbour agreements has significantly reduced the potential for visual impacts such that there are three non-associated receivers within the black line.

139. Squadron proposes to address the residual visual impacts by:

- providing vegetation screening and/or supplementary plantings, in consultation with the relevant landowners;
- using turbines with a matte white, non-reflective finish, consisting of three blades with uniformity of colour, design, rotational speed, height and rotor diameter throughout;
- avoiding unnecessary lighting, signage and logos; and
- applying appropriate mitigation measures to lighting (including sensors, directional lighting and shielding).

6.4.2 Impact Assessment Approach

140. The Department assessed the visual impacts of the project against the Visual Bulletin's visual performance objectives. These depend on the visual influence zone (VIZ) of a receiver which is a combination of viewer sensitivity, visibility distance and scenic quality class, and comprises three zones: high (VIZ1), moderate (VIZ2) and low (VIZ3).

- **Visual Magnitude** – black (3.4 km) and blue (5 km) distance thresholds based on turbines 256 m tall indicate where turbines may significantly impact a receiver. In summary, the Visual Bulletin recommends for residences in:
  - VIZ1 within the blue line: avoid turbines or provide detailed justification for turbines;
  - VIZ2 within the black line: manage impacts as far as practicable and justify residual impacts, describing mitigation measures for turbines;
  - VIZ2 between the blue and black line: consider screening; and
  - VIZ3 within the black line: consider screening.
- **Multiple Wind Turbine Effects** – considers the cumulative landscape and visual impacts. The performance objectives for each receiver are dependent on viewer sensitivity level (rather than VIZ). For level 1 (high sensitivity) receivers, turbines within 8 km should avoid being visible in more than one 60 degree sector, and for level 2 (moderate sensitivity) receivers, avoid more than two 60 degree sectors.
- **Landscape Scenic Integrity** – considers how the project would alter the current landscape character and scenic quality of the visual catchment. For VIZ1 receivers, turbines should be very small or faint, or of a colour contrast that would not compete with major elements of the existing visual catchment. For VIZ2 receivers, wind turbines may be visually apparent and could become a major element, but not dominate the landscape. For VIZ3, turbines may be visually apparent or significantly modify the visual catchment.
- **Key Feature Disruption** – describes how likely turbines are to disrupt the central line of sight and/or the central focal viewing fields surrounding identified key features of a landscape. For VIZ1, turbines

should not remove, visually alter or disrupt an identified key landscape feature. For VIZ2, these impacts should be minimised. No objective applies to VIZ3.

- **Shadow Flicker and Blade Glint** – for each VIZ, shadow flicker to be limited to 30 hours per year and turbines finished with a low reflectivity surface treatment to minimise blade glint.
- **Aviation Hazard Lighting** – where required, aviation hazard lighting must meet the requirements of *Australian Standard AS 4282 - 1997* and any prescribed or notified CASA requirement. Shielding of all Aviation Hazard Lighting within 2 km of a residence and avoid strobe lighting.

6.4.3 Impact Assessment

141. There are 35 non-associated receivers located within 5 km (the blue line) of the nearest proposed turbine.

142. For ease of assessment, the Department grouped these non-associated receivers into three clusters (see **Figure 4**):

- **Golden Highway and upper Sandy Creek Road cluster**: residences to the north and north-east of the project;
- **Eastern cluster**: residences to the east of the project;
- **Southern cluster**: residences to the south and south-west of the project.

143. The Department's assessment of predicted visual impacts on non-associated receivers within the blue line is discussed below.

144. As shown in **Table 10**, the project would meet all the visual performance objectives in the Visual Bulletin for all receivers. The Department is satisfied that the project is suitable for the site and would not result in any significant visual impacts on the surrounding non-associated receivers.

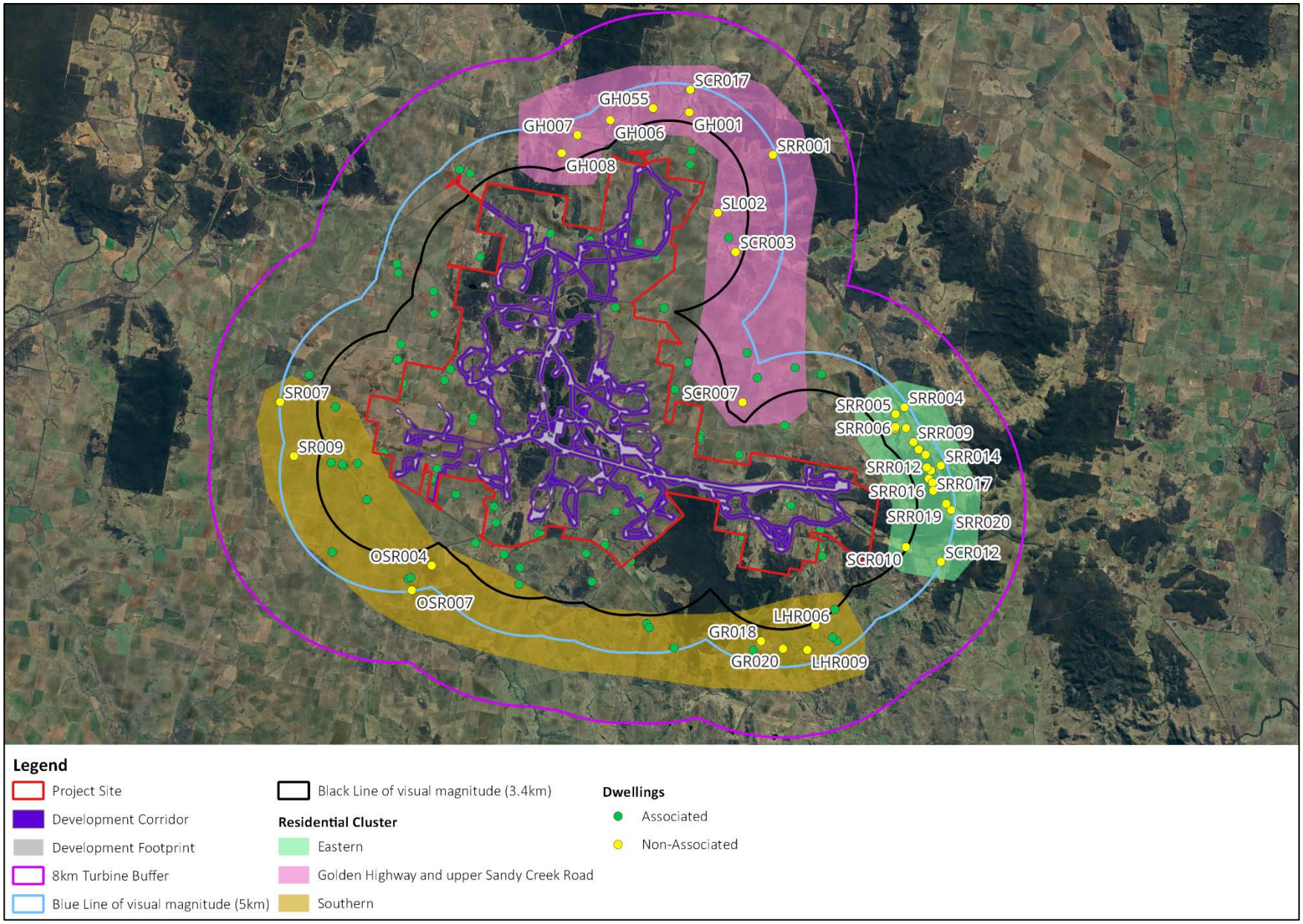

Figure 4 | Visual assessment clusters

Table 10 | Visual Impact Assessment – non-associated receivers below the blue line

Receiver	Turbine(s) and distance within black line (<3.4 km)	No. of turbines between black & blue line (3.4 – 5 km)	VIZ	Department assessment – aligns with visual performance objective?			Recommended Mitigation
				Visual Magnitude	Multiple wind turbine	Landscape scenic integrity/ Key feature disruption	
Golden Highway and upper Sandy Creek Road cluster							
GH006	None	4 (T1, T3, T4, T6)	VIZ2	Yes	Yes	Yes	Vegetation screening on request
GH007	None	4 (T1, T4, T6, T7)	VIZ2	Yes	Yes	Yes	Vegetation screening on request
GH008	None	7 (T1, T4, T6, T7, T9, T10, T8)	VIZ2	Yes	Yes	Yes	Vegetation screening on request
GH055	None	2 (T1, T3)	VIZ2	Yes	Yes	Yes	Vegetation screening on request
SCR017	None	1 (T1)	VIZ2	Yes	Yes	Yes	Vegetation screening on request
GH001	None	2 (T1, T3)	VIZ2	Yes	Yes	Yes	Vegetation screening on request
SRR001	None	1 (T1)	VIZ2	Yes	Yes	Yes	Vegetation screening on request
SL002	T3 (2.1), T1 (2.16), T5 (2.33)	2 (T4, T6)	VIZ2	Yes	Yes	Yes	Vegetation screening on request
SCR003	T5(3.05), T3 (3.26)	1 (T1)	VIZ2	Yes	Yes	Yes	Vegetation screening on request
SCR007	None	16 (T36, T40, T44, T51, T49, T59, T62, T66, T75, T80, T87, T90, T100, T103, T107, T83)	VIZ2	Yes	Yes - existing vegetation and farm buildings will screen views	Yes	Vegetation screening on request
Eastern Cluster							
SCR010	T103 (3.35)	2 (T97, T116)	VIZ2	Yes	Yes	Yes	Vegetation screening on request
SCR012	None	1 (T106)	VIZ2	Yes	Yes	Yes	Vegetation screening on request
SRR007	None	3 (T83,T79, T106)	VIZ2	Yes	Yes	Yes	Vegetation screening on request
SRR013	None	3 (T83, T79, T106)	VIZ2	Yes	Yes	Yes	Vegetation screening on request
SRR020	None	1 (T106)	VIZ2	Yes	Yes	Yes	Vegetation screening on request

Receiver	Turbine(s) and distance within black line (<3.4 km)	No. of turbines between black & blue line (3.4 – 5 km)	VIZ	Department assessment – aligns with visual performance objective?			Recommended Mitigation
				Visual Magnitude	Multiple wind turbine	Landscape scenic integrity/ Key feature disruption	
Southern Cluster							
LHR006	None	3 (T121, 116, 117)	VIZ2	Yes	Yes	Yes	Vegetation screening on request
LHR009	None	1 (T121)	VIZ2	Yes	Yes	Yes	Vegetation screening on request
GR020	None	2 (T121, T117)	VIZ2	Yes	Yes	Yes	Vegetation screening on request
GR018	None	3 (T121, T117, T116)	VIZ2	Yes	Yes	Yes	Vegetation screening on request
OSR004	None	9 (T92, T85, T79, T86, T88, T94, T93, T113, T102)	VIZ2	Yes	Yes	Yes	Vegetation screening on request
OSR007	None	1 (T92)	VIZ2	Yes	Yes	Yes	Vegetation screening on request
SR007	None	1 (T53)	VIZ2	Yes	Yes	Yes	Vegetation screening on request
SR009	None	3 (T92, T71, T53)	VIZ2	Yes	Yes	Yes	Vegetation screening on request

Golden Highway and upper Sandy Creek Road cluster

145. The Golden Highway and upper Sandy Creek Road cluster is located to the north and north-east of the project site and includes receivers in Dunedoo and Elong Elong in the vicinity of the Golden Highway, Sweeneys Lane and the northern section of Sandy Creek Road. The landscapes within this cluster consist of gently undulating to flat cleared grazing and cropping land with scattered patches of riparian vegetation and established roadside vegetation. The Department considers that the scenic quality of this locality is low to moderate. All receivers within this cluster are of level 2 visual sensitivity.

146. There are two non-associated receivers (SL002 and SCR003) within 3.4 km of a proposed turbine, and a further eight between 3.4 km and 5 km of a proposed turbine. Both SL002 and SCR003 are associated with the proposed Cobbora Solar Farm (which is subject to a separate application). Nonetheless, the Department has assessed the potential impacts of this project on both receivers.

147. Most receivers within this cluster would have views towards 9 turbines, which form a string of turbines towards the northern extent of the project site. One receiver (SCR007) would have distant views towards 16 turbines towards the eastern extent of the project site. The nearest turbine (T83) would be 4.05 km from the dwelling and views would be partially screened by intervening vegetation, topography and existing structures. **Figure 5** and **Figure 6** provide example wireframes and photomontages of representative views from receivers in this cluster.

148. Due to distance, intervening topography and existing mature vegetation, there would be limited visual impacts to non-associated receivers in this cluster. The Department is satisfied that the project layout aligns with the Visual Bulletin and has recommended conditions requiring Squadron to provide vegetation screening, if requested by the landowner.

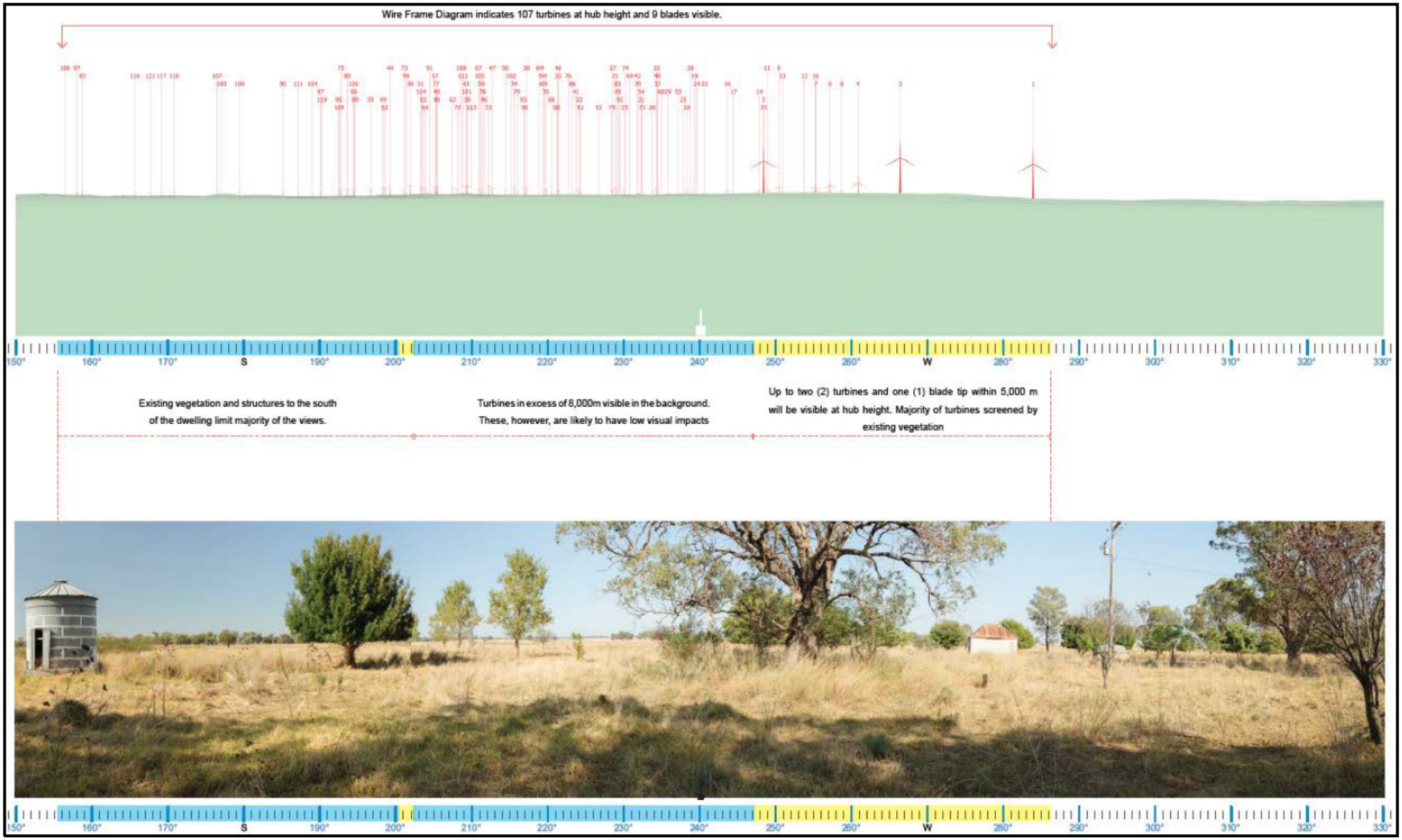

Figure 5 | Wireframe and photomontage for receiver SL002

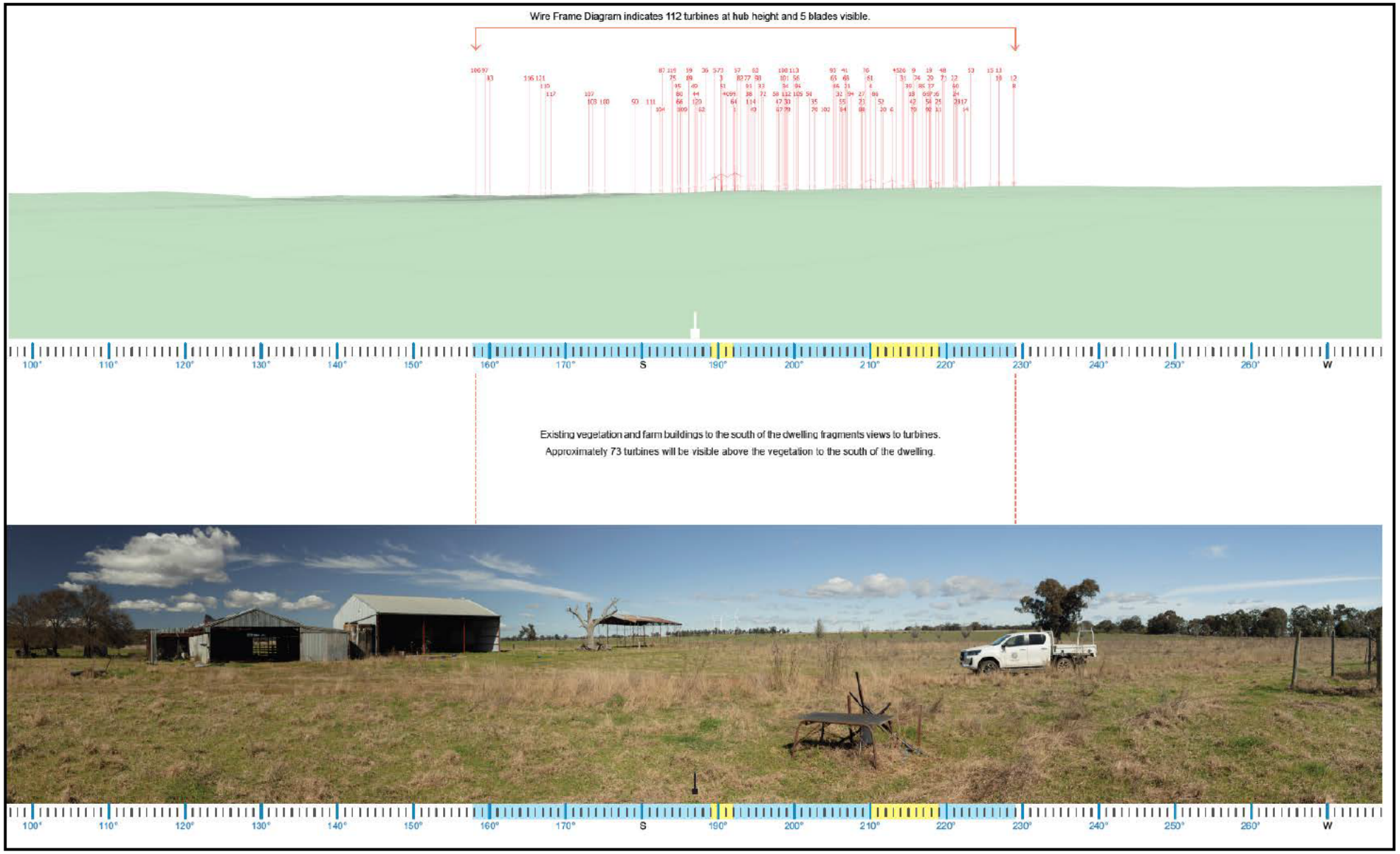

Figure 6 | Wireframe and photomontage for receiver GH001

Eastern cluster

149. The eastern cluster is located to the east of the project site, and includes receivers located along Spring Ridge Road and the southern portion of Sandy Creek Road. The landscape within this cluster includes remnant woodland and undulating hillsides which adjoin areas of dense remnant woodland along ridgelines and roadsides. The Department considers that the scenic quality of this locality is moderate. All receivers within the northern cluster are of level 2 visual sensitivity.

