



Wollar Solar Farm

State Significant Development Assessment

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Executive Summary

Wollar Solar Development Pty Ltd (WSD) proposes to develop a new 290 megawatt (MW) solar farm with 30 MW/30 MW hour (MWh) of battery storage located approximately 7 kilometres (km) south of Wollar and 38 km north east of Mudgee in the Central West and Orana region of NSW.

The project site is located in a rural area, with the nearest non-associated residence located about 2.8 km south. TransGrid's existing Wollar Substation is located about 900 m east of the proposed development footprint. The site would have direct access to the electricity network via existing transmission lines that traverse the site, as well as direct access to the local and regional road network via Barigan Road or Maree Road.

Engagement

The Department exhibited the Environmental Impact Statement (EIS) for the project and received 31 submissions, including eight from government agencies, seven from special interest groups (supporting) and 16 from the general public (supporting).

The Department also consulted with Mid-Western Regional Council (Council) and the relevant government agencies on key issues and inspected the site on 29 August 2018.

Council supports the project and none of the agencies object to the project, subject to the implementation of appropriate mitigation and management measures.

Following further consultation with Wilpinjong Coal Pty Ltd (a project landowner) and Council, WSD amended its application to include an alternate site access option via Maree Road and revised the proposed road upgrades along Barigan Road and Maree Road. These amendments would ensure that WSD can secure access to the site. No other aspect of the project was amended.

Assessment

The Department has undertaken a comprehensive assessment of the merits of the project and considered all potential issues in accordance with the requirements of the *Environmental Planning and Assessment Act 1979*. The key assessment issues identified for the project are land use compatibility, biodiversity and construction traffic.

The site (878 ha) does not include any mapped Biophysical Strategic Agricultural Land. Under the *Land and Soil Capability Mapping in NSW* (OEH, 2017), all land within the development footprint (463 ha) is Class 5 (moderate – low capability land), which supports grazing and requires active management to sustain any cultivation on a rotational basis. The site is currently used for grazing and intermittent cropping.

The Department considers that the project would not significantly reduce the overall agricultural productivity of the region and that the inherent agricultural capability of the site would not be affected, and is satisfied that the site could be returned to agricultural uses in the future following rehabilitation. The Department also notes that WSD proposes to graze sheep on the site during operation of the project.

There are three existing coal mines in the area, and existing mineral and petroleum rights that exist over the entirety of the site. While the ability to access the underlying mineral and petroleum resources would be prevented during operation of the solar farm, the Department and Division of Resources and Geoscience (DRG) considers that this resource would not be sterilised in the long term following decommissioning and rehabilitation of the project.

The project has been designed to largely avoid impacts on high quality native woodland vegetation and threatened species in the locality and all unavoidable impacts (including clearing of 25 ha of native woodland and 205 ha of derived native grassland) would be offset in accordance with the NSW *Biodiversity Offsets Scheme*, which is included as a requirement in the recommended conditions.

The potential traffic impacts would be relatively short-term and minor in nature. The site access routes and road upgrades have been designed in consultation with Council and the Roads and Maritime Services. The Department has recommended strict conditions requiring road upgrades and a comprehensive Traffic Management Plan.

The solar farm is relatively low-lying (solar panels up to 4 m high) and the site is generally flat and gently undulating and surrounded by steeper terrain and woodland vegetation. Distance, intervening topography and vegetation would provide natural screening from all residences and most roads.

The project would employ up to 320 workers during the 12 to 18 month construction period. The Department is satisfied that there is sufficient accommodation in nearby towns, such as Mudgee and Gulgong. However, the Department has recommended a condition requiring WSD to prepare and implement an accommodation and employment strategy to ensure there would be sufficient accommodation to house construction workers, and to prioritise the employment of local workers, in the unlikely event that the construction of the project occurs in conjunction with the construction of other major projects.

Given the distance of the project from other approved and proposed projects in the region, with the operational Beryl Solar Farm located approximately 45 km from the site and the next closest solar farm (Dunedoo Solar Farm) located about 75 km from the site, there would be no material cumulative impacts, on agricultural land, amenity or the local road network

To address the residual impacts of the project, including Aboriginal cultural heritage, water, erosion, noise and hazards, the Department has recommended a range of stringent conditions, developed in conjunction with agencies and Council, to ensure these impacts are effectively minimised or offset to meet acceptable standards.

Summary

Overall, the Department considers the site to be appropriate for a solar farm as it has good solar resources and available capacity on the existing electricity network and is consistent with the Department's *Large-Scale Solar Energy Guideline*.