150. There is one non-associated receiver (SCR010) within 3.4 km of a proposed turbine and a further 17 between 3.4 km and 5 km. Detailed dwelling assessments were conducted for five receivers within this cluster. These receivers would have views towards four turbines, which are located on the easternmost extent of the project site. Receivers in this cluster would also have limited and distant views towards a further five turbines, partially or wholly screened by existing mature vegetation and topography. **Figure 7** shows the wireframe and photomontage for SCR010, the closest receiver in this cluster.

151. The remaining 12 receivers in this cluster are located along Spring Ridge Road and are surrounded in existing mature vegetation along roadsides and remnant vegetation along the surrounding rolling hills, which would limit views towards the project. The aerial imagery of receiver SRR007 shown in **Figure 8** is an example of the dense vegetation surrounding receivers along Spring Ridge Road and **Figure 9** is the wireframe from SRR007, which is the closest receiver along Spring Ridge Road.

152. Given the limited visual impacts on all non-associated receivers in this cluster, the Department does not consider that mitigation measures beyond visual screening are warranted. In this regard, the Department has recommended conditions requiring Squadron to offer visual impact mitigation measures, such as landscaping and/or vegetation screening at these dwellings, if requested by the landowners.

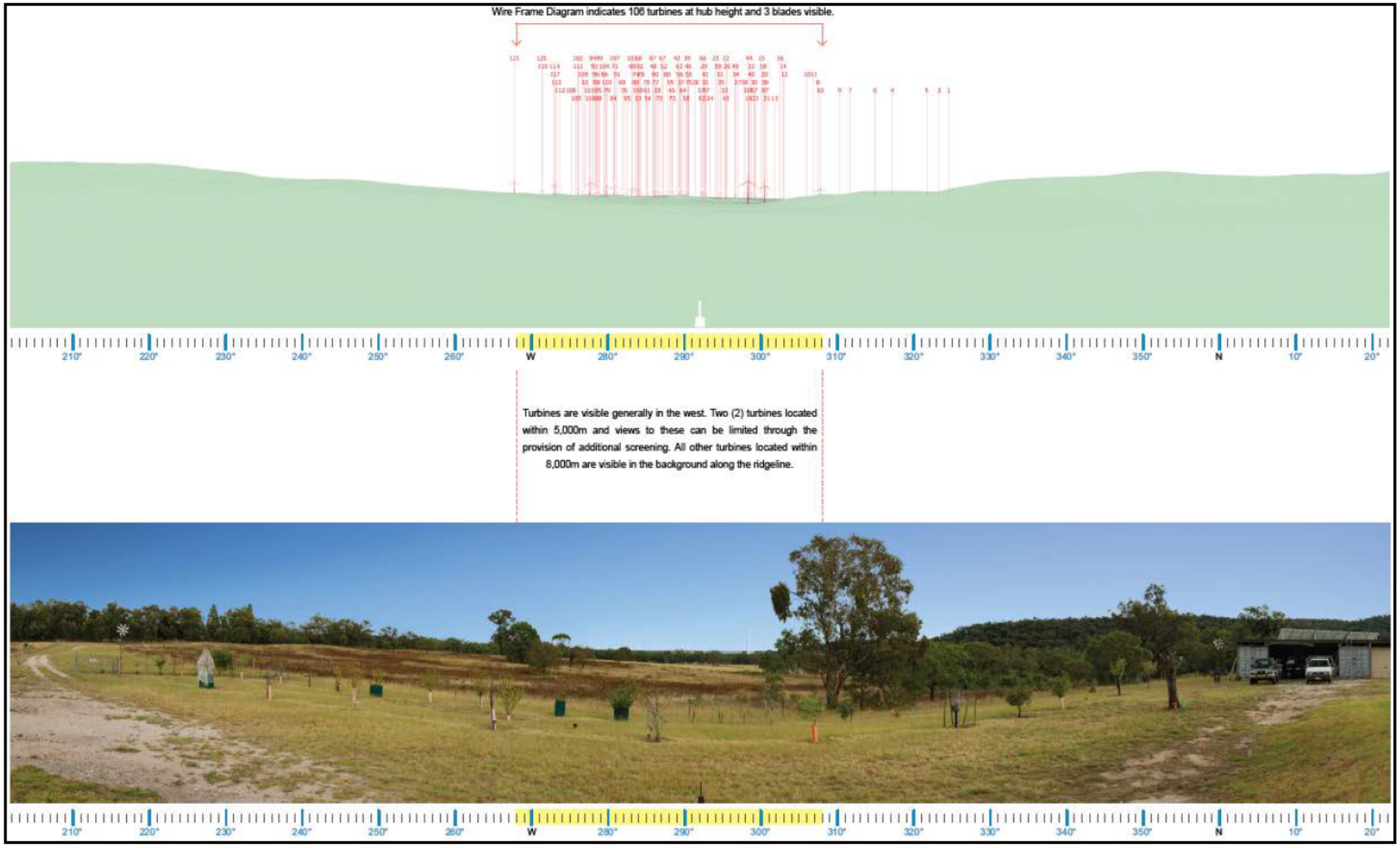

Figure 7 | Wireframe and photomontage for receiver SCR010

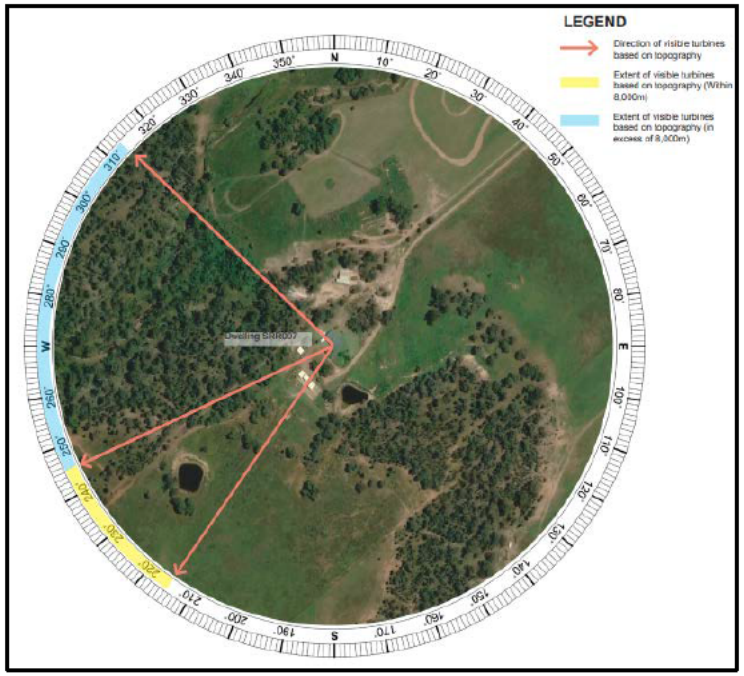

Figure 8 | Dense vegetation surrounding receiver SRR007 along Spring Ridge Road

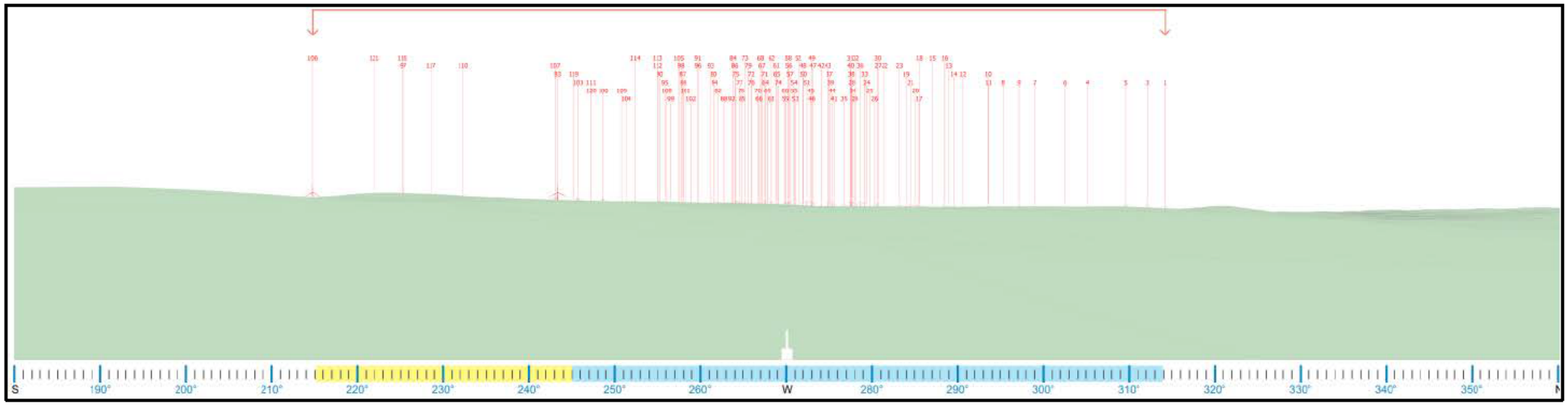

Figure 9 | Wireframe for receiver SRR007

Southern cluster

153. The southern cluster is located to the south and south-west of the project site and includes receivers in the vicinity of Gollan Road, Lambing Hill Road, Old Station Road and Saxa Road to the west. The landscape within this cluster includes pastures with remnant vegetation along Saxa Road and partially vegetated hills along the Gollan Road and Lambing Hill Road receivers. The Department considers that the scenic quality of this locality is moderate. All receivers in the southern cluster are of level 2 visual sensitivity.

154. There are no non-associated receivers within 3.4 km of a proposed turbine and eight between 3.4 km and 5 km of a proposed turbine. Receivers on the eastern side of this cluster would primarily have views towards three turbines (T116, T117 and T121) (**Figure 10**). Receivers along Old Station Road would have views towards nine turbines (T79, T85, T86, T88, T92, T94, T93, T102 and T113). Receiver SR009 would primarily have views of T53, T71 and T92 (**Figure 11**). Receivers within this cluster benefit from distance, intervening topography and existing remnant vegetation.

155. The Department considers that there would be limited visual impacts on non-associated receivers in this cluster and does not consider that mitigation measures beyond visual screening are warranted. The Department is satisfied that the project layout aligns with the Visual Bulletin and has recommended conditions requiring Squadron to offer visual impact mitigation measures, such as landscaping and/or vegetation screening at these dwellings, if requested by the landowner.

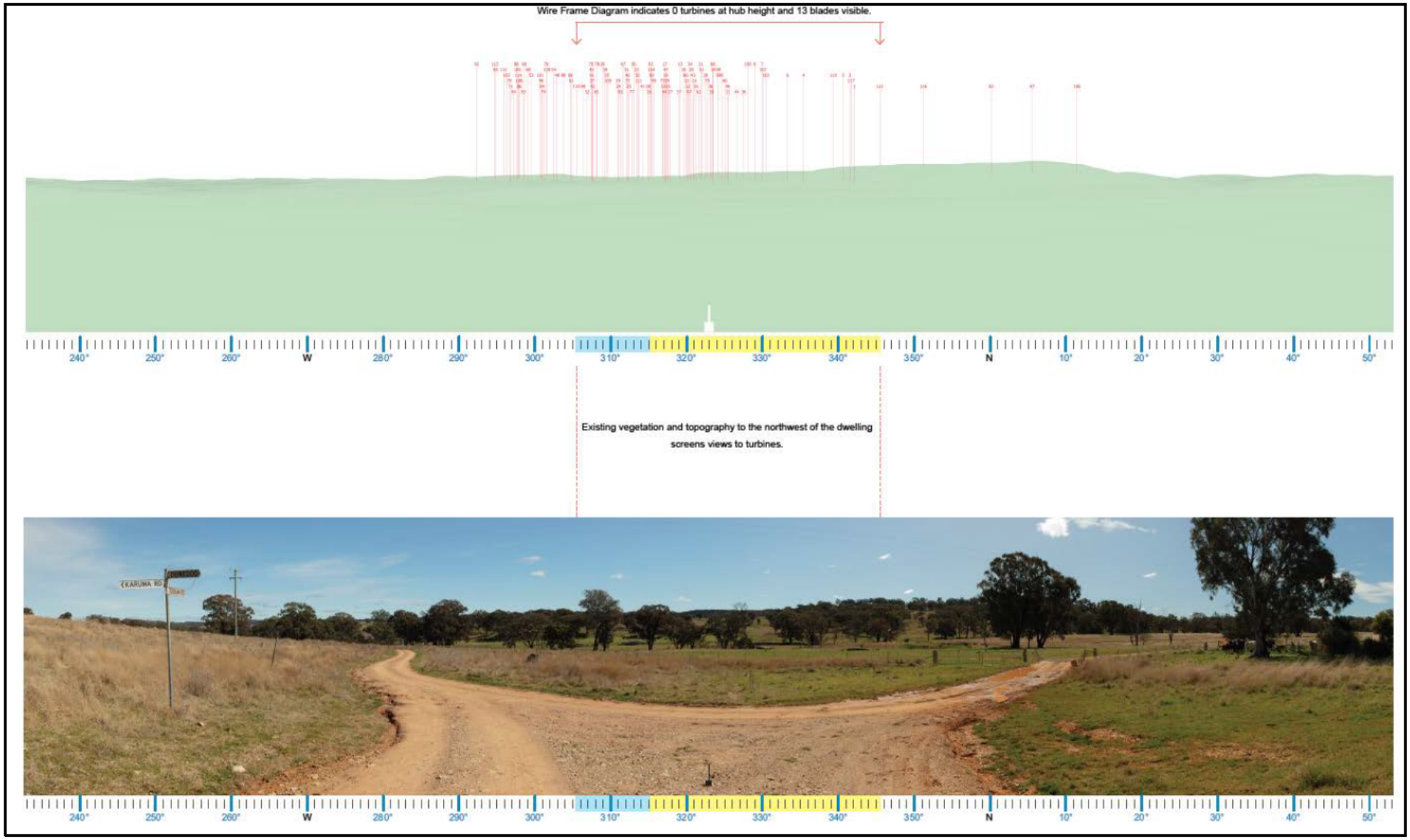

Figure 10 | Wireframe and photomontage for receiver LHR009

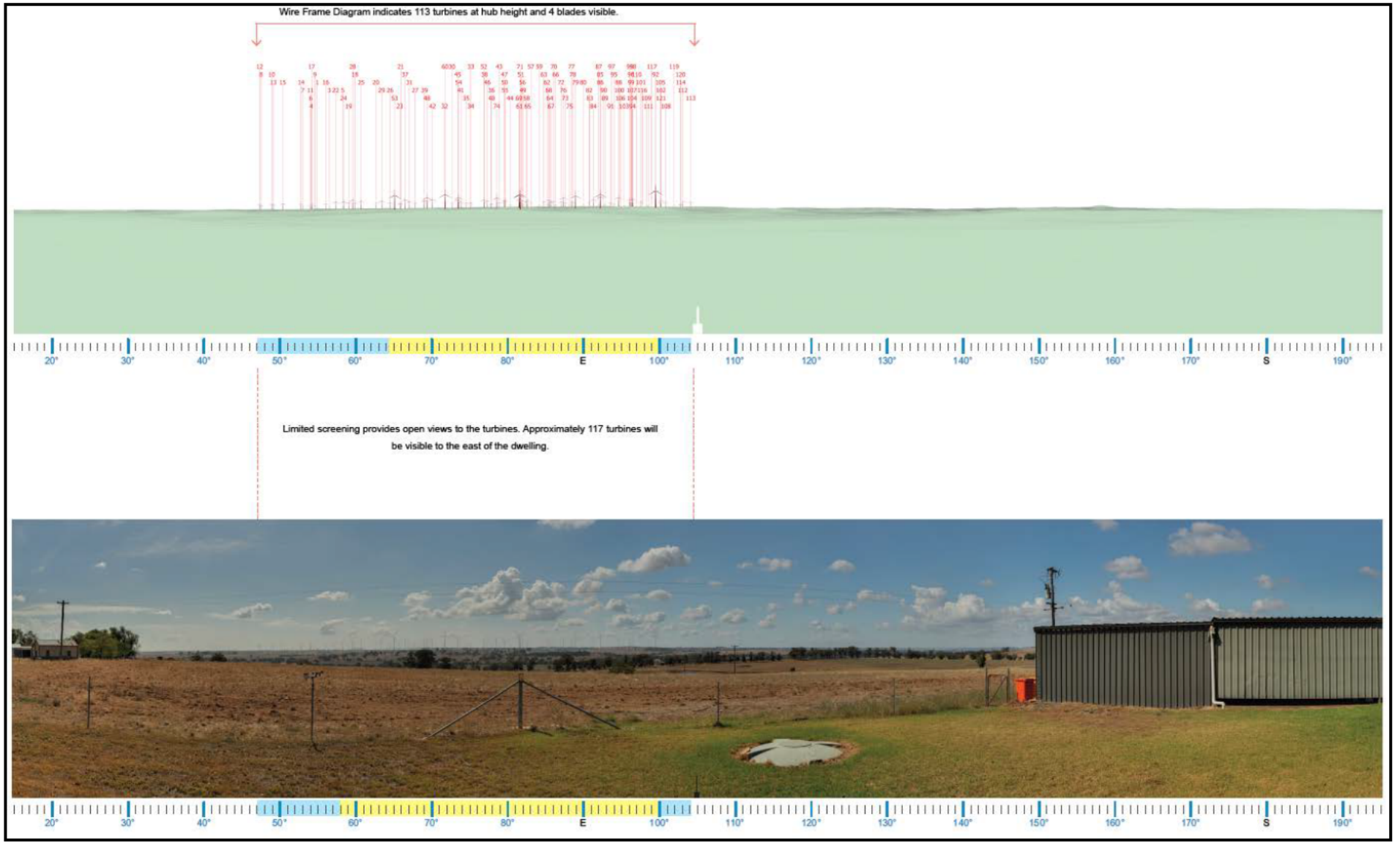

Figure 11 | Wireframe and photomontage for receiver SR009

Cumulative impacts

156. There are four proposed energy projects located east of the project: Sandy Creek Solar Farm, Cobbora Solar Farm, Dapper Solar Farm and Orana Wind Farm (collectively the nearby projects). One of these projects (Sandy Creek Solar) has recently submitted a development application, with the remaining three projects at an earlier stage of the planning process.

157. The LVIA found that 14 non-associated receivers are located within 8 km of the Project, and within 4 km of either the Sandy Creek Solar Farm, the Cobbora Solar Farm or Dapper Solar Farm, and have the potential to view multiple projects simultaneously. The assessment was based on topography alone and it is likely that intervening vegetation would reduce views for the majority of the dwellings. It is noted that three of these non-associated dwellings (SL002, SCR003 and GH001) are associated with the solar farm projects.

158. The Department has not yet received an EIS for the Orana Wind Farm, however understands that the project layout is being refined.

159. As Squadron lodged the development application for this project prior to the nearby projects, the applicants of the nearby projects would be required to include a cumulative impacts assessment with the EIS having regard to existing and approved energy projects located in proximity to their projects, in accordance with the Visual Bulletin and the SSD Guidelines.

160. The Project would connect to the western extent of the approved CWO REZ Transmission line. There is one non-associated receiver (SCR007) in proximity to both the project (4 km from nearest turbine) and the CWO REZ transmission line (1.8 km from the easement) and therefore the infrastructure for both projects would not be dominant in the landscape for this receiver. Further, the dwelling is surrounded in dense vegetation that would shield any distant views of the project and the transmission line.

Key public viewpoints

161. Squadron identified and assessed the visual impacts of the project from 16 public viewpoints surrounding the project in accordance with the visual performance objectives in the Visual Bulletin, including:

- no VIZ1 viewpoints;
- VIZ2 viewpoint – one viewpoint located along Gollan Road (VP06);
- VIZ3 viewpoints (15 locations) – including locations along Dapper Nature Reserve and local roads in Elong Elong, Gollan, Spicers Creek, Tallawang, Goolma and Dunedoo.

162. The VIZ2 viewpoint on Gollan Road is 840 m from the nearest proposed turbine. The LVIA found that the project would be visible from this location due to the flat to gently undulating landscape and scattered roadside vegetation. The Department considers that at this location there would be limited numbers of traffic and views would be short in duration. Additionally, there are no non-associated receivers in close proximity to this viewpoint and would therefore not have a significant impact.

163. Six viewpoints assessed as VIZ3 are located within the black line, two viewpoints are between the black and blue line. The Department considers that at these locations there would be limited numbers of traffic and views would be short duration and would not have a significant impact. While some wind turbines

would be visible from most public viewpoints assessed, these views would benefit from distance, intervening topography, and existing mature vegetation. The Department recognises that undulating landforms and densely vegetated areas which partially obstruct views of the turbines from the broader landscape, and considers that the project would not dominate the existing visual catchment.

164. The Department considers that the visual performance objectives would be achieved at all public viewpoint locations.

Ancillary infrastructure

165. The project's ancillary infrastructure includes a switching station and on-site substations connected by an overhead 330 kV power line, meteorological masts, site access roads, construction-related temporary batching plants and laydown areas. Squadron has sited this infrastructure to minimise visibility from existing residences and publicly accessible viewpoints.

166. The Department undertook an assessment of the visual impacts associated with the project's ancillary infrastructure, and considers the project's ancillary infrastructure is unlikely to have a significant visual impact given there are existing transmission lines and agricultural infrastructure in the area, the location of ancillary infrastructure away from non-associated receivers, the intervening topography and vegetation, and Squadron's proposed landscape treatments and selection of ancillary infrastructure components of low visual contrast.

167. Notwithstanding, the Department has recommended conditions requiring the Applicant to ensure the visual appearance of all ancillary infrastructure (including paint colours, specifications and screening) blends in as far as possible with the surrounding landscape.

Shadow flicker and blade glint

168. The project has the potential for shadow flicker and blade glint. The Visual Bulletin's objective for shadow flicker is no more than 30 hours per year.

169. Squadron's LVIA included a Shadow Flicker Assessment, which concluded that the proposed layout would achieve the recommended limit of 30 hours per year at all non-associated receivers.

170. Notwithstanding, the Department has recommended conditions requiring Squadron to ensure that shadow flicker from turbines does not exceed 30 hours per annum at any non-associated receiver.

171. Blade glint is addressed through Squadron's commitment to using subtle colours and low-reflectivity surface treatment on turbines.

Aviation hazard lighting

172. Under the *National Airports Safeguarding Framework, Guideline D Managing the Risk to Aviation Safety of Wind Turbine Installations (Wind Farms) / Wind Monitoring Towers, National Airports Safeguarding Advisory Group, 2012* (NASF Guidelines), the Civil Aviation Safety Authority (CASA) is required to be notified if a proposed wind turbine or wind monitoring tower is higher than 150 m or infringes on the Obstacle Limitation Surfaces (OLS) of an aerodrome. CASA may determine, and subsequently advise an applicant and relevant planning authorities, whether it considers obstacle lighting is required for the project.

173. If such lighting is required, the NASF Guidelines recommend that to minimise visual impacts "obstacle lights may be partially shielded, provided it does not compromise their operational effectiveness. Where obstacle lighting is provided, lights should operate at night, and at times of reduced visibility. All obstacle lights on a wind farm should be turned on simultaneously and off simultaneously."

174. Squadron's Aviation Impact Assessment (AIA) study concluded that no obstacle night lighting would be required for the project to maintain an acceptable level of safety to aircrafts. However, CASA recommended that the wind farm is obstacle lit with steady medium intensity red lighting in accordance with the NASF Guidelines. CASA also advised the installation of 200 candela lighting was appropriate considering the location of the project. In the Submissions Report, Squadron committed to preparing an Aviation Lighting Plan in consultation with CASA incorporating their recommendations.

175. The project is partially located within 200 km of Siding Spring Observatory (the Observatory) and therefore falls within the Dark Sky Region covered by the NSW Government's *Dark Sky Planning Guideline.* A consent authority must consider this guideline for State Significant development that is likely to impact the night sky and is within 2 km of the Observatory. The Observatory requested consultation throughout the installation of aviation lighting. Squadron has committed to consulting with the Observatory in relation to the Aviation Lighting Plan to make a quantitative assessment of the impact of the lighting required by CASA for the project.

176. The Department has recommended conditions requiring Squadron to install aviation hazard lighting in accordance with CASA recommendations and in a manner that minimises any adverse visual impacts.

6.4.4 Conclusion

177. The Department is satisfied that the project would not result in significant visual impacts on surrounding non-associated receivers. The project is suitable for the site, would meet the visual performance objectives in the Visual Bulletin and would not materially alter the landscape.

178. To minimise and manage the residual visual and lighting impacts as far as practicable the Department has recommended conditions requiring Squadron to:

- provide visual impact mitigation measures, such as landscaping and/or vegetation screening, to non-associated residences within 5 km of any approved turbine, upon receiving a written request from the owners of these residences;
- implement all reasonable and feasible measures to minimise the impacts of the visual appearance of the development;
- paint turbines off-white/grey and finish the blades with a treatment that minimises potential for any glare or reflection;
- implement all reasonable and feasible measures to minimise the off-site lighting impacts of the development; and
- ensure that shadow flicker associated with turbines does not exceed 30 hours per annum at any non-associated residence.

6.5 Traffic and Transport

179. The construction of the project would involve the delivery of large plant, equipment and materials to site including by oversized and over-mass (OSOM) vehicles and heavy vehicles requiring escort which has the potential to impact the local and regional road network.

180. Squadron prepared a Transport Assessment and Route Study as part of its EIS and provided additional information to the Department throughout the assessment process, including details on proposed road upgrades.

181. Squadron's assessment assumed the maximum blade length was approximately 85 m with a required vehicle length accessing the site of 95 m long to transport turbine blades, and the heaviest vehicles would weigh about 256.5 tonnes to transport the transformers.

182. Advice from TfNSW and submissions from Dubbo Shire Council, Warrumbungle Shire Council, Mid-Western Regional Council and the public raised concerns regarding the increase in heavy vehicles movements and associated impacts on the local road network, road and intersection upgrades to facilitate OSOM/heavy vehicle movements, the suitability of the proposed transport routes, and cumulative traffic and transport impacts with other renewable energy projects.

6.5.1 Site access and transport route

183. Between the Port of Newcastle to site, Squadron is proposing two transport routes (shown on **Figure 12**). These routes are:

- **Route 1 (standard route):** preferred transport route from the Port of Newcastle to the Project Site to be via Selwyn Street, George Street, Industrial Drive, Maitland Road, New England Highway, John Renshaw Drive, Hunter Expressway, New England Highway, Golden Highway (to Dunedoo).
- **Route 2 (high load route):** Selwyn Street, George Street, Industrial Drive, Maitland Road, New England Highway, John Renshaw Drive, Hunter Expressway, New England Highway, Golden Highway, Denman Road, Bengalla Road, Wybong Road, Golden Highway (to Dunedoo).

184. The Department notes that EnergyCo has committed to facilitating road upgrades to the State road network between the Port of Newcastle and CWO-REZ.

185. In addition, Squadron has identified the daily construction routes to and from construction areas within the project, which would be used regularly by both light and heavy vehicles. These comprise of the Golden Highway (State highway), Saxa Road, Gollan Road, (regional roads), Sweeneys Lane and Tallawonga Road (local roads).

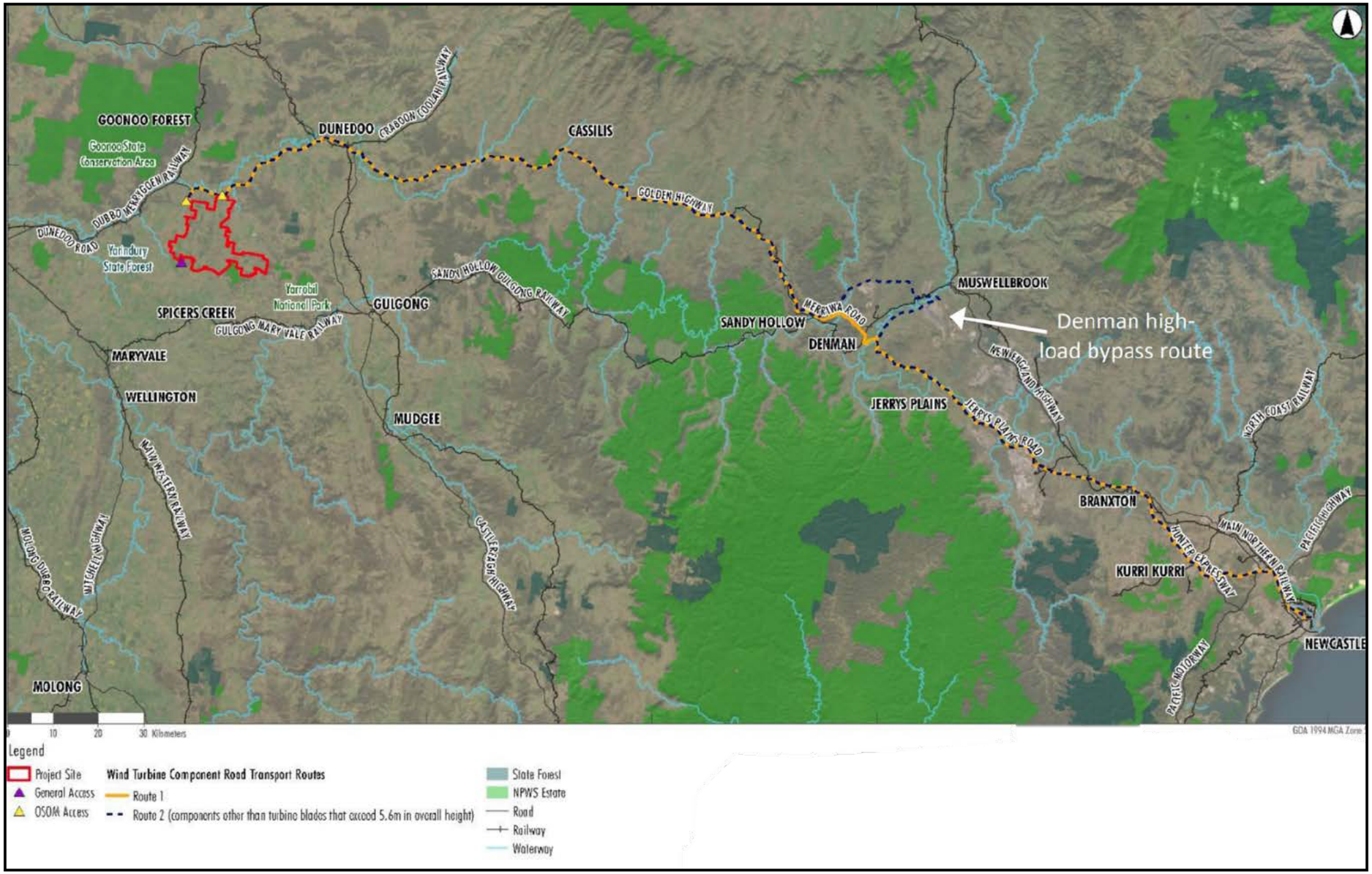

Figure 12 | Transport route from Port of Newcastle to site

186. During construction, light, heavy and OSOM vehicles would access the site from the Golden Highway and then via eight access points. Following exhibition of the EIS and in response to community and TfNSW feedback, Squadron amended their proposed access points to the following (see **Figure 2**):

- two access points to be constructed along Sweeneys Lane for OSOM, heavy and light vehicles;
- five access points along Tallawonga Road for OSOM, heavy and light vehicles; and
- one access point from Ben Hoden Road (via Gollan Road) for heavy and light vehicles only.

6.5.2 Traffic volumes

187. The main increase in project related traffic would occur during the 40 month construction period, with a peak period of approximately 6 months for the construction of foundations and delivery of WTG components.

188. During peak construction times, the project would generate up to 236 light vehicle and 248 heavy vehicle movements per day, 10 of which would be heavy vehicles requiring escort and 80 of which would be bus trips for staff transport to and from the accommodation camp located in Dubbo.

189. Operational traffic is expected to be minimal, with up to 40 light vehicle movements per day, associated with maintenance and monitoring activities.

6.5.3 Road upgrades and maintenance

190. Squadron assessed the traffic impacts of the project in the traffic assessment prepared as part of the EIS. Squadron later provided an updated traffic assessment that accompanied the Submissions report. Squadron assessed the impacts of the project on the intersections and levels of service of the proposed transport routes. The assessment concluded that the levels of service along the rural road network (Golden Highway, Saxa Road, Gollan Road) during the peak construction period would only be marginally reduced, with most roads in the rural road network having significant spare capacity and ability to absorb increased traffic numbers during construction.

191. Squadron proposes to undertake intersection upgrades and road upgrades to facilitate construction vehicle access to site, including:

- Golden Highway / Sweeneys Lane intersection:
- Saxa Road / Tallawonga Road intersection
- Gollan Road / Ben Hoden Road intersection
- Tallawonga Road;
- Ben Hoden Road; and
- Sweeneys Lane.

192. The Golden Highway / Sweeneys Lane intersection and Saxa Road / Tallawonga Road intersection would be upgraded to provide basic left (BAL) and short channelised right (CHRs) treatments. The Gollan Road / Ben Hoden Road intersection would be upgraded to provide a basic right (BAR) and basic left (BAL) turn treatments.

193. EnergyCo would undertake upgrade works for the Golden Highway / Saxa Road intersection as part of the Port to REZ upgrades.

194. The Department has recommended conditions requiring Squadron to implement necessary road upgrades in accordance with the relevant standard and timing requirements, to the satisfaction of Dubbo Council and Transport for NSW, and to regularly maintain all roads along the transport route and repair any damage to the road network caused by any project-related traffic.

195. Squadron proposes to use a network of internal access tracks for vehicle movements within the site. Some of these access tracks involve vehicles crossing over public roads. Vehicles would not deviate from the network of access tracks onto the public road network. In response to concerns raised by Warrumbungle Shire Council, the Department has recommended a condition requiring Squadron to repair any damage to the public roads, at these crossing points, caused by project related traffic.

196. In addition to the above, the project relies on a number of road upgrades along the transport route from port to site to accommodate heavy vehicles requiring escort. These upgrades would be undertaken by EnergyCo to support the renewable energy zones. The schedule of road upgrades to be undertaken by EnergyCo are included in the recommended conditions of consent (**Appendix E**). Squadron has committed to undertake all necessary upgrades for the project prior to commencing construction (subject to a separate planning approval) if these upgrades are not undertaken by EnergyCo.

197. A school bus service operates along Saxa Road, with a school bus stop located on Sweeneys Lane. Squadron committed to schedule OSOM and heavy vehicle movements on Sweeneys Lane and use of site accesses, outside of peak school hours to avoid interruption to school bus services. The Department has recommended conditions for a Traffic Management Plan to address this matter.

6.5.4 Cumulative traffic impacts

198. There are a number of approved or proposed energy projects in the region, given the project's location in the CWO REZ which have the potential to use the Golden Highway.

199. Traffic modelling indicates the Golden Highway has sufficient capacity to accommodate construction and operational traffic associated with the project as well as potential cumulative traffic impacts if concurrent construction were to occur with surrounding State significant projects in the region.

200. Squadron has committed to working with EnergyCo, other projects and road authorities to coordinate transport planning, including scheduling of construction activities and deliveries for the project in consideration of other projects using the same road network, so that any overlap is suitably managed.

6.5.5 Recommended conditions

201. The Department recommends conditions requiring the Applicant to:

- restrict project related vehicles to the use of the approved access routes
- undertake dilapidation surveys of the relevant local roads and repair any damage resulting from project traffic;

- undertake all necessary road and intersection upgrades to the satisfaction of the road asset manager and/or the relevant roads authority prior to the use of roads for deliveries from heavy and heavy vehicles requiring escort;
- ensure the other upgrades from the port for heavy vehicles requiring escort vehicles in City of Newcastle Council and the Muswellbrook Shire Council areas are undertaken by the relevant authority facilitating the renewable energy zones (e.g. EnergyCo or other) prior to the use of roads for deliveries from heavy vehicles requiring escort; and
- prepare a Traffic Management Plan in consultation with the road asset manager and relevant roads authority.

202. Subject to the recommended conditions, the Department is satisfied that the project would not result in significant impacts on road network capacity, efficiency or safety.

6.5.6 Conclusion

203. The Department considers the proposed transport routes could be appropriately upgraded to facilitate the transportation of large turbine components to the site. The road upgrades proposed have been developed in consultation with the relevant roads authorities, noting that the final road upgrade works would be subject to detailed design and approval of the road asset manager and/or relevant road authority prior to the implementation of these works or would be upgraded as part of the works to facilitate the renewable energy zones.

6.6 Other Issues

204. The Department's consideration of other issues is summarised in **Table 11**.

Table 11 | Assessment of other issues

Issue	Recommended conditions
Noise and vibration	
• Submitters raised concerns regarding the potential noise issues of the project, including concerns about the construction and operational noise, low frequency noise, infrasound from wind turbines, and traffic noise. • The project has the potential for noise impacts at nearby receivers during construction and operation. • The Department notes the existing background noise levels of the locality are less than 35 dB(A) during calm weather conditions, which is typical for a rural setting. **Construction noise and vibration** • Squadron's Noise Impact Assessment (NIA) predicts that only three non-associated receivers would exceed the 45 dB(A) noise-affected management level during construction and only during the proposed road upgrades which would be completed within a six-month period. Importantly, the predicted construction noise levels at these receivers would be well below the highly noise affected level of 75 dB(A) as outlined in the *Interim Construction Noise Guideline*. • The distances required to achieve the construction vibration criteria provided in *Assessing Vibration: A Technical Guideline* (DECC, 2006) are in the order of 20 m from the project, with vibration from construction activities unlikely to be detectable to humans at a distance of 100 m. As the proposed construction activities would be located more than 100 m from all non-associated receivers, the project would comply with relevant criteria provided in DECC 2006. • Blasting may be required to excavate bedrock for turbine foundations. Squadron has committed to implementing a monitoring regime to ensure compliance with the *Technical Basis for Guidelines to Minimise Annoyance due to Blasting Overpressure and Ground Vibration (ANZECC, 1990).* The Department has recommended conditions for blasting, including strict criteria for airblast overpressure and allowable exceedances for all blasting carried out for the project, and requiring the Applicant to comply with blasting limits at all receivers. **Construction traffic noise** • The project has the potential to cause noise impacts associated with the general increase in daily traffic along the proposed access routes. Disturbance levels would be directly related to the proximity of a receiver to an access route.	• Restrict construction to standard construction hours (i.e. 7 am to 6 pm Monday to Friday, and 8 am to 1 pm Saturday). • Construction outside of standard construction hours subject to approval from the Planning Secretary on a case-by-case or activity specific basis. • Limit blasting on site to between 9 am and 5 pm. • Verify through noise monitoring that the noise generated by the operation of the wind farm does not exceed 35 dB(A) or the existing background noise level ($L_{A90\,(10\text{-minute})}$) plus 5 dB(A) for each integer wind speed.

Issue	Recommended conditions
• Construction traffic noise impacts were assessed in accordance with the *NSW Road Noise Policy 2011* (RNP). The NIA found that one non-associated receiver (GH007) would experience an exceedance of the relevant noise criteria, however noise levels at this receiver would already be subject to exceedances of the criteria due to existing traffic noise. • Although the project would result in a further increase of 1.7 dB(A) over the proposed 40-month construction period, this is considered to constitute a minor impact, noting an increase of less than 2 dB(A) that is barely perceptible to the average person. • To ensure construction traffic noise impacts are managed appropriately, the Department has recommended conditions requiring Squadron to restrict construction activities to the daytime and implement best management practice to minimise road traffic noise as part of a Traffic Management Plan for the project. **Operational noise** • Operational noise levels were assessed in accordance with the requirements of the Department's *Wind Energy: Noise Assessment Bulletin* (2016) (the Noise Bulletin). Consistent with the Noise Bulletin, the NIA calculated environmental noise criteria for operation of the turbines, based on different wind speeds. In summary, the criterion for each wind speed is the greater of 35 dB(A), or the background noise level plus 5 dB(A). The Department has recommended conditions requiring the applicant to comply with these criteria. • Squadron's NIA predicts that noise impacts associated with the project, including consideration of low-frequency noise, would comply with the operational noise criteria for all non-associated receivers. • The NIA also included an assessment of noise impacts on amenity and recreational uses (noting recreational use is limited and permits are required for entry) within the Dapper Nature Reserve in accordance with the *Noise Policy for Industry* (NPfI) (NSW EPA, 2017). • Typically, the project amenity level is determined as 5 dB(A) less than the recommended amenity level (which for a nature reserve would be 50 dB(A)) to prevent the noise from multiple industrial sources in the area from exceeding the amenity level. The NPfI allows for an exception to this rule where "*cumulative industrial noise is not a necessary consideration because no other industries are present in the area, or likely to be introduced in the future*". • Given the relatively secluded nature of this project, the NIA concludes that this exception applies and assigns an amenity level of 50 dB(A) for the Dapper Nature Reserve. A further 3 dB correction factor has been applied to approximate the average noise level of a 15-minute period. As such, the final noise criteria for an assessment over a 15-minute period for the Dapper Nature Reserve was determined to be 53 dB(A).	