The project is also consistent with the Commonwealth's *Renewable Energy Target* and NSW's *Climate Change Policy Framework* and *Renewable Energy Action Plan*, as it would contribute 290 MW of renewable energy to the National Electricity Market, including a battery storage facility with a capacity of 30 MW/30 MWh. Importantly, the battery facility would enable the project to store solar energy for dispatch to the grid outside of daylight hours and/or during periods of peak demand, which has the potential to increase grid stability and energy security.

The project would also provide flow-on benefits to the local community, including up to 320 construction jobs and a capital investment of \$431 million. There were no community objections and Council supports the project.

The Department considers that the project would result in benefits to the State of NSW and the local community and is therefore in the public interest.

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1 Project

Wollar Solar Development Pty Ltd (WSD) proposes to develop a new State significant development solar farm approximately 7 kilometres (km) south of Wollar and 38 km north east of Mudgee in central west NSW, in the Mid-Western Regional Council local government area (LGA) (see **Figure 1** and **Figure 2**).

The project involves the construction of a new solar farm with a generating capacity of approximately 290 megawatts (MW) and 30 MW/30 MW-hour (MWh) of battery storage. It also involves the upgrading and decommissioning of infrastructure and equipment in the future. While the capacity of the project may increase over time as technology improves, the footprint of the development would not increase.

The solar farm would connect to TransGrid's existing 330 kilovolt (kV) transmission line that transects the development site.