Issue	Recommended conditions
• The EPA did not raise any concerns with this approach, and the Department considers it to be consistent with the NPfI. • The NIA predicts a combined total noise level at Dapper Nature Reserve, including the operation of wind turbines and ancillary infrastructure, of 48 dB(A). The NIA applies a correction factor for low frequency noise applicable to locations on the walking trail closest to the project, of 2 dB(A) and 5 dB(A) during the day period, and evening/night periods, respectively. Accordingly, the NIA concludes that the project would achieve the relevant criteria of 53 dB(A) during the day, evening and night periods. • In consideration of the above, the Department considers the noise impacts associated with the project are acceptable.	
Heritage	
Aboriginal Heritage • Squadron prepared an Aboriginal Cultural Heritage Assessment (ACHA) to assess the impacts of the project on Aboriginal heritage. The ACHA identified 64 Aboriginal heritage items (61 artefact scatters, two grinding groove sites and one potential stone procurement area) in addition to one previously recorded AHIMS site located within proximity of the project. • All sites were determined to have low significance, with the exception of the following sites: - three sites of high significance (one grinding groove and two artefact scatters); - five sites of moderate significance (one grinding groove and four artefact scatters); and - five sites of low/moderate significance (one potential stone procurement area and four artefact scatters). • Squadron has committed to avoiding impacts to two sites of high significance (SU20/L1 and SU33/L1), the grinding groove site of moderate significance (SU2/L1), and the potential stone procurement area (SU25/L1). • Squadron would avoid impacts to the third site of high significance (SU12/L5 – stone artefact) if possible. If impacts are unavoidable, Squadron would salvage the artefact as recommended in the ACHA. • Squadron has committed to undertaking management and impact mitigation measures (e.g. avoidance, collection and salvage, etc) for all 13 Aboriginal sites within the development corridor identified as having high, moderate or low/moderate significance as recommended in the ACHA. • Accordingly, the Department has recommended Squadron prepare a Heritage Management Plan in consultation with Aboriginal stakeholders and Heritage NSW, which outlines measures proposed to be undertaken at each site.	• Ensure the development does not cause any direct or indirect impacts on any items located outside the development footprint. • Salvage and relocate Aboriginal items to suitable alternative locations. • Implement all reasonable and feasible measures to avoid and minimise harm to Aboriginal heritage items located within the development corridor. • Undertake consultation with Aboriginal stakeholders prior to construction. • Prepare and implement a Heritage Management Plan, in consultation with Aboriginal stakeholders and Heritage NSW including procedures for unexpected finds.

Issue	Recommended conditions
• Heritage NSW confirmed that the proposed impacts to Aboriginal cultural heritage can be adequately managed through the recommended conditions of consent. **Non-Aboriginal Heritage** • There are no Commonwealth or World listed heritage places, nor State listed or locally listed heritage places or items within or close to the site. • There are five listed local heritage items in the surrounding area. These include: - Gollan Hall and War Memorial (listed under the Dubbo Regional LEP approximately 1.5 km south-west of the project site); - Elong Elong General Cemetery (listed under the Dubbo Regional LEP approximately 2.7 km north-west); - Cobbora Police Station Court House and Gaol (listed under the Warrumbungle LEP approximately 8 km north-east of the project site); - Cobbora (Former) School and Residence (listed under the Warrumbungle LEP approximately 8 km north-east of the project site); and - Cobbora General Cemetery (listed under the Warrumbungle LEP approximately 8 km north-east of the project site). • There would be no direct impacts to any of these sites, or their associated curtilages. • Surveys identified eight new heritage items within the site, however none of these have significant heritage value, and they do not meet the criteria for local or state heritage significance. • The Department is satisfied that the project would not have any adverse impacts on non-Aboriginal heritage items in the local area. Any unexpected finds of potential heritage significant on site would be appropriately managed by an unexpected finds protocol.	
Land use compatibility	
Agriculture • Submitters raised concerns about the project being on agricultural land and impacts to the agricultural productivity of the surrounding region. • The project site and surrounds are dominated by agricultural land uses, primarily sheep grazing with some cattle grazing and cropping. • Small areas within the south-eastern section of the site are identified in regional scale mapping as biophysical strategic agricultural land (BSAL). Approximately 4.5 ha of BSAL is mapped within the Development Corridor in	• Undertake consultation with relevant exploration title holders through the life-cycle of the project. • Require the rehabilitation of the project site to a standard that makes it available for agricultural production following decommissioning.

Issue	Recommended conditions
the vicinity of proposed overhead powerlines. Squadron has committed to avoiding direct impacts to all areas of BSAL within the site as part of its detailed design. • The site is mostly comprised of Class 3 (42%) (moderate capability), Class 5 (45%) (moderate-low capability), Class 6 (12.6%) (very low capability) land, and Class 7 (0.4%) very low capability) land. • The disturbance footprint comprises Class 3 (39%) (moderate capability), Class 5 (50%) (moderate-low capability), and Class 6 (11%) (very low capability) land. Squadron would seek to minimise disturbance to areas of Class 3 land as far as practicable. • The development and operation of a wind farm can co-exist with grazing activities. Upon project decommissioning, the land would be rehabilitated. As such, the project would not compromise or significantly diminish the availability of land for primary production purposes within the project site or surrounding LGAs. • While the project would temporarily reduce the available land for agricultural uses during construction, the long-term use of the land for agricultural purposes would not be compromised during the operation of the Project. • As such, the Department considers that agricultural and wind farm activities are compatible land uses and can co-exist in the locality. This has been demonstrated at several operating wind farms in NSW. **Mining and exploration** • The site is in an area with prospective gold and copper mineralisation. • Portions of the site are partially overlapping with two exploration licences (ELs), and MEG raised concerns that the project would restrict access for mineral exploration for areas covered by the ELs. • The Department acknowledges that Squadron avoided potential impacts to EL 8338 by undertaking consultation with the relevant licence holder and amending the project design prior to exhibition of the EIS. • MEG recommends that Squadron undertakes ongoing engagement and consultation with affected exploration title holders throughout the operational life-cycle of the project, which Squadron has committed to.	
Water resources	
Water Supply • The amount of water required for the construction of the wind farm is estimated to be around 80 to 120 ML. This includes water for dust suppression, concrete production, vehicle and equipment washdown, firefighting, and amenities. • Squadron proposes to obtain the water required for construction and operation from multiple of sources, including harvested runoff from sediment basins and farm dams under agreement with relevant landholders.	• Ensure the development has adequate water supplies for the project and that it obtains any necessary licences under the *Water Act 1912* or *Water Management Act 2000*. • Ensure all works are undertaken in accordance with Guidelines for Controlled Activities on Waterfront

Issue	Recommended conditions
• Squadron may also utilise other water sources licensed under the *Water Management Act 2000*, including groundwater purchased from associated or adjacent landowners, water purchased from Dubbo Regional Council, and by purchasing and transporting water to site by tanker. • Water demands from the operational phase of the project will be limited to amenities usage and are expected to be minimal. Squadron proposes to source the operational water supply from rainwater captured in water tanks and purchasing and transporting water to site by tanker. • Squadron commits to providing access along Murrawega Road to groundwater bore GW096128 in response to the request of WaterNSW. • Squadron confirmed that it is unlikely that the project would intercept an aquifer given the depth to groundwater across the majority of the site is in excess of 20 m. Despite this, it is noted that depth to groundwater on the lower slopes of the site, in particular in close proximity to waterways, has been recorded at between 0.5 and 4 m below ground level and there is some potential for interception of groundwater if excavation were to occur in these areas. • There are currently no turbines proposed to be located in these areas, however Squadron has committed to undertaking additional geotechnical investigations before site preparatory works to confirm groundwater levels at the location of each turbine. • Although unlikely, should construction of project infrastructure occur in areas with shallow groundwater, further hydrogeological assessment would be undertaken in accordance with relevant guidelines and a Water Access License with sufficient entitlement to account for the groundwater take would be obtained, unless an exemption applies. • In addition, if this were to occur, a dewatering management plan would be prepared. • The Department, NSW DCCEEW Water Group (Water Group), and WaterNSW are satisfied that the project's water use is unlikely to have any significant impact on water supply and demand in the region. **Erosion and Sedimentation** • The site includes areas with highly erodible and potentially dispersive soils. The steep gradients across parts of the site, along with the infrastructure that would cross streams (e.g. access tracks and cables) further add to the potential for erosion of soils and the subsequent water quality impacts in surface water resources. • Squadron has committed to preparing an Erosion and Sediment Control Plan prior to the commencement of construction to ensure erosion control measures (including construction works timing restrictions and enhanced	Land (NRAR, 2018) and *Policy and Guidelines for Fish Habitat Conservation and Management* (2013). • Minimise any soil erosion in accordance with the *Managing Urban Stormwater: Soils and Construction* (Landcom, 2004) manual and ensure the project is constructed and maintained to avoid causing erosion on site.

Issue	Recommended conditions
measures) would be implemented in accordance with the relevant requirements in the *Managing Urban Stormwater: Soils and Construction* (Landcom, 2004) manual and the *Managing Urban Stormwater: Soils and construction - Volume 2A* manual (Landcom, 2008) (i.e. the 'Blue Book'). • To mitigate potential erosion impacts in accordance with the 'Blue Book', all areas within the bed and bank of streams, and within 40 m of the top of bank of defined streams (i.e. waterfront land) would be required to be managed as 'Soil Loss Class 6' land. • Potential water quality impacts during the operational phase would be minimal, as the day-to-day activities during this phase would be limited to routine maintenance and monitoring. • The Department considers that any erosion and sedimentation risks associated with the project can be effectively managed by complying with the relevant requirements in the Blue Book. **Flooding** • The 10%, 1%, 0.5% and 0.2% Annual Exceedance Probability (AEP), and Probable Maximum Flood were assessed for flood depth, velocity, and hazard levels. Flood modelling for the project demonstrated that the site (including relevant access points) is of low flood risk, with minimal risk to changes in internal or external waterway flows. • Modelling of the 1% AEP demonstrates that flood depths remain generally less than 0.3 m along overland flow paths and local depressions, with depths of flow along the minor watercourses within the site typically up to a 3–4 m with some localised higher depths along the reaches. The mainstream flooding of the watercourses within the site would still be relatively confined. • Similarly, the overland flow velocities within the site would remain generally less than 0.3 m/s. Accordingly, the flood hazard within the site for the 1% AEP event is mostly characterised as H1: '*Generally safe for vehicles, people and buildings*', and only surpasses this level within the waterways and defined drainage lines, where infrastructure should be avoided.	
Bushfire safety	
• Submitters raised concerns about the impacts of the project on bush fire management. • The development site is mapped as bushfire prone land by the RFS. Squadron would be required to establish Asset Protection Zones around each wind turbine, wind monitoring masts, compound for the operation and maintenance facilities, including substations, in compliance with relevant guidelines. • Squadron has committed to compliance with the RFS's *Planning for Bushfire Protection 2019* and the preparation of an Emergency Management Plan to manage fire risks. Squadron has also committed to a number of mitigation	• Ensure that the development complies with relevant asset protection requirements in the RFS's *Planning for Bushfire Protection 2019* (or equivalent) for Asset Protection Zones.

Issue	Recommended conditions
measures and strategies, including the provision of on-site water supply for firefighting purposes, and appropriate bush fire emergency and evacuation plans. • Squadron would also undertake consultation with NPWS regarding to the bushfire management strategy for Dapper Nature Reserve. • The Department is satisfied that the bushfire risks can be suitably controlled through the implementation of standard fire management plans and procedures.	• Ensure the development is suitably equipped to response to fires on site, including the provision of a 20,000 litre water supply for firefighting purposes. • Prepare and implement an Emergency Response Plan.
Accommodation	
• The project construction workforce would increase demand for housing and accommodation in towns surrounding the project, noting the project is expected to have a peak construction workforce of 590, with an average of approximately 325 people throughout the 40-month construction period. • While the project alone is not expected to result in a significant population change across the Dubbo Regional or Mid-Western Regional LGAs, it is likely that the concurrent construction workforces from projects in the CWO REZ may result in cumulative impacts across the LGAs. • The Social Impact Assessment identifies that there would be some availability in short-term accommodation across the LGAs, along with some availability of private rentals, however, it was concluded that existing accommodation facilities would not be sufficient for the project needs. • Accordingly, Squadron prepared an Accommodation and Employment Strategy as part of its Submissions Report which aimed to identify additional options to ensure there is sufficient accommodation for the workforce associated with the project. In addition to the use of short-term accommodation and/or private rentals, Squadron has committed to utilising one, or a combination, of the following two options: - construction of a temporary worker's accommodation in the Dubbo LGA (subject to separate assessment and approval); and - adaptive reuse of the Bellhaven aged-care facility (currently being used for the Uungula Wind Farm). • Squadron has reached an in principle agreement with Dubbo Regional Council to construct a temporary workers accommodation facility on landed owned by Council approximately 5 km from Dubbo central business district. The Department has received confirmation from Council regarding this arrangement, which will be subject to a separate assessment and approval. • The Accommodation and Employment Strategy identifies that, with the implementation of either of these additional options, there would be sufficient accommodation for the project construction workforce.	• Prepare an updated Accommodation and Employment Strategy prior to commencing construction in consultation with relevant councils.

Issue	Recommended conditions
• With the commitments noted in the EIS and the implementation of an Accommodation and Employment Strategy, the Department considers that potential impacts on housing and short-term accommodation availability can be appropriately managed and would consider other State significant development projects in the area.	
Social and economic	
• While some submitters raised concerns about socio-economic impacts, other submitters were supportive of the socio-economic benefits to the local community. • The project would generate direct and indirect benefits to the local community including: - up to 590 construction jobs and 10 ongoing operational jobs; - expenditure in the local economy by workers who would reside in the area; and - the procurement of goods and services by Squadron and associated constructors. • The project's net economic stimulus is estimated at approximately $410 million over 30 years of operation. This relates primarily to operational wages, host agreement and neighbourhood agreement payments, community benefit sharing program payments, and land tax revenue to Council. • The project's construction phase is likely to generate approximately $310 million in wages, contracts and other service provision for the local area's economy over the 40-month construction period; • Squadron has committed to enter a Voluntary Planning Agreement (VPA) with Dubbo Regional Council and Warrumbungle Shire Council. The total contribution payable would be 1.5% of the CIV for the final layout of the project, proportioned based on the number of committed turbines within each council's LGA. **Property Value** • Submitters raised concerns about potential adverse impacts on property values in the area. • The Department notes that: - the project is sited within the CWO REZ an area aimed at encouraging investment in electricity infrastructure and providing additional renewable energy generation; - the project is permissible with consent under the relevant environmental planning instruments; - the project would comply with applicable amenity criteria established by the NSW Government for wind farm developments and Squadron has entered into agreements to compensate more highly impacted nearby landowners; - the Land and Environment Court has ruled on several occasions that the assessment of the impacts of projects on individual property values is not generally a relevant consideration under the EP&A Act, unless the project	• Enter into a VPA with each relevant Council prior to commencing construction.

Issue	Recommended conditions
would have significant and widespread economic impacts on the locality, which is not the case in this instance; and - in particular, the Department notes that King & Anor v Minister for Planning; Parkesbourne-Mummel Landscape Guardians Inc v Minister for Planning; Gullen Range Wind Farm Pty Limited v Minister for Planning ([2010] NSWLEC 1102) considers property values for sites adjacent to a wind farm. The judgement determined that there was no loss of property value to which the Court could lawfully have regard, as the wind farm was permissible with consent. • Accordingly, the Department considers that the social and economic benefits of the project outweigh the negative social and economic impacts. As such, the project is in the public interest.	
Aviation safety	
• Submitters raised concerns regarding the safe operation of aircraft in the vicinity of wind turbines. • The project is located 43 km north-west of Mudgee Airport and 44 km east of Dubbo Airport. • Squadron undertook an assessment of aviation impacts. The assessment concluded that the project would not have any adverse or significant impacts to air safety, subject to the implementation of mitigation measures and administrative controls. • The site is not located in controlled airspace, but is partially within Danger Area D538B associated with the Royal Australian Air Force (RAAF) Base Williamtown. • The Department of Defence (DoD) advised that this Danger Area will be removed in late 2024. As construction of the project would not commence before the end of 2024, DoD and the Department are satisfied that the project would not impact Danger Area D538B. • Initially, Squadron's Aviation Impact Assessment (AIA) concluded that obstacle night lighting to wind turbines is not required to maintain an acceptable level of safety to aircrafts. However, CASA advised that the project is considered to be a hazard to aviation safety and did not agree with recommendations of the AIA. CASA recommended that the wind farm is obstacle lit in accordance with the NASF Guidelines. • In response to CASA's concerns, Squadron included a commitment in the Submissions Report for the Project to be obstacle lit in accordance with the NASF Guidelines. • Airservices Australia confirmed that there would be no adverse impact on aviation communication, navigation and surveillance equipment from the project and would not have an impact on air traffic control operations at Dubbo and Mudgee Airport.	• Notify the relevant aviation authorities of the final location and specifications of the wind turbines and any wind monitoring masts. • Install aviation hazard lighting in accordance with CASA's requirements. • Minimise the off-site lighting impacts of the project. • Shutting down turbines and the positioning of turbine blades to minimise interference with aerial firefighting operations.

Issue	Recommended conditions
• RFS did not raise any concerns about the project, however recommended that the wind farm is obstacle lit, and for blade rotation to cease when arial firefighting is occurring in the locality. The Department has recommended a condition to this effect. • The Department considers that any hazards from the turbines would be appropriately managed as long as the development is carried out in accordance with the NASF Guidelines. • With these conditions, the Department is satisfied that the project is unlikely to result in any significant aviation hazards.	
Radiocommunication	
• Electromagnetic signals transmitted for telecommunication systems (such as radio, televisions, mobile phones and mobile/fixed radio transmitters) function most efficiently where a clear line of sight exists between the transmitting and receiving locations. Wind farms and other infrastructure have the potential to cause interference with this line of sight. • Squadron undertook a Telecommunications Impact Assessment. The assessment concluded that there would be no material impact on existing telecommunication services except for two turbines (T47 and T58), which would require micro-siting to avoid to potential intrusion to the NSW Telecommunications Authority (the Telco Authority) microwave link in the area. • Accordingly, Squadron relocated turbines T47 and T58 through the Submissions Report to avoid any potential interference and the Telco Authority confirmed it had no concern with the revised locations. • The Department has recommended a condition to ensure these turbines would not be micro-sited closer to the microwave links. • Squadron has committed to undertake consultation with link operators, the Bureau of Meteorology and mobile service providers to confirm any required clearances and potential impacts to their services.	• If the project disrupts any radio communications services, the Applicant must make good any disruption to these services as soon as possible, but no later than one month following the disruption of the service, unless the relevant service provider or user or Planning Secretary agrees otherwise. • Turbines T47 and T58 must not be micro-sited closer to the Telco Authority's microwave links.
Electric and magnetic fields (EMF)	
• EMF would be generated by the electrical components of the project, including wind turbines, energy storage facility, power conversion units (including transformers), transmission lines and substation. This is consistent with all other electricity generating infrastructure. It is noted that EMF also results from natural sources such as the Earth's magnetic field and lightning.	• Ensure that the design, construction and operation of the development is managed to comply with the applicable EMF limits in the *International Commission on Nonlonizing Radiation Protection (ICNIRP)*

Issue	Recommended conditions
• The main sources from the project would be the substation, electrical equipment within the turbine structures, interconnecting underground and/or overhead cables and transmission lines. Maximum EMF values would occur immediately below overhead power lines, and at ground level immediately above underground cables. • The EIS includes an Electromagnetic Field Assessment Report (EMFAR), which includes an assessment of the worst-case EMF scenario, that is the highest voltage scenario in which a person would be directly underneath the 330 kV overhead transmission line. The assessment found that EMF would be less than the public exposure limit as long as the overhead transmission line is more than 11 m above ground level. In light of this, Squadron has committed to installing the 330 kV overhead transmission line more than 11 m above ground to avoid elevated electrical field exposure to the general public. • The EMFAR found that EMF generated by all other electrical components of the project would be less than the public exposure limits in accordance with the International Commission on Non-Iodizing Radiation Protection (guidelines for electric, magnetic and electromagnetic fields. • Accordingly, the Department considers the project would not have any significant EMF related impacts.	*Guidelines for limiting exposure to time-varying electric and magnetic fields (1Hz – 100kHz)* (ICNIRP, 2010).
Subdivision	
• Squadron requires subdivision of potentially three new lots to enable ownership of the substations to be transferred to the network operator. • The subdivision would create new lots that would not meet the minimum lot size for land use zoned RU1- Primary Production and are therefore prohibited under a strict reading of the Warrumbungle LEP and Dubbo Regional LEP. • Notwithstanding, development consent for the project as a whole can be granted despite the subdivision of the application being prohibited by the LEP (under section 4.38(3) of the EP&A Act). • The Department considers that the subdivision be approved as part of the project as the subdivisions: - are necessary for the ongoing operation of the wind far as they are required for the transfer of the substation to the network operator; - would not result in the addition of any dwelling entitlements on the subdivided land; - are consistent with the key objectives of the RU1 zone as it would encourage diversity in primary industry enterprises and minimise conflict between land uses; - are necessary for the operation of the wind farm as they are required to register the leases with the Office of the Registrar-General; and	• Subdivide the proposed lots in accordance with requirements of the *EP&A Act*, *EP&A Regulation*, *Conveyancing Act 1919* (NSW) and the NSW Land Registration Services or its successor).

Issue	Recommended conditions
- would be administrative in nature and does not result in any additional environmental impacts. • The Department is satisfied that the proposed subdivisions are in the public interest, as they would allow the wind farm to be development and consequently provide net benefits to the National Electricity Market that can be realised in a timely manner.	
Waste	
• Squadron has committed to the preparation of a Waste Management Plan that will detail measures to reduce waste generated by the project. • The Department has imposed a condition requiring Squadron to reduce waste, recycle where possible, and to dispose of unrecyclable waste at a licenced facility. • Noting the above, the Department considers that the waste generated by the project could be appropriately managed.	• Minimise the waste generated by the project and classify waste in accordance with the EPA's Waste Classification Guidelines. • Remove all waste from the site as soon as practicable, and ensure it is reused, recycled or sent to an appropriately licensed waste facility for disposal.
Air Quality	
• Squadron has committed to a number of mitigation measures to manage any potential air quality impacts, including dust suppression and controls and limiting construction during windy weather conditions. • Noting the above, and that any potential air quality impacts would be limited in duration, the Department considers that the project would not significantly impact the air quality in the locality.	• Ensure off-site dust, fume and blast emissions are minimised. • Ensure surface disturbance of the site is minimised.
Decommissioning and rehabilitation	
• The Department has developed standard conditions for wind farms to cover this stage of the project life cycle, including clear decommissioning triggers and rehabilitation objectives. • Additionally, the Department has provided guidance on how host landowner agreements should consider refurbishment, decommissioning and rehabilitation in the NSW Wind Energy Framework's Negotiated Agreement Advice Sheet. • With the implementation of these measures, the Department considers that project infrastructure would be suitably decommissioned, either at the end of the project life or if the project is not operating for more than a year, and the site appropriately rehabilitated to a standard that would allow the ongoing productive use of the land.	• Decommission wind turbines (and associated infrastructure) within 18 months of the cessation of operations. • Progressively rehabilitate the site, and minimise the total disturbance area exposed at any time. • Comply with a number of rehabilitation objectives, including removing redundant above-ground infrastructure, restoring rural land capability and vegetation, ensuring public safety and ensuring the site is maintained in a safe, stable and non-polluting condition.

Issue	Recommended conditions
Blade throw	
• A Blade Throw Risk Assessment and Preliminary Hazard Assessment was included in the EIS. • The Department's raised concerns about the blade throw risk to two residences, GH005 and TR001, which are within 285 metres of the nearest turbine. The Department's considered that the proximity of these residences to turbines may expose individuals to blade throw risk that is above the risk criterion for residential uses (i.e. 1 fatality per million per year or 1 x 10-6 p.a). • In response to these concerns, Squadron confirmed that residences GH005 and TR001 would either remain vacant, or be demolished, for the life of the project. • The Department considers that blade throw risk is acceptable, subject to Squadron's commitment to ensure residences GH005 and TR001 remain vacant for the life of the project.	• No specific conditions required
Cumulative impacts	
• Submitters raised concerns regarding cumulative impacts of the project particularly as it is within the CWO REZ. • The proposed Sandy Creek, Cobbora and Dapper Solar Farms and the approved CWO REZ Transmission project are adjacent to the project site and cumulative impacts are likely if there is an overlap of peak construction periods. Squadron propose a temporary workers accommodation camp to facilitate the project and would therefore not compete with surrounding projects for accommodation. The temporary workers accommodation would be the subject of a separate approval process. • Cumulative traffic impacts during the construction phase are a key issue with development within the CWO REZ. The Transport Assessment found that there is ample spare capacity on the local road network for the proposed project, however, some upgrades to the local network are required. Squadron has committed to undertake these works in consultation with the relevant roads authorities. These upgrades will improve traffic conditions on the broader road network and provide sufficient capacity for cumulative traffic. The Transport Assessment also found that the Golden Highway has ample spare capacity to cater for estimated future traffic volumes.	• No specific conditions required

7 Evaluation

205. The Department has assessed the development application, EIS, Submissions Report and additional information and has carefully considered:

- submissions received from members of the community;
- comments provided by Council; and
- advice received from State and local Government agencies.

206. The Department has also considered the objectives of the EP&A Act, including the ESD principles, and relevant considerations under section 4.15(1) of the EP&A Act. The Department has given consideration to Squadron's evaluation of the project's merits against applicable statutory and strategic planning requirements.

207. The project is located in the Central West region of NSW within the CWO REZ, an area identified as strategically advantageous with strong renewable energy resource potential, proximity to the existing electricity network, and consideration of potential interactions with existing land uses, including agricultural lands and biodiversity conservation.

208. The project is permissible with consent in accordance with the Transport and Infrastructure SEPP and is located on land which has been subject to extensive historical land clearing for agricultural purposes.

209. The project has been designed to largely avoid key constraints, including better quality native vegetation (including Box Gum Woodland CEEC), visual amenity, traffic impacts and impacts to Aboriginal cultural heritage sites. Any residual impacts would be relatively minor and can be managed through the recommended conditions of consent.

210. The project would not significantly impact threatened species and/or ecological communities of the locality. The Department considers that any residual biodiversity impacts can be managed and/or mitigated by imposing appropriate conditions and retiring the required biodiversity offset credits.

211. The project would meet the visual performance objectives of the Visual Bulletin and there would be no significant visual impacts on surrounding residences due to distance and / or intervening topography and existing and proposed vegetation providing screening from non-associated residences and the public road network.

212. In relation to traffic impacts, the Department considers the proposed transport routes could be appropriately upgraded to facilitate the transportation of large turbine components to the site.

213. To address the residual impacts of the project, the Department has recommended a range of detailed conditions, developed in conjunction with agencies and Council, to ensure these impacts are effectively minimised, managed and/or offset. Squadron has reviewed the conditions and does not object to them.

214. The Department considered the submissions made through the exhibition of the project and the issues raised by the community and agencies during consultation. These matters have been addressed through changes to the project and the recommended conditions of consent.

215. Importantly, the project would assist in transitioning the electricity sector from coal and gas-fired power stations to low emissions sources and is consistent with the goals of the NSW's *Climate Change Policy Framework* and the *Net Zero Plan Stage 1: 2020 – 2030*. It would have a generating capacity of 700 MW of clean electricity, which is enough to power approximately 370,000 homes.

216. The inclusion of a BESS would enable the project to store energy for dispatch to the grid when the wind isn't blowing and/or during periods of peak demand, increasing grid stability and energy security.

217. The project would also provide flow-on benefits to the local community, including up to 590 construction jobs, 10 operational jobs and 1.5% of the CIV for the final layout of the project in contributions to local councils through voluntary planning agreements for community enhancement projects. There would be broader benefits to the State through an injection of $2 billion in capital investment into the NSW economy.

218. Overall, the Department considers that the project achieves an appropriate balance between maximising the efficiency of the wind resource development and minimising the potential impacts on surrounding land uses and the environment.

219. On balance, the Department considers that the project is in the public interest and is approvable, subject to the recommended conditions of consent (see **Appendix E**).

220. This assessment report is hereby presented to the Independent Planning Commission for determination.

Prepared by:

Natasha Homsey, Team Leader Environmental Assessments

Ellena Tsanidis, Environmental Assessment Officer

Jess Watson, Environmental Assessment Officer

Recommended by:

[redacted] 30/07/2024

Nicole Brewer
Director
Energy Assessments

[redacted] 30/07/2024

Chris Ritchie
A/Executive Director
Energy, Resources and Industry

Glossary

Abbreviation	Definition
AG DCCEEW	Australian Government Department of Climate Change, Energy, the Environment and Water
AHD	Australian height datum
BCS	Biodiversity Conservation and Science Group within the NSW Department of Climate Change, Energy, the Environment and Water
Commission	Independent Planning Commission
CIV	Capital investment value
Crown Lands	Crown Lands division of the Department of Planning, Housing and Infrastructure
CSSI	Critical State significant infrastructure
Department	Department of Planning, Housing and Infrastructure
DPI	Department of Primary Industries within the Department of Regional NSW
EIS	Environmental impact statement
EPA	NSW Environment Protection Authority
EP&A Act	Environmental Planning and Assessment Act 1979
EP&A Regulation	Environmental Planning and Assessment Regulation 2021
EPBC Act	Environment Protection and Biodiversity Conservation Act 1999
EPI	Environmental planning instrument
EPL	Environment protection licence
ESD	Ecologically sustainable development
FRNSW	Fire and Rescue NSW

Abbreviation	Definition
Heritage	Heritage NSW, within the NSW Department of Climate Change, Energy, the Environment and Water
LEP	Local environmental plan
MEG	Mining, Exploration and Geoscience within the Department of Regional NSW
Minister	Minister for Planning and Public Spaces
NPWS	National Parks & Wildlife Service within the NSW Department of Climate Change, Energy, the Environment and Water
Planning Systems SEPP	State Environmental Planning Policy (Planning Systems) 2021
SEARs	Planning Secretary's Environmental Assessment Requirements
Secretary	Secretary of the Department of Planning, Housing and Infrastructure
SEPP	State environmental planning policy
SSD	State significant development
SSI	State significant infrastructure
TfNSW	Transport for NSW

Appendices

Appendix A - Environmental Impact Statement

Appendix B – Submissions and government agency advice

Appendix C – Submissions Report

Appendix D – Additional Information

Appendix E – Recommended Development Consent

Appendices A to E available at:

https://www.planningportal.nsw.gov.au/major_projects/projects/spicers_creek_wind_farm

Appendix F – Statutory considerations

Objects of the EP&A Act

In line with the requirements of section 4.15 of the EP&A Act, the Department's assessment of the project has given detailed consideration to a number of statutory requirements. These include:

- The objects found in section 1.3 of the EP&A Act; and
- The matters listed under section 4.14 (1) of the EP&A Act, including applicable environmental planning instruments and regulations.
- The Department has considered all these matters in its assessment of the project and has provided a summary of this assessment in **Table 12** below.

Table 12 | Objects of the EP&A Act and how they have been considered

Summary
Objects of the EP&A Act
The objects of most relevance to the Consent Authority's decision on whether to approve the project are found in sections 1.3(a), (b), (c), (e) and (f) of the EP&A Act. The Department considers the project encourages the proper development of natural resources (Object 1.3(a) and the promotion of orderly and economic use of land (Object 1.3(c)), particularly as the project: • is a permissible land use on the subject land; • is located in a logical location for efficient wind farm development; • is able to be managed such that the impacts of the project could be adequately minimised, managed or at least compensated for, to an acceptable standard; • would contribute to a more diverse local industry, thereby supporting the local economy and community; • would not fragment or alienate resource lands, in the LGA; and

Summary

- is consistent with the goals of NSW's *Climate Change Policy Framework* and *Net Zero Plan Stage 1: 2020 – 2030* and *Implementation update* (2022) would assist in meeting Australia's renewable energy targets whilst reducing greenhouse gas emissions.

The Department has considered the encouragement of ESD (Object 1.3(b)) in its assessment of the project. This assessment integrates all significant socioeconomic and environmental considerations and seeks to avoid any potential serious or irreversible environmental damage, based on an assessment of risk-weighted consequences.

In addition, the Department considers that appropriately designed SSD wind development, in itself, is consistent with many of the principles of ESD. Squadron has also considered the project against the principles of ESD. Following its consideration, the Department considers that the project can be carried out in a manner that is consistent with the principles of ESD.

Consideration of environmental protection (Object 1.3(e)) is provided in **section 6** of this report. The Department considers that the project is able to be undertaken in a manner that would at least maintain the biodiversity values of the locality over the medium to long term and would not significantly impact threatened species and ecological communities of the locality. The Department is also satisfied that any residual biodiversity impacts can be managed and/or mitigated by imposing appropriate conditions and retiring the required biodiversity offset credits.

Consideration of the sustainable management of built and cultural heritage (Object 1.3(f)) is provided in **section 6** of this report. Following its consideration, the Department considers the project would not significantly impact the built or cultural heritage of the locality, and any residual impacts can be managed and/or mitigated by imposing appropriate conditions.

State significant development

Under section 4.36 of the EP&A Act, the project is considered State significant development.
Under section 4.5(a) of the EP&A Act and Clause 1(b) of section 2.7 of the Planning Systems SEPP, the Independent Planning Commission is the consent authority for the development as the project received more than 50 unique public submissions by way of objection, Warrumbungle Shire Council objects to the project and Squadron has made a reportable political donations disclosure.

Environmental Planning Instruments (EPIs)

The Dubbo Regional and Warrumbungle LEPs apply and are discussed in **section 4.2** of this report, particularly regarding permissibility and land use zoning. Electricity generating works are permitted with consent within the relevant land use zoning.
The project is not categorised as potentially hazardous or potentially offensive development under the *State Environmental Planning Policy (Resilience and Hazards) 2021* (Hazards SEPP). The site is not listed as a contaminated site in the NSW EPA Contaminated Land Records or the list of NSW contaminated sites. Given the site has historically been used for predominantly agricultural uses, the Department considers the site would be suitable for the proposed development.

The Department has also reviewed the proposal against the Transport and Infrastructure SEPP, and considers the project is permissible under the SEPP. In accordance with the Transport and Infrastructure SEPP, the Department has given written notice of the project to EnergyCo as the electricity supply authorities and TfNSW.

The Department has considered the provisions of *State Environmental Planning Policy (Primary Production) 2021*. Of relevance to the project, the SEPP aims to facilitate the orderly economic use and development of lands from primary

production to reduce land use conflict and sterilisation of rural land and to identify State significant agricultural land. The Department has considered all of these matters in **section 6.6** of this report and concluded that the project is generally consistent with the broader and specific land use planning objectives for the site and the region under the relevant planning instruments and strategies.

Warrumbungle Shire LGA is listed in Schedule 1 of the State Environmental Planning Policy (Koala Habitat Protection) 2020. Squadron's BDAR found no evidence of Koala, and the Department has considered biodiversity in **section 6.3** of this report.

Appendix G – Consideration of Community Views

The Department exhibited the EIS for the project from 28 July 2023 until 24 August 2023 (28 days) and received 68 public submissions, of which 67 were unique (57 objecting to the project, 7 in support and three comments). The Department also consulted with government agencies and relevant councils throughout the assessment process.

The key issues raised by the community (including in public submissions) and considered in the Department's Assessment Report include socio-economic, biodiversity, agriculture and visual impacts. A summary of how the Department considered these matters is presented in **Table G-1** below. Other issues are addressed in detail throughout this Assessment Report.

Table G-1 | Consideration of community views

Issue	Consideration
Socio-economic • Community division • Community health and wellbeing • Property devaluation • Reduced housing affordability	Impact assessment • Concerns about socio-economic impacts were raised in 23 public submissions, particularly regarding community division, health and property devaluation. • The project would generate up to 590 construction jobs of which approximately 10% will be sourced from the surrounding LGAs and 10 operational jobs. • The project's net economic stimulus is estimated at approximately $410 million over 30 years of operation, relating to operational wages, host agreement and neighbourhood agreement payments, and community benefit sharing program payments and land tax revenue to Council; • The project's construction phase is likely to generate approximately $310 million in wages, contracts and other service provision for the local area's economy over the 40-month construction period. • Squadron has committed to enter a Voluntary Planning Agreement (VPA) with Dubbo Regional Council and Warrumbungle Shire Council. The total contribution payable is 1.5% of the CIV of the final layout of the project based on the number of committed turbines within each Council's LGA; • The VPA will support the provision and maintenance of local infrastructure and community groups; and • The project will power approximately 370,000 homes per year, equivalent to approximately 12% of homes in NSW. • The Land and Environment Court has ruled on several occasions that the assessment of the impacts of projects on individual property values is not generally a relevant consideration under the EP&A Act, unless the project would have significant and widespread economic impacts on the locality, which is not the case in this instance; • In addition, the Department notes that King & Anor v Minister for Planning; Parkesbourne-Mummel Landscape Guardians Inc v Minister for Planning; Gullen Range Wind Farm Pty Limited v Minister for Planning ([2010] NSWLEC 1102) considers property values for sites adjacent to a wind farm. The judgement

Issue	Consideration
	determined that there was no loss of property value to which the Court could lawfully have regard, as the wind farm was permissible with consent. • the project would not negatively impact on housing affordability or availability, as approximately 56% of the workforce would reside in the temporary workforce accommodation facility provided by Squadron in consultation with Dubbo Regional Council under a separate approval pathway. • Accordingly, the Department considers the project would not result in any significant or widespread reduction in land values in the areas surrounding the wind farm. Recommended conditions • Prepare an Accommodation and Employment Strategy for the project in consultation with relevant councils, with consideration to prioritising the employment of local workers. • Enter into a VPA with each relevant Council prior to commencing construction.
Biodiversity • Bird and Bat Strike • Vegetation clearing	Impact Assessment • Concerns about biodiversity were raised in 20 public submissions, including impacts from direct clearing of vegetation, clearing of Threatened Ecological Communities (TECs), blade strike impacts to avifauna species. • The development footprint includes 275.3 ha of native vegetation, of native vegetation, 128.1 ha (46% or approximately 9% of the development footprint) is woodland (in moderate to good condition), with 44.4 ha being modified woodland, and the remaining 102.8 ha is derived native grassland. • The project has been designed and refined to avoid and minimise biodiversity impacts to areas of higher conservation value. The Department considers that the vegetation clearing impacts of the project would not be significant, subject to a range of mitigation and adaptive management measures and by offsetting the residual biodiversity impacts. • BCS raised residual concerns regarding potential bird and bat strike, particularly in relation to survey effort and turbine risk-rating system, and in response the Applicant provided additional justification and information in the Addendum BDAR. • The final assessment concluded that no turbines pose a very high risk, two turbines pose a high risk, 111 turbines pose a medium risk and four turbines pose a low risk of avifauna strike. • In consultation with BCS, the Department has recommended conditions requiring a comprehensive regime of adaptive management to address the risk of bird and bat strike. • A Bird and Bat Adaptive Management Plan (BBAMP) would be developed in consultation with BCS. Given this, the Department is satisfied that the project's impacts to avifauna can be appropriately managed. Recommended conditions • minimise the clearing of native vegetation and key fauna habitat, including hollow bearing trees, within the development footprint and protect native vegetation and

Issue	Consideration
	key fauna habitat outside the approved disturbance area in accordance with limits in the recommended conditions; • prepare and implement the Biodiversity Management Plan which includes a description of the measures to: - minimise the potential indirect impacts on threatened flora and fauna species, migratory species and 'at risk' species; - secure land comprising 53.8 ha of Box Gum Woodland DNG and implement measures to enhance and protect, in perpetuity, this vegetation to condition state commensurate with Box Gum Woodland; - rehabilitate and revegetate temporary disturbance areas and maximise the salvage of resources within the approved disturbance area for beneficial reuse (such as fauna habitat enhancement) during the rehabilitation and revegetation of the site; - control weeds and feral pests; - provide a detailed program to monitor and report on the effectiveness of these measures. • prepare and implement a Bird and Bat Adaptive Management Plan in consultation with BCD and the AG DCCEEW; and • retire the applicable biodiversity offset credits in accordance with the NSW Offsets Policy prior to carrying out any development that could directly or indirectly impact the biodiversity values requiring offset.
Visual impacts • impacts on the surrounding landscape and dwellings	Impact Assessment • Concerns about visual impacts were raised in 17 public submissions, particularly regarding the size and scale of the wind farm in the landscape and views from residences and public areas. • The Department considers that visual performance objectives in the Visual Bulletin is achievable at all receivers. While several receivers located within 5 km of a turbine, views are generally at least partially screened by existing mature vegetation and topography. The Department considers that residual impacts could be sufficiently mitigated through visual impact mitigation measures (such as landscaping and visual screening). • The Department is satisfied that the project would not fundamentally change the broader landscape characteristics of the area or result in any significant visual impacts on the surrounding non-associated residences. • The project would not exceed 30 hours of shadow flicker per year at any non-associated receiver. Squadron has committed to using subtle colours and a low reflectivity surface treatment on turbines to minimise blade glint. Recommended conditions • offer landscaping and/or vegetation screening to all non-associated dwellings within 5 km of any approved turbine, if requested by the landowner; • implement all reasonable and feasible measures to minimise the visual impacts of the development;

Issue	Consideration
	• paint turbines off-white/grey and finishing blades with a treatment that minimises potential for any glare or reflection; • implement all reasonable and feasible measures to minimise the off-site lighting impacts of the development; and • ensure that shadow flicker from turbines does not exceed 30 hours per annum at any non-associated dwelling.