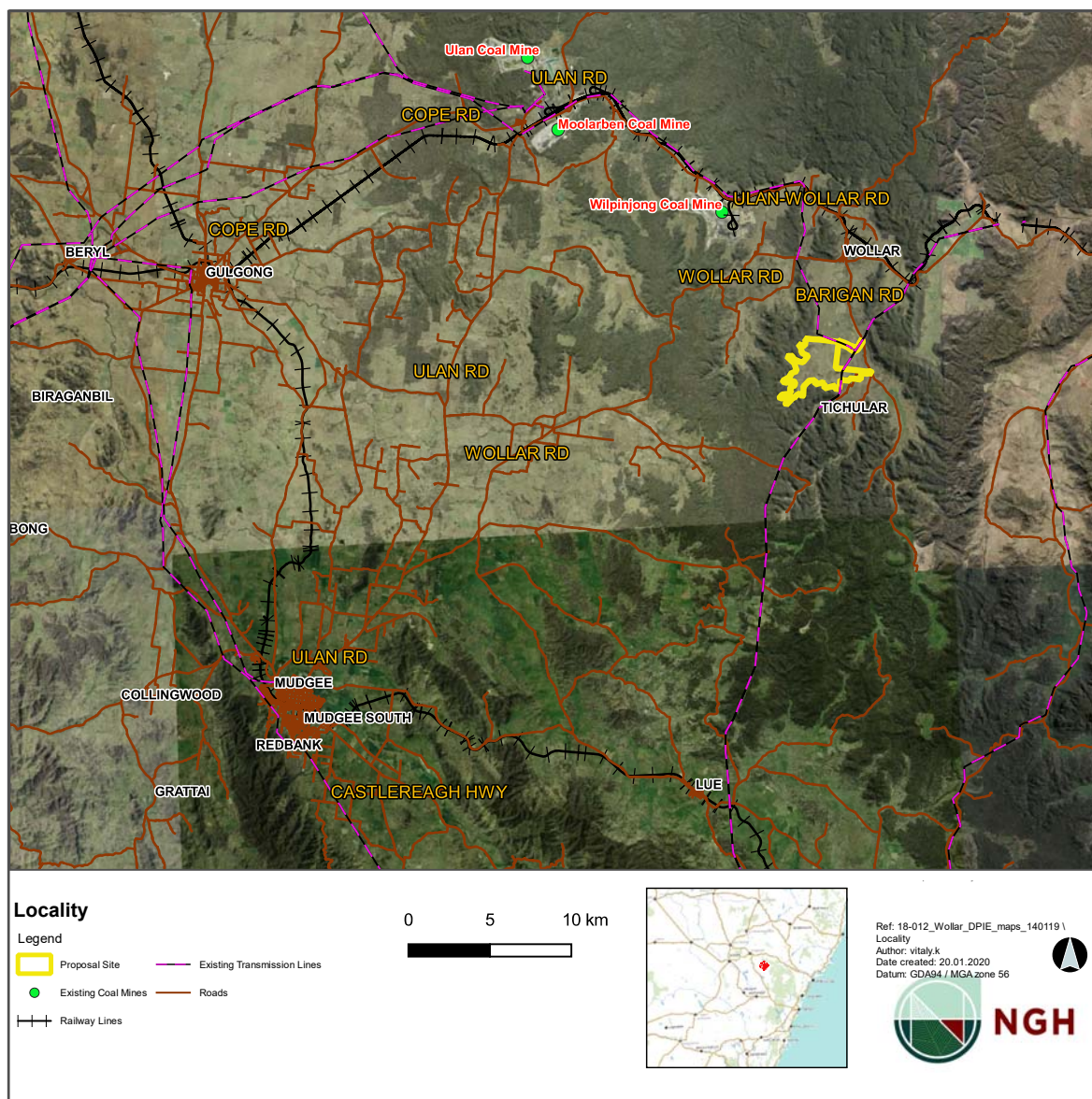


Figure 1 | Regional Context



Figure 2 | Project Site

The key components of the project are summarised in **Table 1**, depicted in **Figure 3** and described in the Environmental Impact Statement (EIS) (see **Appendix B**), Submissions Report (see **Appendix D**), Amendment Report (see **Appendix E**) and additional information (see **Appendix F**).

Table 1 | Main Components of the Project

Aspect	Description
Project summary	<p>The project includes:</p> <ul style="list-style-type: none"> approximately 922,000 solar panels (up to 4 m high, either fixed tilt or tracking panels) and 58 power conversion units (PCU) (up to 4 m high). an onsite substation and connection to TransGrid's 330 kV transmission line; a lithium-ion battery storage facility (30 MW/30 MWh) located within 15 containers in the northeastern corner of the site in a building approximately 5m in height; and substation and operations and maintenance buildings (approximately 5 m in height) internal access tracks, staff amenities, maintenance buildings (up to 6 m high to include transformers), laydown areas, car parking and security fencing (2.3 m high).
Project area	<ul style="list-style-type: none"> Site: 878 hectares Development footprint: 463 hectares
Access route	<ul style="list-style-type: none"> Over-dimensional and AV/B-Double vehicles would access the site via the Golden Highway or Castlereagh Highway, and Ulan Road, Ulan-Wollar Road, Barigan Street, Maitland Street, Wollar Road and Barigan Road. All medium and heavy rigid vehicles and shuttle buses would have the option to access the site via the above route, or via Cope Road, Ulan Road, Ulan-Wollar Road, Barigan Street, Maitland Street, Wollar Road and Barigan Road, or via Castlereagh Highway, Ulan Road, Wollar Road, Phillip Street, Maitland Street and Barigan Road.
Preferred site access points and road upgrades	<ul style="list-style-type: none"> All over-dimensional, AV/B-Double, medium and heavy rigid vehicles and shuttle buses would access the site via the northern site access point on Barigan Road. Light vehicles would have the option to access the site via the northern and/or southern site access 1 on Barigan Road. Upgrades to the intersection of Wollar Road and Barigan Road, and upgrades to Barigan Road between Wollar Road and the northern site access, including sealing to a width of 7 m and further widening at six defined locations.
Alternate site access point and road upgrades	<ul style="list-style-type: none"> If the preferred site access is unavailable, all vehicles would access the site via the southern site access 2 off Barigan Road and a new internal access road constructed along the Maree Road road reserve. Upgrades to the intersection of Wollar Road and Barigan Road, and upgrades to Barigan Road between Wollar Road and southern site access point, including sealing to a width of 7 m and further widening at nine defined locations, and constructing southern access option 2 (Maree Road road reserve), including a gravel seal to a width of 7 m.
Construction	<ul style="list-style-type: none"> The construction period would last for 12 to 18 months. Construction hours would be limited to Monday to Friday 7 am to 6 pm, and Saturday 8 am to 1 pm.
Proportion of site used for intermittent cropping	<ul style="list-style-type: none"> Approximately 83 hectares

Operation	<ul style="list-style-type: none"> The expected operational life of the project is approximately 30 years. However, the project may involve infrastructure upgrades or refurbishment that could extend the operational life.
Decommissioning and rehabilitation	<ul style="list-style-type: none"> The project also includes decommissioning and rehabilitation of the site at the end of the project life, which would involve removing all infrastructure from the site.
Hours of operation	<ul style="list-style-type: none"> Daily operations and maintenance would be undertaken Monday to Friday 7 am to 6 pm, and Saturday 8 am to 1 pm.
Employment	<ul style="list-style-type: none"> Up to 320 construction jobs and 5 full-time operational jobs.
Capital investment value	<ul style="list-style-type: none"> \$431 million