Appendix H - Assessment of Matters of National Environmental Significance

In accordance with the Bilateral Agreement between the Australian Government and NSW Government, the Department provides the following additional information required by the Commonwealth Minister, in deciding whether to approve a proposed action (i.e. the project) under the EPBC Act.

The Department's assessment has been prepared based on the assessment contained in the Spicers Creek Wind Farm Environmental Impact Statement (EIS), Response to Submissions Report, Amendment Reports, Biodiversity Development Assessment Report (BDAR), EPBC Act Matters of National Environmental Significance Assessment and additional information provided during the assessment process, public submissions, and advice provided by the BCS, other NSW government agencies and the Commonwealth Department of Climate Change, Energy, Environment and Water (DCCEEW).

This appendix is supplementary to, and should be read in conjunction with, the assessment included in Section 6.3 of this assessment report, and includes consideration of impacts to listed threatened species and communities and listed migratory species, and mitigation and offsetting measures for Matters of National Environmental Significance (MNES).

Controlled Action Decision – EPBC 2022/09387

On 4 January 2023, the Spicers Creek Wind Farm was determined to be a Controlled Action by the Australian Government (AG) DCCEEW for the controlling provision of listed threatened species and communities and listed migratory species. The Commonwealth Referral Decision (EPBC 2022/09387) (Referral Decision) was based on likely significant impacts to:

- White Box-Yellow Box-Blakley's Red Gum Grassy Woodland and Derived Native Grassland (Box Gum Woodland and DNG) – Critically Endangered;
- koala (*Phascolarctos cinereus*) (Combined Population of QLD, NSW and the ACT) – Vulnerable;
- regent honeyeater (*Anthochaera phrygia*) – Critically Endangered;
- white-throated needletail (*Hirundapus caudacutus*) – Vulnerable; and
- superb parrot (*Polytelis swainsoni*) – Vulnerable.

Additionally, the AG DCCEEW identified there was some risk that there may be significant impacts on the following matters:

- Grey Box (*Eucalyptus macrocarpa*) Grassy Woodlands and Derived Native Grasslands of South-eastern Australia – Endangered;
- large-eared pied bat (*Chalinolobus dwyeri*) – Vulnerable;
- Corben's long-eared bat (*Nyctophilus corbeni*) – Vulnerable;
- grey-headed flying-fox (*Pteropus poliocephalus*) – Vulnerable.
- painted honeyeater (*Grantiella picta*) – Vulnerable;
- south-eastern glossy black-cockatoo (*Calyptorhynchus lathami lathami*) – Vulnerable;
- spot-tailed quoll (*Dasyurus maculatus maculatus*) – Endangered; and
- pink tailed worm-lizard (*Aprasia parapulchella*) – Vulnerable.

In relation to migratory species, the AG DCCEEW Referral Decision (EPBC 2022/09387) (Referral Decision) was based on likely significant impacts to:

- white-throated needletail (*Hirundapus caudacutus*);
- fork-tailed swift (*Apus pacificus*);
- Latham's snipe (*Gallinago hardwickii*); and
- rufous fantail (*Rhipidura rufifrons*).

All entities identified above as requiring an assessment were considered in Squadron's EIS (in particular the EPBC Act Matters of National Environmental Significance Report) as outlined in the following sections.

Impacts on EPBC Act Listed Threatened Species and Communities

Section 6.3 of this report describes the biodiversity assessment undertaken for the project and the resulting BDAR.

All entities that were identified as requiring an assessment of significance were assessed. **Table H-1** provides a summary of the likelihood of occurrence for each of the species identified above by the Commonwealth DCCEEW as requiring consideration.

Table H-1 | Likelihood of occurrence of MNES identified in AG DCCEEW SEARs

Entity	Conservation Status	Likelihood of Occurrence	Comments
Threatened Ecological Communities			
Box Gum Woodland and DNG	CE	Present	Community is associated with areas of PCT 266 and PCT 281 which meet condition threshold requirements.
Grey Box (*Eucalyptus macrocarpa*) Grassy Woodlands and Derived Native Grasslands of South-eastern Australia	E	Present	Community is associated with areas of PCT 81 and PCT 267 which meet condition threshold requirements.
Threatened Fauna Species			
regent honeyeater (*Anthochaera phrygia*)	CE	Assumed present	No mapped important habitat occurs within the site. Impacts to species habitat would be offset via ecosystem credits as outlined in Section 6.3.4 of the main report. The species is associated with PCTs 272, 281, 81 and 266.
swift parrot (*Lathamus discolor*)	CE	Assumed present	No mapped important habitat occurs within the site. Impacts to species habitat would be offset via ecosystem credits as outlined in Section 6.3.4 of the main report. The species is associated with PCTs 272, 281, 81 and 266.

Entity	Conservation Status	Likelihood of Occurrence	Comments
white-throated needletail (*Hirundapus caudacutus*)	V	Recorded	Impacts to species habitat would be offset via ecosystem credits as outlined in Section 6.3.4 of the main report. The species is associated with PCTs 272, 281, 81, 266 and 467.
superb parrot (*Polytelis swainsoni*)	V	Recorded	Impacts to species habitat would be offset via ecosystem credits as outlined in Section 6.3.4 of the main report. The species is associated with PCTs 272, 281, 81 and 266.
painted honeyeater (*Grantiella picta*)	V	Assumed present	Impacts to species habitat would be offset via ecosystem credits as outlined in Section 6.3.4 of the main report. The species is associated with PCTs 272, 281, 81 and 266.
large-eared pied bat (*Chalinolobus dwyeri*)	V	Tentatively recorded	Although species may utilise some habitat within the action area, there is no 'potential habitat' (as defined under BAM Guide for '*Species credit threatened bats and their habitats*') and therefore no offset is required.
south-eastern glossy black-cockatoo (*Calyptorhynchus lathami lathami*)	V	Recorded	Assessed as a species credit species as outlined in Section 6.3.4 of the main report.
Corben's long-eared bat (*Nyctophilus corbeni*)	V	Recorded	Impacts to species habitat would be offset via ecosystem credits as outlined in Section 6.3.4 of the main report. The species is associated with PCTs 272, 81 and 266.
pink tailed legless lizard (*Aprasia parapulchella*)	V	Assumed present	Assessed as a species credit species as outlined in Section 6.3.4 of the main report. Squadron has assumed the presence of this species, and has committed to undertake additional surveys in late 2024 to confirm presence/absence.
koala (*Phascolarctos cinereus*) (Combined Population of QLD, NSW and the ACT)	V	Unlikely	Not recorded during targeted surveys conducted in accordance with relevant guidelines.
spotted-tailed quoll (*Dasyurus maculatus* (South-east mainland population))	E	Assumed present	Impacts to species habitat would be offset via ecosystem credits as outlined in Section 6.3.4 of the main report. The species is associated with PCTs 272, 281, 81 and 266.

Entity	Conservation Status	Likelihood of Occurrence	Comments
grey-headed flying-fox (*Pteropus poliocephalus*)	V	Assumed present	Impacts to species habitat would be offset via ecosystem credits as outlined in Section 6.3.4 of the main report. The species is associated with PCTs 272, 281, 81 and 266.
Migratory Species			
white-throated needletail (*Hirundapus caudacutus*)	M	Recorded	Impacts to species habitat would be offset via ecosystem credits as outlined in Section 6.3.4 of the main report. The species is associated with PCTs 272, 281, 81, 266 and 467.
fork-tailed swift (*Apus pacificus*)	M	Possible	MNES Assessment concluded project is unlikely to significantly impact this species.
Latham's snipe (*Gallinago hardwickii*)	M	Possible	MNES Assessment concluded project is unlikely to significantly impact this species.
rufous fantail (*Rhipidura rufifrons*)	M	Possible	MNES Assessment concluded project is unlikely to significantly impact this species.

Impacts on threatened ecological communities

As described in **section 6.3.1** of this report, Squadron has generally focused on avoidance of impacts through site selection and avoidance of higher quality native vegetation and habitat during the preliminary design process for the action. This work has focussed largely on avoiding impacts to areas of Box Gum Woodland CEEC.

Notwithstanding, the action would result in the clearance of approximately 85 ha of TEC, comprised of:

- 53.8 ha of Box Gum Woodland – consisting of 31.3 ha of woodland in moderate – good condition, 9.9 ha of modified woodland (planted or thinned canopy) and 12.6 ha of derived native woodland (DNG); and
- 31.2 ha of Grey Box (*Eucalyptus macrocarpa*) Grassy Woodlands and Derived Native Grasslands of South-eastern Australia. This consists of 8.9 ha of woodland in moderate – good condition, 6.5 ha of thinned canopy condition woodland and 15.8 ha of DNG.

As a result, the assessments of significance contained within the MNES Assessment concluded that the action may have a significant impact on these communities.

Squadron would offset the residual biodiversity impacts of the action in accordance with the requirements of NSW Biodiversity Offset Scheme. The Department considers that impacts to this community would be appropriately offset via the ecosystem credit requirements detailed in **section 6.3** of this report.

Impacts on threatened flora species

No threatened flora species listed under the EPBC Act were recorded or considered likely to occur within the action area.

Impacts on threatened fauna species

Assessments of significance were undertaken for threatened fauna species that were recorded during field surveys or were identified as having a moderate or higher potential to occur within the action area.

The assessments of significance for these species determined that the project is unlikely to have a significant impact on any threatened fauna species with the exception of the superb parrot (40.7 ha of potential habitat impacted), glossy black cockatoo (15.2 ha of potential habitat impacted) and white-throated needletail (130.2 ha of potential habitat impacted).

The Department considers that impacts on these species would be appropriately offset via the species and ecosystem credit requirements detailed in **section 6.3** of this report. The Department has recommended conditions and additional measures to avoid or minimise impacts on threatened fauna species as detailed in **section 6.3** of this report.

Impacts on migratory species

Other than the white-throated needletail (assessed above), no EPBC Act listed migratory species were recorded during field surveys.

Squadron's assessments of significance concluded that while some migratory birds may use the action area, the site does not support breeding habitat for these species and therefore, the action would not have a significant impact on these species. The Department agrees with the outcome of Squadron's assessment.

Conservation Advice

In its MNES assessment, Squadron has appropriately referred to the Conservation Advice for Box Gum Woodland and Grey Box Grassy Woodland in relation to the relevant recovery and threat abatement actions for these communities.

Conservation Advice for regent honeyeater, pink-tailed legless lizard, glossy black cockatoo, spotted-tailed quoll, painted honeyeater, large-eared pied bat, Corben's long-eared bat, koala, white-throated needletail and grey-headed flying-fox are also appropriately referred to throughout the MNES assessment to inform habitat requirements for each species.

The Department notes the key threats to species and communities include landscape fragmentation, introduction of weeds, competition for land, habitat degradation (particularly by rabbits, foxes, and feral pigs), climate change, disease transmission (particularly by feral pigs), biological effects associated with invasive species and predations (particularly by feral cats and foxes).

The Department's recommended conditions require the proponent to prepare and implement a Biodiversity Management Plan detailing how these risks would be minimised and managed, including measures to:

- avoid the disturbance of native vegetation or fauna habitat located outside the development footprint;
- implement clearing and operational management protocols;
- minimising clearing and avoiding unnecessary disturbance of vegetation that is associated with the construction and operation of the development;
- avoid and minimise impacts on potential SAII entities and provide minimisation measures to mitigate harm to Box Gum Woodland;
- minimising the impacts to fauna on site and implementing fauna management protocols;
- measures to rehabilitate and restore temporary disturbance areas and maximise the salvage of resources within the approved disturbance area for beneficial reuse (such as fauna habitat enhancement) during the rehabilitation and restoration of the project area;

- prepare and implement an incidental threatened species finds protocol to avoid and/or minimise and/or offset options to be implemented if additional threatened species are discovered on the site; and
- control weeds and pests.

The proponent would be required to prepare the Biodiversity Management Plan in consultation with BCS, and ensure the plan is prepared by a suitably qualified and experienced biodiversity expert.

In addition, the proponent is required to ensure impacts on species and communities are avoided and minimised, where practicable during detailed design, and offset the residual biodiversity impacts of the project in accordance with the NSW Biodiversity Offset Scheme.

Recovery Plans

Recovery plans for the relevant species and communities are referenced in throughout the MNES assessment. Recovery Plans have generally been referenced to inform the identification of areas of important habitat for the above species.

Threat Abatement Plans

The relevant Threat Abatement Plans that apply to the action include:

- *Threat abatement plan for the biological effects, including lethal toxic ingestion, caused by cane toads* (Australian Government Department of Sustainability, Environment, Water, Population and Communities, 2011);
- Threat abatement plan for disease in natural ecosystems caused by *Phytophthora cinnamomic* (Australian Government Department of the Environment and Energy, 2018);
- Threat abatement plan for predation, habitat degradation, competition and disease transmission by feral pigs (Sus scrofa) (Australian Government Department of the Environment and Energy, 2017);
- *Threat abatement plan for predation by feral cats* (Australian Government Department of the Environment, 2015);
- *Threat abatement plan for predation by the European red fo*x (Australian Government Department of the Environment, Water, Heritage and the Arts, 2008); and
- *Threat abatement plan for competition and land degradation by rabbits* (Australian Government Department of the Environment and Energy, 2016).

The Department has included measures for the control of feral animals and pathogens under the recommended Biodiversity Management Plan for the project. With these measures in place, the Department considers that the action can be carried out in a manner which is compatible with the relevant Threat Abatement Plans.

Subject to the recommended conditions, the Department considers that the action can be carried out in a manner that is consistent with the relevant conservation advice, recovery plans and threat abatement plans.

Review of EPBC listed threatened species and communities

Table H-2 provides a detailed review of whether the assessment documentation (i.e. the EIS, Submissions Report and BDAR) includes all relevant required information.

Table H-2 | BCS advice to the Department on EPBC Act listed threatened species and communities

DOC23/34558 – Spicers Creek Wind Farm (SSD-41134610)
EPBC Bilateral Assessment

TABLE 1: BCS OFFICER PROJECT ADVICE TO DPHI ON EPBC ACT LISTED THREATENED SPECIES AND COMMUNITIES

Requirement	Information	Reference (BAM / BLA[1])
Background & Description of Action	Does the EIS/BDAR[2]: ☒ clearly show how operational and construction footprints, including clearing boundaries, structures to be built and elements of the action are situated with regard to MNES ☒ depict stages and timing of the action that may impact on MNES ☒ provide a map(s) of the subject land boundary showing the final proposal/disturbance footprint with respect to location of MNES, including GIS shape files. Include references to where this detail is provided.	BAM Chapters 3, 4, 5 and 8
	Provide advice on the adequacy of the background and action description with respect to MNES and identify any recommended additional information requirements: The bilateral assessment for this project relates to the construction of a wind farm with a development footprint of approximately 1471 hectares, which is comprised of: • up to 117 wind turbine generators (WTGs) with a maximum tip height of 256 meters above ground level • battery storage facilities (400 megawatts) • substations and switching stations • site office and site compounds • wind and meteorological masts • communications cables • internal roads and WTG hardstands • temporary construction elements including: - concrete batching and crushing plants - site compound and office	

[1] Bilateral agreement (BLA) made under section 45 of the EPBC Act, including Amending Agreement No. 1 (2020)
[2] Or revisions of the BDAR and associated documentation made as a result of previous reviews or project changes post-exhibition.

Requirement	Information	Reference (BAM / BLA[1])
	- temporary meteorological masts - stockpiles, material storage compounds and laydown areas The BDAR dated June 2023, initially formed Appendix 10 of the Environmental Impact Statement (EIS) for the proposed development. The BDAR was subsequently updated in December 2023, and an addendum report was prepared on 3 May 2024 after the Response to Submissions (RTS). All references to the 'BDAR' in this assessment refer to the December 2023 version and the 'BDAR Addendum' in May 2024. The locations of Matters of National Environmental Significance (MNES) in relation to the development are located in the following figures in the BDAR and addendum report: • Figure 4.1 of the BDAR Addendum – *White Box-Yellow Box- Blakely's Red Gum Grassy Woodlands and Derived Native Grassland* Critically Endangered Ecological Community (CEEC) • Figure 4.2 of the BDAR Addendum – *Grey Box (Eucalyptus microcarpa) Grassy Woodlands and Derived Native Grasslands* Endangered Ecological Community (EEC) • Figure 5.1 of the BDAR – glossy black-cockatoo, white-throated needletail, hooded robin, superb parrot, diamond firetail, large-eared pied bat No species polygons have been prepared for the white-throated needletail, hooded robin, superb parrot, diamond firetail and large-eared pied bat. While low numbers of the large-eared pied bat were documented in the subject land, no breeding habitat was identified within 2 kilometres of the development corridor. Corben's long eared bat was also detected in low numbers but is not shown in Figure 5.1 of the BDAR. A species polygon was prepared for the glossy black-cockatoo (Figure 3.3 of the BDAR Addendum), and an assumed species polygon has been prepared for the pink-tailed worm lizard (Figure 3.4 of the BDAR Addendum). The proponent provided BCS with shape files for the maps in the BDAR. BCS can confirm that the spatial data and the areas of impact to MNES in the BDAR are mostly consistent. Figure 5.1 of the BDAR has not been amended after detailed analysis of thermal images and herbarium specimens. The koala was not recorded on site and this record not been considered in the MNES assessment. BCS requested an updated figure but have not received the update at the time of preparing this document. Figure 5.1 in the BDAR is consistent with the threatened species records in the spatial data and finalised BDAR, with the exception of the koala and Corben's long-eared bat.	

Requirement	Information	Reference (BAM / BLA[1])
Landscape Context of the MNES	**Provide advice on the adequacy of the landscape context information and identify any additional information requirements:** Section 3.2 'Landscape Features' of the BDAR describes the landscape context and features of the project. This section includes information which meets the requirements of the BAM. No additional information is required.	BAM Section 3.1 BLA clause 7.4
EPBC Act Listed Threatened Species & Communities	Verify that the EIS/BDAR includes relevant information on the identification of all EPBC Act listed threatened species and communities on the site or in the vicinity[3] via: ☒ field based survey effort ☒ published peer reviewed literature ☒ local data ☒ supporting databases (such as the NSW BioNet Vegetation Classification, NSW BioNet Threatened Biodiversity Data Collection, NSW BioNet Atlas, Commonwealth Species Profile and Threats Database search results) ☒ Verify that the EIS/BDAR includes appropriate mapping of all EPBC Act listed threatened species and communities in accordance with the relevant Commonwealth Listing Advice. The EIS/BDAR should include important populations and critical habitat as defined in Approved Listing Advice, Approved Conservation Advice and Recovery Action Plans. **Provide advice on the adequacy of the identification methods and mapping information / any additional information requirements:** ***Field-based survey effort:*** The methods used for surveys are documented in Appendix D of the BDAR. The survey methodology for assessing native vegetation (vegetation integrity plots and native vegetation mapping), threatened flora survey methodologies and effort, and threatened fauna survey effort are described in various sub-sections of section 1.3, section 1.4 and section 1.5 of Appendix D. Bird and bat utilisation surveys (BBUS) are described in section 1.5.4.5 of Appendix D of the BDAR.	BAM Chapters 4 and 5

[3] On land to which impacts may extend

Requirement	Information	Reference (BAM / BLA[1])
	Floristic and vegetation integrity data were collected in accordance with the minimum requirements under the BAM. Vegetation surveys identified *White Box-Yellow Box- Blakely's Red Gum Grassy Woodlands and Derived Native Grassland* CEEC and *Grey Box (Eucalyptus microcarpa) Grassy Woodlands and Derived Native Grasslands* EEC on site. BCS identified inconsistencies in the categorisation of EPBC Act listed Box-Gum Woodland and Grey-Box Woodland communities in the BDAR. The inconsistencies raised by BCS were reviewed in the BDAR Addendum. BCS is satisfied that the proponent has adequately assessed the native vegetation in the development corridor. The development corridor contains: • 193.6ha of *White Box-Yellow Box- Blakely's Red Gum Grassy Woodlands and Derived Native Grassland* CEEC • 98.4 ha *of Grey Box (Eucalyptus microcarpa) Grassy Woodlands and Derived Native Grasslands* EEC The proponent has committed to ensuring that micrositing will not increase the quantum of impact to native vegetation and threatened species above what has been identified in the development footprint. The development footprint contains: • 53.8 ha of *White Box-Yellow Box- Blakely's Red Gum Grassy Woodlands and Derived Native Grassland* CEEC • 31.2 ha of *Grey Box (Eucalyptus microcarpa) Grassy Woodlands and Derived Native Grasslands* EEC No EPBC Act-listed threatened flora species were documented within the development corridor for the proposed project. Seven EPBC Act-listed threatened fauna species were found on the project site; the glossy black-cockatoo (*Calyptorhynchus lathami lathami*), hooded robin (*Melanodryas cucullata cucullata*), superb parrot (*Polytelis swainsonii*), diamond firetail (*Stagonopleura guttata*), large-eared pied bat (*Chalinolobus dwyeri*), Corben's long-eared bat (*Nyctophilus corbeni*) and the migratory species, the white-throated needletail (*Hirundapus caudacutus*). One EPBC Act-listed threatened fauna species have been assumed to be present; the pink-tailed worm lizard (*Aprasia parapulchella*). BCS is satisfied that flora and fauna survey requirements for the BAM have been met.	

Requirement	Information	Reference (BAM / BLA[1])
	Published peer reviewed literature: Section 13.0 'References' and Section 8.0 of Appendix H of the BDAR includes peer-reviewed papers that were used for the assessment of MNES entities. Additional references can also be found in Appendix D of the BDAR. There are a number of references to NSW or Commonwealth Government websites, and these are considered to be current and contain reliable information about all MNES considered for this project. While a broad range of peer-reviewed literature has generally been used to underpin decision-making in the BDAR, BCS considers that the assessment of blade strike and indirect impacts on fauna would have benefited from a more comprehensive literature search. ***Local data:*** No local data was used for the proposed project. ***Supporting databases:*** Six databases were used for the MNES assessment: • NSW DCCEEW BioNet Vegetation Information System (VIS) • NSW DCCEEW BioNet Threatened Biodiversity Data Collection (TBDC) • NSW DCCEEW BioNet Atlas • NSW DCCEEW State Vegetation Map • DCCEEW EPBC Protected Matters Search Tool (PMST) • Australian Bureau of Meteorology (BOM) Climate Data Online Tool **Appropriate mapping of all EPBC Act-listed species and communities in accordance with relevant Commonwealth Listing Advice:** During the exhibition period of the EIS, BCS conducted a site visit which included an assessment of Plant Community Type (PCT) 267 within the development. Based on BCS observations during the site visit we noted that the categorisation of Inland Grey Box EEC was not consistent with the conservation advice provided in the	

Requirement	Information	Reference (BAM / BLA[1])
	Grey Box (E. microcarpa) Grassy Woodlands and Derived Native Grasslands of South-Eastern Australia EPBC Assessment Guide [4]. The mapping of MNES threatened ecological communities (Box-Gum Woodland CEEC and Inland Grey Box EEC) has been subsequently revised in the BDAR Addendum. BCS is satisfied that the proponent has adequately assessed the native vegetation in the development corridor. The proposed development footprint will impact: • 53.8 ha of *White Box-Yellow Box- Blakely's Red Gum Grassy Woodlands and Derived Native Grassland* CEEC • 31.2 ha of *Grey Box (Eucalyptus microcarpa) Grassy Woodlands and Derived Native Grasslands* EEC Both threatened ecological communities (TECs) have been assessed within the development corridor against the Approved Conservation Advice criteria published by the Commonwealth Threatened Species Scientific Committee (TSSC). The assessment for Box-Gum Woodland CEEC has been provided in section 4.3.2 of the BDAR Addendum and depicted in Figure 4.1. The assessment for Inland Grey Box Woodland EEC has been provided in section 4.3.4 with the accompanying Figure 4.2. The spatial data and credit reports are consistent with the BDAR Addendum. The species polygon for the glossy black-cockatoo is presented in Figure 3.3. of the BDAR Addendum. The pink-tailed legless lizard was not recorded on site but has been assumed to be present. Large-eared pied bat, Corben's long-eared bat, white-throated needletail and superb parrot were all recorded on site, but no breeding habitat was identified for these species. As such, breeding habitat has not been mapped and no species credits are required. The MNES referral documentation listed the critically endangered regent honeyeater (*Anthochaera phrygia*), as likely to be significantly impacted (Section 8.6 of the BDAR). The swift parrot (*Lathamus discolor)* was not listed in the referral documentation but was assessed as also having foraging habitat impacted by the project. Targeted surveys were conducted for both species and the habitat for each species was reviewed (Table 1.8 of Appendix D).	

[4] Department of Sustainability, Environment, Water, Populations and Community. DCCEEW. (2012). Grey Box (Eucalyptus microcarpa Grassy Woodlands and Derived Native Grasslands of South-Eastern Australia. Retrieved from Grey Box (Eucalyptus microcarpa) Grassy Woodlands and Derived Native Grasslands of South-Eastern Australia - DCCEEW

Requirement	Information	Reference (BAM / BLA[1])
	Neither of these species were considered to have breeding habitat (species credit habitat) present within the development site. Therefore, these species are treated as ecosystem credit species. The foraging value of the project area to these species, and the likely impact to these species, is defined by the PCTs that the species are associated with in the Threatened Biodiversity Data Collection (TBDC). While maps of the PCTs impacted by this project are provided in the BDAR, specific habitat for these two MNES threatened fauna species have not been mapped. **Any important populations and critical habitat, as defined in Approved Listing Advice, Approved Conservation Advice and Recovery Action Plans:** There are no 'important populations' or 'critical habitat' likely to be impacted by the project.	
	Advise whether there is appropriate justification and supporting evidence for the addition and/or the exclusion of any EPBC Act listed threatened species and/or communities from the list (if applicable): All species and communities identified in the referral documentation have been assessed.	
Avoidance, Minimisation, Mitigation & Management	Verify that the EIS/BDAR demonstrates all feasible alternatives and efforts to avoid and minimise impacts on EPBC Act listed threatened species and communities (including direct, indirect and prescribed impacts) including an analysis of alternative: ☒ designs and engineering solutions ☒ modes or technologies ☒ routes and locations of facilities ☒ sites within the subject site ☒ Verify that the EIS/BDAR identifies any other site constraints in determining the location and design of the proposal (such as bushfire protection requirements, flood planning levels, servicing constraints, etc). Verify that the EIS/BDAR provides feasible measures to mitigate and/or manage impacts on EPBC Act listed threatened species and communities (including direct, indirect and prescribed impacts) including: ☒ techniques, timing, frequency and responsibility ☒ identify measures for which there is risk of failure	BAM Chapters 6, 7 and 8 BLA clause 7.1

Requirement	Information	Reference (BAM / BLA[1])
	☒ evaluate the risk and consequence of any residual impacts ☒ any adaptive management strategy proposed to monitor and respond to impacts. **Confirm that all feasible alternatives and efforts have been made to avoid and minimise impacts on EPBC Act listed threatened species and communities.** Section 7.1 of the BDAR addresses avoidance and minimisation of native vegetation and prescribed impacts. Much of the infrastructure has been located within exotic grasslands or in derived native grassland. Approximately 87% of the proposed disturbance footprint is located within derived native grasslands or exempt land. Section 7.1.1.2 of the BDAR details the steps taken to demonstrate further avoidance of TECs. Section 6.3.2 of the BDAR addendum contains an analysis of bat activity within the rotor swept area. Two EPBC Act listed bat species were recorded, the large-eared pied bat and Corben's long-eared bat. No EPBC listed bat species were recorded flying more than 30m above ground level (Table 6.12 of BDAR Addendum). Based on the information provided BCS considers that there is a low risk of turbine strike to EPBC Act listed bat species. A risk assessment has been provided for the superb parrot, glossy black-cockatoo and the white-throated needletail in section 6.3.3 of the BDAR Addendum. The project has conducted an adequate review of the literature to support their risk rating for each species. However, BCS considers that the risk assessment requires additional bird utilisation surveys to accurately assess potential turbine strike. Given the uncertainty surrounding turbine strike, the proponent has committed to developing further mitigation measures during the development of the Bird and Bat Adaptive Management Plan (BBAMP). The proponent has committed to micro-siting turbines a minimum of 200m from Dapper Nature Reserve to minimise impacts to threatened birds and bats (section 8.2.2.1 of the BDAR). **Verify that the EIS/BDAR provides feasible measures to mitigate and/or manage impacts on EPBC Act listed threatened species and communities (including direct, indirect, and prescribed impacts)** BCS requested additional information on the mitigation measures proposed for Box-Gum Woodland CEEC, which is considered a Serious and Irreversible Impact (SAII) entity. BCS have not received detailed information on the SAII additional and appropriate measures that will be applied to mitigate or manage the impacts to this CEEC; therefore cannot determine whether feasible measures are being proposed.	

Requirement	Information	Reference (BAM / BLA[1])
	Section 7.2.1 of the BDAR indicates that mitigation measures for prescribed impacts to threatened species will be developed as part of post-approval management plans. A conceptual framework for the BBAMP has been included in Table 7.5 of the BDAR. BCS has requested further detail of the measures for offsetting prescribed impacts to threatened birds and bats. Given the lack of detail regarding mitigation measures, the risk and consequences of prescribed impacts cannot be determined. BCS has committed to work with the proponent post-approval during preparation of the BBAMP to ensure that mitigation measures appropriate to the risk are implemented.	
Impact Assessment	Verify that the EIS/BDAR: ☒ identifies the residual adverse impacts likely to occur to **each** EPBC Act listed threatened species and/or community after the proposed avoidance and mitigation measures are taken into account ☒ provides adequate justification and evidence for the predicted level of impact, with reference to the: • Commonwealth's Significant Impact Guideline: *https://www.environment.gov.au/system/files/resources/42f84df4-720b-4dcf-b262-48679a3aba58/files/nes-guidelines_1.pdf* • DPIE Guidance to Assist a Decision-Maker to Determine a Serious and Irreversible Impact (SAII): (*https://www.environment.gov.au/system/files/resources/42f84df4-720b-4dcf-b262-48679a3aba58/files/nes-guidelines_1.pdf*) Section 7.0 of the BDAR 'Avoid and Minimise Impacts' addresses the measures that have been taken to avoid and minimise impacts to biodiversity. Section 7.2.1 'Bird and Bat Adaptive Management Plan' outlines the monitoring program and strategy to manage and mitigate operational issues relating to bird and bat impacts for the wind farm. Table 7.5 of the BDAR provides a BBAMP framework. BCS have committed to working with the proponent post-approval when they prepare the BBAMP to ensure that mitigation measures appropriate to the risk are implemented. Specific comments on avoidance and minimisation of impacts to MNES are included below. **Box-Gum Woodland CEEC and Inland Grey Box EEC** The BDAR (Section 4.1.1) states that throughout the development of the project layout, design decisions have been implemented to avoid impacts to threatened ecological communities. Table 4.2 and Table 4.4 in section 4.0 of the BDAR Addendum provide a summary of the impact assessment for each TEC. The EPBC referral	BAM Chapters 8 and 9 BLA clauses 6.2(b)(i)-(ii) and 7.1

Requirement	Information	Reference (BAM / BLA[1])
	documentation indicated that the impact to Box-Gum Woodland would not exceed 43.2 hectares and the impact of Inland Grey Box Woodland would not exceed 49.6 hectares. Table 4.2 of the BDAR Addendum indicates that the impact to Box-Gum Woodland is 44.6 hectares which includes 31.3 hectares in moderate-good condition. There will also be impacts on 6.8 hectares of thinned and planted Box-Gum Woodland and 6.5 hectares of derived native grassland. Table 4.4 of the BDAR Addendum indicates that the impact to Inland Grey Box Woodland is 31.2 hectares which includes 12.7 hectares in moderate-good condition. There will also be impacts on 9.8 hectares of thinned Inland Grey Box Woodland and 17.9 hectares of derived native grassland. **Prescribed Impacts** Prescribed impacts are described in section 6.0 and 7.1.2 of the BDAR and an assessment of the prescribed impacts is provided in Table 8.9. No EPBC Act listed species are considered likely to be dependent upon habitat features that are associated with any prescribed impacts and no offsets have been proposed for prescribed impacts at this stage. The proponent has proposed an offsetting strategy for turbine strikes which will be outlined in the BBAMP. **Habitat Connectivity** Section 3.2.2 of the BDAR states that the project consists of an agricultural landscape, predominantly comprised of grazed grasslands with remnant trees and forest patches. The project is bordered on the south-east by Dapper Nature Reserve. The site was selected as large areas had already been historically cleared, and the proponent sought to avoid and minimise the impact on native vegetation, flora and fauna (section 7.1.1). The wider project site contains steppingstone habitat corridors across the landscape, varying in quality and width. These corridors provide a linkage of habitat from the project site to Goonoo State Conservation Area, Goonoo National Park, Yarrobil National Park, Dapper Nature Reserve and other conserved lands. Table 6.1 identifies that the clearing of native vegetation will include canopy trees, but the trees are mainly isolated, scattered paddock trees. Areas of derived native grassland and highly disturbed agricultural land will also be removed. The threatened entities that were observed during BBUS surveys (large-eared pied bat, Corben's long-eared bat, white-throated needletail, superb parrot and glossy black-cockatoo) are all highly mobile species, capable of flying over the areas proposed for development. Section 8.2.2 of the BDAR identifies that Dapper Nature Reserve provides substantial habitat for forest dwelling birds, including the glossy black-cockatoo. The proponent has proposed to microsite turbines a minimum of	

Requirement	Information	Reference (BAM / BLA[1])
	200m away from the Dapper Nature Reserve interface to minimise prescribed and indirect impacts. BCS considers that there is insufficient evidence to support the conclusion that a 200m buffer will negate all impacts. BCS has committed to working with the proponent and NSW National Parks and Wildlife Service to develop a monitoring program for Dapper Nature Reserve in the BBAMP. **Vehicle Strike** Table 6.1 states that vehicle movements would be on purpose built, all-weather, low gradient tracks throughout the development footprint and the proponent aims to upgrade and utilise existing tracks where practicable. No threatened species are likely to be affected by vehicle strike as the vehicles will be travelling at low speeds. **Turbine Strike** 117 WTGs are proposed for the Spicers Creek Wind Farm. The rotor swept area of turbines is from 50 m to 260 m above ground level. An analysis of bat activity within the rotor swept area has been provided. No EPBC Act listed species were recorded flying at RSA heights during bat utilisation surveys. We consider that the risk to birds remains uncertain and there is insufficient evidence to support the risk assessment for threatened birds. As such, BCS supports the proponent's proposal to offset prescribed impacts through conservation actions. BCS has committed to work with the proponent post-approval while they prepare the BBAMP to ensure that mitigation measures appropriate to the risk are implemented.	

Requirement	Information	Reference (BAM / BLA[1])
	Complete the following information for each EPBC Act listed threatened species and/or community (add/remove rows as necessary): • EPBC Act listed threatened species and/or community • nature and consequences of impacts (i.e. direct and indirect) • duration of impact (e.g. construction, operation, life of project) • quantum of impact • consequences of impacts on the species, the population and / or extent of the community at local, state and national scales Confirm the level of predicted impact (cross appropriate): ☒ high risk of impact (requiring offsets)# or SAII ☒ Low risk of impact (not requiring offsets) #For purposes of EPBC approval, as a minimum, significant adverse residual impacts **must** be offset (significant impact can be evaluated with reference to the significance impact guidelines) **Confirm that all EPBC Act listed threatened species and communities that occur on the subject land, or in the vicinity, have been identified in the BDAR/EIS including those that are ecosystem credit species.** BCS confirms that all EPBC Act listed threatened species and communities that occur on the subject land, or in the vicinity, have been identified in the BDAR (see further information below). **If any species and communities identified in the referral documentation (provided by DAWE) have been ruled out because they don't occur on or near the site, verify that there is robust analysis and justification for why these species can be ruled out.** The referral decision brief (dated 4 January 2023) identified that the project was likely to have a significant impact on: • *White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland* TEC, listed as Critically Endangered • Koala (*Phascolarctos cinereus*) – combined populations of Queensland, New South Wales and the Australian Capital Territory, listed as Endangered • Regent honeyeater (*Anthochaera phrygia*) – listed as Critically Endangered	

Requirement	Information	Reference (BAM / BLA[1])
	• Superb parrot (*Polytelis swainsonii*) – listed as Vulnerable In addition, the Commonwealth identified potential for some risk of significant impacts to the following matters: • *Grey box (Eucalyptus macrocarpa) Grassy Woodlands and Derived Native Grasslands of South-eastern Australia* TEC, listed as Endangered • Large-eared pied bat (*Chalinolobus dwyeri*) – listed as Vulnerable • Corben's long-eared bat (*Nyctophilus corbeni*) – listed as Vulnerable • Grey-headed flying-fox (*Pteropus poliocephalus*) – listed as Vulnerable • Painted honeyeater (*Grantiella picta*) – listed as Vulnerable • South-eastern glossy black-cockatoo (*Calyptorhynchus lathami lathami*) – listed as Vulnerable • Spotted-tailed quoll (*Dasyurus maculatus maculatus*) – SE mainland population, listed as Endangered • Pink-tailed worm lizard (*Aprasia parapulchella*) – listed as Vulnerable The referral also identifies that the proposed action is likely to have a significant impact on the following listed migratory species: • White-throated needletail (*Hirundapus caudacutus*) – listed as a Vulnerable and Migratory • Fork-tailed swift (*Apus pacificus*) – listed as Migratory • Latham's snipe (*Gallinago hardwickii*) – listed as Migratory • Rufous fantail (*Rhipidura rufifrons)* – listed as Migratory The Endangered Key's matchstick grasshopper (*Keyacris scurra*) was not included in the referral documentation but has recently been recorded in the Inland Slopes Interim Biogeographic Regionalisation of Australia (IBRA) sub-region. As such, the proponent has included the species in the MNES assessment. The swift parrot was not listed in the referral documentation but was also included for targeted bird surveys. Targeted surveys were conducted for the regent honeyeater and swift parrot by Dr Ross Crates, a listed regent honeyeater species expert (Section 1.5.4.3 of Appendix D of the BDAR). Neither species was recorded on site, but some foraging habitat was detected. No historical records exist for the regent honeyeater or the swift parrot at the proposed development site. Several regent honeyeater records occur in the local region, the closest of which occurs approximately 15 km from the project site. The development site does not occur within the Important Habitat Mapping areas for this species. Similarly, while some foraging habitat for the swift parrot occurs within the development area, the development site is not located within the Important Habitat Map area for this species.	

Requirement	Information	Reference (BAM / BLA[1])
	A summary of the Key's matchstick grasshopper survey effort is included below. Four additional threatened species and three migratory species listed in the referral decision brief as likely being significantly impacted were not recorded during surveys. The survey effort for these species is summarised below:	

Entity	BDAR
Listed in the referral decision brief (dated 4 January 2023)	
Koala (*Phascolarctos cinereus*)	Section 1.5.4.4 of Appendix D of the BDAR states that koala Spot Assessment Technique (SAT) surveys and thermal drone surveys were conducted across the development corridor. The koala surveys occurred during the transitionary period for the NSW Koala BAM Survey Guide, and thus the methods applied were inconsistent with current BAM guidance. The proponent consulted with BCS and developed a survey method to ensure the koala was adequately surveyed across the site. Supplementary survey methods included spotlighting, camera trapping, call playback and passive acoustic monitoring were employed. No koalas were detected in the development corridor and no evidence of koala occupation was observed in the wind farm development corridor.
Grey-headed flying-fox *(Pteropus poliocephalus)*	Section 8.2.21.2 states that the species was not recorded within the proposed site and no colonies were detected during any surveys. The proponent reviewed available information on the threatened species profile page, NSW BioNet Atlas and the National Flying-fox monitoring viewer to determine existing colonies. There are 41 records within 50km of the proposed development site and the nearest flying-fox colonies are over 30km from the proposed site.
Painted honeyeater (*Grantiella picta*)	Targeted bird surveys and bird utilisation surveys were conducted for threatened birds (Section 1.5.4.2 of Appendix D of the BDAR). The painted honeyeater was not detected during any bird surveys.
Spotted-tailed quoll (*Dasyurus maculatus maculatus*)	Targeted surveys including baited camera trapping, spotlighting and passive acoustic monitoring occurred across the development site. Table A4 of Appendix H of the BDAR states that the species was not recorded in

Requirement	Information		Reference (BAM / BLA[1])
		the development site and no evidence of breeding or occupation (e.g., dens, latrine sites) was observed during biodiversity surveys.	
	Key's matchstick grasshopper (*Keyacris scurra*)	Targeted surveys were conducted for the species using methods provided by BCS and the species accountable officer (Section 2.4 of BDAR Addendum). The species was not recorded during targeted surveys.	
	Fork-tailed swift (*Apus pacificus*)	Targeted bird surveys and bird utilisation surveys were conducted for threatened birds (Section 1.5.4.2 of Appendix D of the BDAR). The fork-tailed swift was not detected during any bird surveys.	
	Latham's snipe (*Gallinago hardwickii*)	Targeted bird surveys and bird utilisation surveys were conducted for threatened birds (Section 1.5.4.2 of Appendix D of the BDAR). Latham's snipe was not detected during any bird surveys.	
	Rufous fantail (*Rhipidura rufifrons*)	Targeted bird surveys and bird utilisation surveys were conducted for threatened birds (Section 1.5.4.2 of Appendix D of the BDAR). The rufous fantail was not detected during any bird surveys.	
	Provide advice on whether there are any other MNES species or communities that are missing from the assessment based on BCS knowledge and experience. No currently listed MNES species or communities are missing from the assessment for this project. **Advise whether there is appropriate justification and supporting evidence for the addition and/or exclusion of any EPBC Act listed threatened species and/or communities from the list (if applicable):** Two threatened species (the regent honeyeater and the swift parrot) were not recorded in the proposed development footprint, but foraging habitat was identified for both species. Four threatened species (koala, grey-headed flying-fox, painted honeyeater and spotted-tail quoll) listed in the referral decision brief as likely to be significantly impacted, were assessed as not occurring in the proposed development site. Three migratory species (fork-tailed swift, rufous fantail and Latham's snipe) were also assessed as not occurring. BCS considers that the proponent has provided sufficient evidence that the Key's matchstick grasshopper is unlikely to be impacted by the proposed development.		

Requirement	Information	Reference (BAM / BLA[1])
	BCS is satisfied that it was justifiable to include the threatened species and communities listed below in the assessment of MNES. These entities have been appropriately assessed:	

MNES Entity	EPBC Listing Status	Reason for Inclusion
White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland	Critically Endangered	Recorded
Grey box (*Eucalyptus macrocarpa*) Grassy Woodlands and Derived Native Grasslands of South-eastern Australia	Endangered	Recorded
Superb parrot (*Polytelis swainsonii*)	Vulnerable	Recorded
Large-eared pied bat (*Chalinolobus dwyeri*)	Vulnerable	Recorded
Corben's long-eared bat (*Nyctophilus corbeni*)	Vulnerable	Recorded
South-eastern glossy black-cockatoo (*Calyptorhynchus lathami lathami*)	Vulnerable	Recorded
White-throated needletail (*Hirundapus caudacutus*)	Vulnerable	Recorded
Pink-tailed worm lizard (*Aprasia parapulchella*)	Vulnerable	Assumed present. Records located approximately 35km away (Section 5.6.1.4 of the BDAR)

<table>
<tr><th>Requirement</th><th>Information</th><th>Reference (BAM / BLA[1])</th></tr>
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Provide advice on whether adequate justification and evidence is provided for species and communities that have been identified as being at low risk of impact.

All threatened species and communities likely to be impacted have been assessed adequately under the BAM and an offset obligation has been calculated. During the RTS, the proponent provided additional information on the targeted surveys for the superb parrot, concluding it was unlikely that the species would breed in the development corridor. Targeted surveys for the Key's matchstick grasshopper occurred in March and April 2024, after we submitted our Response to Submissions (section 2.4 of BDAR Addendum). The species was not detected during surveys, and thus, no credits have been generated for offset. Table 8.14 of the BDAR has not been updated to remove these species from the MNES assessment.

No breeding habitat was identified for the large-eared pied bat or Corben's long-eared bat. Analysis of at-height bat data indicated that both species were unlikely to be impacted by turbine collisions. The proposed development is unlikely to impact any EPBC-listed threatened bats or their habitat.

Eight species have been removed from further assessment after targeted survey. The survey effort for these species was adequate.

Assess the consequences of impacts on the species, the population and / or extent of the community at local, state and national scales.

<table>
<tr><th>MNES Entity</th><th>Area of Impact (ha)</th><th>Local Consequence</th><th>State Consequence</th><th>National Consequence</th></tr>
<tr><td>White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland</td><td>53.8 ha</td><td>The project will increase fragmentation of this community within the landscape. The Inland Slopes IBRA sub-region has been subjected to extensive clearing.</td><td>Current extent in NSW is approximately 250,000 hectares. The amount of this community to be impacted is small in the context of the NSW community occurrence (0.02%</td><td>Current national extent of approximately 416,000 hectares. The amount of this community to be impacted is small in the context of the NSW community occurrence (0.01%</td></tr>
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Requirement	Information					Reference (BAM / BLA[1])
				of the estimated NSW extent).	of the estimated national extent).	
	Grey Box (*Eucalyptus microcarpa*) Grassy Woodlands and Derived Native Grasslands of South-eastern Australia	31.2 ha	Occurs in the NSW South West Slopes IBRA region (inland Slopes sub-region) and Brigalow Belt South IBRA region (Talbralgar Valley subregion). The subject land is the eastern-most occurrence of this community. The project will further fragment this community in an already fragmented landscape.	The estimated extent in NSW in 2010 (Threatened Species Scientific Committee) was between 300,000 and 330,000 ha. The amount of this community to be impacted is small in the context of the NSW community occurrence (0.01% of the estimated NSW extent).	The estimated national extent in 2010 (Threatened Species Scientific Committee) was around 534,500 ha. The amount of this community to be impacted is small in the context of the NSW community occurrence (0.005% of the estimated national extent).	
	South-eastern glossy black-cockatoo (*Calyptorhynchus lathami lathami*)	15.1 ha	Adults and young recorded within the development corridor. Habitat within the locality and IBRA subregions is extensive. The species was documented during one BUS survey and on the adjacent Dapper Nature Reserve. The species is not	The current distribution of the glossy black-cockatoo covers areas from the coast to the tablelands and extends as far west as the Riverina and Pilliga Scrub. The species favours intact woodland and timbered watercourses and	Unlikely to have a significant impact.	

Requirement	Information					Reference (BAM / BLA[1])
			restricted to the subject land. This project will have a minor impact on the local extent.	the amount of area to be impacted is unlikely to be significant.		
	White-throated needletail (*Hirundapus caudacutus*)	130.2 ha	Recorded in the development corridor. Habitat within the locality and IBRA subregions is extensive. The species is migratory and is not restricted to the subject land.	The air space over woodland habitat in the development footprint may provide foraging opportunities. Habitat within the IBRA subregions is extensive and the species is not restricted to NSW.	The impact of turbine collision may have a minor impact on migratory behaviour.	
	Pink-tailed worm lizard (*Aprasia parapulchella*)	4.9 ha	Species not recorded in the development corridor. Suitable habitat at the proposed development site is minimal.	Unlikely to have a significant impact	Unlikely to have a significant impact	
Offsets	Verify that the EIS/BDAR: ☒ identifies any MNES that haven't been offset using the BAM ☒ identifies how impacts requiring offsets correlate to MNES impacts ☒ identifies the plant community types (PCTs) requiring offset and the number and type of ecosystem credits required for impacts to MNES ☒ identifies threatened species requiring offset and the number of species credits required for impacts to MNES ☒ correctly uses the BAM (and BAM calculator) to identify the number and class of biodiversity credits that need to be offset to achieve a standard of 'no net loss' of biodiversity					BAM Chapter 10 BLA clauses 7.1 and 7.2

Requirement	Information	Reference (BAM / BLA[1])
	☐ identifies if ecological rehabilitation and/or biodiversity conservation actions are proposed for offsetting ☒ if known, identifies any other offsetting approach proposed, such as land-based offsets, retiring credits by payment into the Biodiversity Conservation Fund and/or through supplementary measures[#]. [#] In accordance with the BAM there is no longer a requirement to define the offsetting approach at EIS stage. The white-throated needletail has not been offset using a species polygon via the BAM (Table 5.13 of the BDAR). Table 8.14 states that all ecosystem credits generated by the proposed development will provide habitat for the white-throated needletail. The proponent has not provided detailed information on the additional and appropriate measures that will be applied to minimise SAII to Box-Gum Woodland CEEC.	
	Provide advice on the adequacy of the proposed offsets in meeting the requirements of the BAM: The project proponent will retire the credits required to offset the through: • retiring biodiversity credits based on the like-for-like provisions in the Biodiversity Conservation Regulation 2017 (BC Reg). • fund biodiversity conservation actions that are listed in the Ancillary rules: Biodiversity conservation actions and directly benefit the threatened entity impacted, or, • pay into the Biodiversity Conservation Fund, noting it is the proponent's responsibility to notify the Biodiversity Conservation Trust that their payment is for a controlled action. Section 8.6.2 of the BDAR indicates that the current preferred option for credit retirement will be through the securing of in-perpetuity 'like-for-like' land-based offsets under the BC Reg 2017. The proponent has proposed to conserve additional areas of Box-Gum Woodland CEEC in perpetuity via a biodiversity stewardship agreement. These credits generated by this site will not be traded in the credit market, rather they will be retired as an additional measure. BCS has requested a detailed proposal on these measures but has not been provided with further information. The proponent has proposed several mechanisms for offsetting for prescribed and indirect impacts that are novel and outside the Biodiversity Offsets Scheme. These include offsetting blade strike through the funding of conservation actions and committing to designing and implementing a research program or funding of a PhD student to assess whether indirect impacts are occurring on the project (section 10.1.5 of the BDAR). BCS is	

Requirement	Information	Reference (BAM / BLA[1])
	prepared to continue discussions around the detail of these offset mechanisms with the proponent as part of the development of the BBAMP.	
Other Considerations	Verify if any relevant Commonwealth guidelines and policy statements are applicable to the action and listed threatened species and/or community, including but not limited to: ☒ International environmental obligations ☒ Recovery Plans ☒ Approved Conservation Advice ☐ Threat Abatement Plans *The relevant Commonwealth guidelines and policy statements for each species and community are available at: http://www.environment.gov.au/cgi-bin/sprat/public/sprat.pl*	BLA clauses 6.2(b)(iv), 7.2(c), 7.3 and 7.4
	For each EPBC Act listed threatened species and/or community, provide advice on whether the assessment has been adequately informed by applicable Commonwealth guidelines and/or policy statements. For example, the interaction between the proposed action and important populations or critical habitat identified in policy documents and/or the interaction between the proposed action and threatening processes or recommended conservation actions outlined in Commonwealth policies and plans. **International environmental obligations** Table 8.13 of the BDAR discusses migratory species. The bilateral migratory bird agreements are listed in the table but are not discussed in detail. The proposal site does not impact on any Ramsar wetlands. **Recovery Plans** Recovery plans for Box-Gum Woodland and Inland Grey Box Woodland TECs, the regent honeyeater, superb parrot and grey-headed flying fox are referenced in Appendix C. Recovery Plans have generally been referenced to inform the identification of areas of important habitat for the above species. Examples of these references are:	

Requirement	Information	Reference (BAM / BLA[1])
	Superb parrot – the EPBC Act Assessment of Significance for this species (found in section 5.6.1.2) references the national recovery plan to identify the types of habitat and if the study area contains any areas of breeding, foraging or long-term maintenance habitat for the species. *Box-Gum Woodland CEEC* – the Additional Impact Assessment provisions (Table 9.1 of the BDAR) references the recovery plan to identify management practices for restoration of Box-Gum Woodland CEECs **Conservation Advices** Conservation Advices for Inland Grey Box Woodland EEC and Box-Gum Woodland CEEC are referenced in Section 4.3 of the BDAR in relation to the relevant recovery and threat abatement actions for each TEC relevant to the proposal. **Key Threatening Processes and threat abatement plans** There is no detailed discussion around Key Threatening Processes (KTP's) or threat abatement plans in the BDAR. There is reference to KTP's in the BDAR in relation to Box Gum Woodland CEEC and grey-headed flying foxes however there is no detailed discussion.	
Recommended Conditions	**Provide advice on any recommended conditions and reasons for imposing the conditions:**	BLA clause 6.2(c)(iii)

Table H-3 | MNES impact and offset summary

Threatened Species / Community listed under EPBC Act	PCTs associated with the ecosystem credit species / ecological community (if applicable)	Area of Impact (ha)	Credits Required	Offsetting Approach	Reference (EIS, BDAR)
White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland	PCT 266 PCT 281	53.8 ha	2344 credits	Retirement of credits through: • Land based offsets through the establishment of new stewardship sites (and subsequent retirement of credits) or by retiring credits from existing stewardship sites. • Purchasing credits through the open credit market. • Paying into the Biodiversity Conservation Fund.	BDAR Addendum does not contain revised credit obligation for EPBC-Act listed TEC's. Appendix D of the BDAR Addendum contains finalised credit reports. Area of impact for Box-Gum Woodland CEEC is provided in Table 4.2 of the Addendum Report. Section 8.6.2 of the BDAR
Grey Box *(Eucalyptus microcarpa)* Grassy Woodlands and Derived Native Grasslands of South-eastern Australia	PCT 81 PCT 267	31.2 ha	903 credits	Retirement of credits through: • Land based offsets through the establishment of new stewardship sites (and subsequent retirement of credits) or by retiring credits from existing stewardship sites. • Purchasing credits through the open credit market. • Paying into the Biodiversity Conservation Fund.	BDAR Addendum does not contain revised credit obligation for EPBC-Act listed TEC's. Appendix D of the BDAR Addendum contains finalised credit reports. Area of impact for Inland grey Box Woodland EEC is provided in Table 4.4 of the Addendum Report.

					Section 8.6.2 of the BDAR
Glossy black-cockatoo	PCT 266 PCT 267 PCT 272 PCT 281 PCT 467	15.1 ha	649 credits	Retirement of credits through: • Land based offsets through the establishment of new stewardship sites (and subsequent retirement of credits) or by retiring credits from existing stewardship sites. • Purchasing credits through the open credit market. • Paying into the Biodiversity Conservation Fund.	BDAR Addendum does not contain revised credit obligation for EPBC-Act listed threatened species. Appendix D of the BDAR Addendum contains finalised credit reports. Section 8.6.2 of the BDAR. Table 3.9 of the BDAR Addendum.
Pink-tailed worm lizard	PCT 266 PCT 277 PCT 272 PCT 281	4.89 ha	139 credits	Retirement of credits through: • Land based offsets through the establishment of new stewardship sites (and subsequent retirement of credits) or by retiring credits from existing stewardship sites. • Purchasing credits through the open credit market. • Paying into the Biodiversity Conservation Fund.	BDAR Addendum does not contain revised credit obligation for EPBC-Act listed threatened species. Appendix D of the BDAR Addendum contains finalised credit reports. Section 8.6.2 of the BDAR. Table 3.9 of the BDAR Addendum

Additional EPBC Act Considerations

Table H-4 contains the additional mandatory considerations, factors to be taken into account and factors to have regard to under the EPBC Act that are additional to those already discussed.

Table H-4 | Additional considerations for the Commonwealth Minister under the EPBC Act

EPBC Act Section	Considerations	Conclusion
Mandatory considerations		
136(1)b	Economic and social matters are discussed in **Section 5** of this report.	The project would provide benefits for the local and regional economy and is of public benefit for up to 30 years. Up to 590 workers would be required during the construction period. Impacts on the local community would primarily occur during the construction period, which has been considered in the assessment report. The recommended conditions require the Applicant to minimise potential biodiversity, traffic and amenity impacts including noise, dust, and visual impacts.
3A, 391(2)	Principles of ecologically sustainable development (ESD), including the precautionary principle, have been taken into account, in particular: • the long term and short term economic, environmental, social and equitable considerations that are relevant to this decision; • conditions that restrict environmental impacts and impose monitoring and adaptive management, reduce any lack of certainty related to the potential impacts of the project; • conditions requiring the project to be delivered and operated in a sustainable way to protect the environment for future generations and conserving the relevant matters of national environmental significance; • advice provided within this report reflects the importance of conserving biological diversity, ecological and cultural integrity in relation to all of the controlling provisions for this project; and • mitigation measures to be implemented which reflect improved valuation, pricing and incentive mechanisms are promoted by placing a financial cost on the proponent to mitigate the environmental impacts of the project.	The Department considers that the project, if undertaken in accordance with the recommended conditions of consent, would be consistent with the principles of ESD.

EPBC Act Section	Considerations	Conclusion
136(2)(e)	Other information on the relevant impacts of the action.	The Department considers that all information relevant to the impacts of the project has been taken into account in its assessment.
139(1)	Requirements for decisions about threatened species and endangered communities	Recovery plans and threat abatement plans are addressed above. Australia's obligations under the Convention on Biological Diversity (Biodiversity Convention) include the conservation of biological diversity, the sustainable use of its components and the fair and equitable sharing of the benefits arising out of the utilisation of genetic resources, including by appropriate access to genetic resources and by appropriate transfer of relevant technologies, taking into account all rights over those resources and technologies, and by appropriate funding. The recommendations of this assessment report are consistent with the Biodiversity Convention, which promotes environmental impact assessment (such as this process) to avoid and minimise adverse impacts on biological diversity. Accordingly, the recommended development consent requires avoidance, mitigation and management measures for listed threatened species, and all information related to the project is required to be publicly available to ensure equitable sharing of information and improved knowledge relating to biodiversity There are no additional requirements for decisions about threatened species and endangered communities that apply to the project. The Apia convention and CITES are not relevant to the project.
Factors to have regard to		
176(5)	Bioregional plans	There is no approved bioregional plan related to the activity.
Consideration on deciding conditions		
134(4)	Must consider: • Information provided by the person proposing to take the action or by the designated Applicant of the action; and • The desirability of ensuring as far as practicable that the condition is a cost effective means for the Commonwealth and the person taking the action to achieve the object of the condition.	All project related documentation is available from the Department's website www.planningportal.nsw.gov.au The Department considers that the recommended conditions at **Appendix E** are a cost effective means of achieving their purpose. The conditions are based on material provided by Squadron that was prepared in consultation with the Department, BCS and other government agencies.

Conclusions on Controlling Provisions

For the reasons set out in **section 6.3** of this report and this appendix, the Department considers that the impacts of the action would be acceptable, subject to the avoidance and mitigation measures described in the EIS, Amendment Reports, BDAR, and the recommended conditions of consent in **Appendix E**.