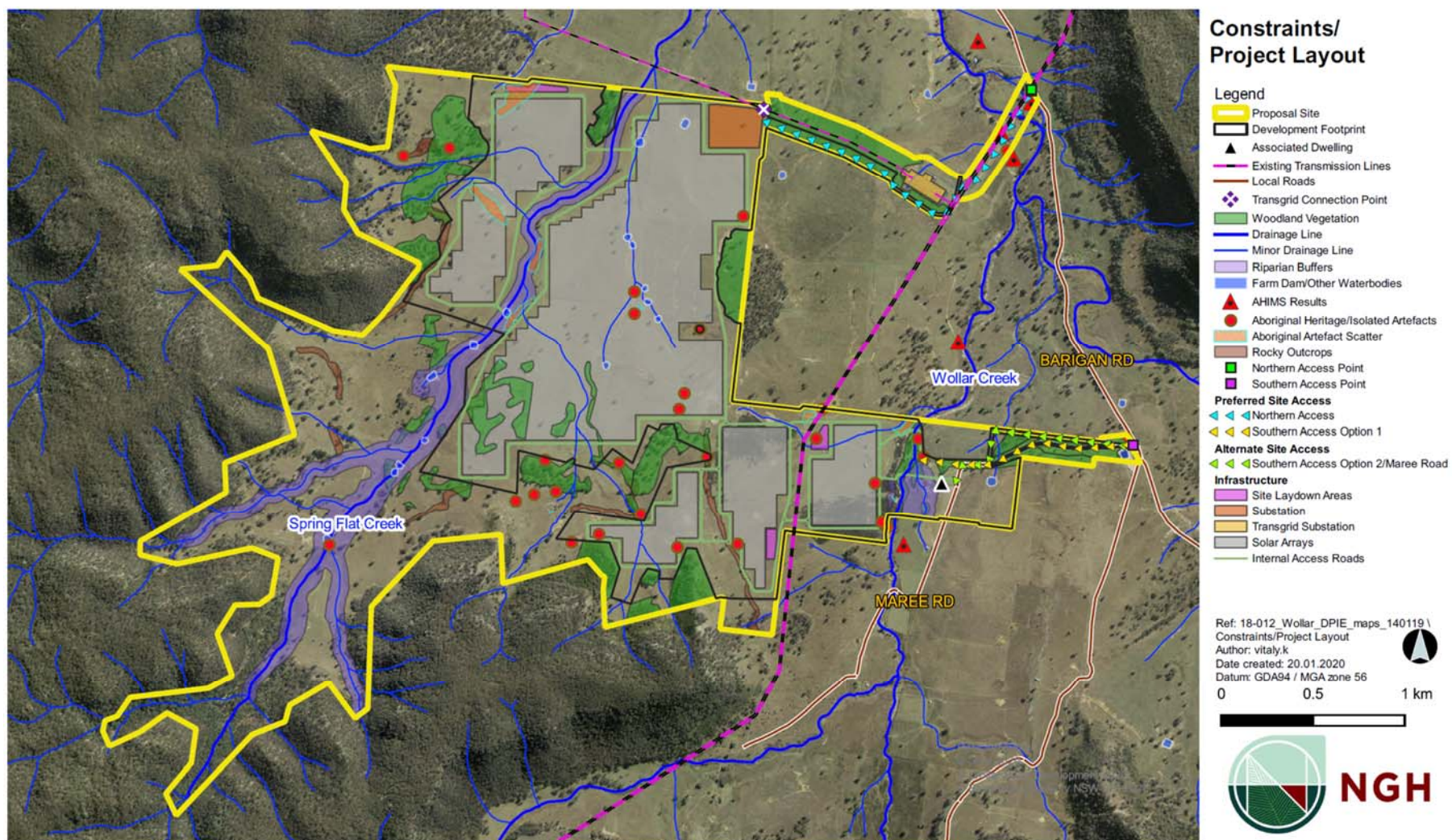


Figure 3 | Project Layout

2 Strategic context

2.1 Site and Surrounds

The project is located on an approximately 878 hectare (ha) site within the Central West and Orana region of NSW. The site is zoned RU1 – Primary Production under the *Mid-Western Regional Local Environment Plan 2012* (Mid-Western LEP) and is currently used for agricultural purposes, including grazing and intermittent cropping. Approximately 83 ha of the site would continue to be used for such purposes.

Land within the site is generally flat to gently undulating with some rocky outcrops and steep areas within the south west of site. Patches of native vegetation are scattered throughout the site and two ephemeral watercourses (Spring Flat Creek and Wollar Creek) and associated drainage lines traverse the site.

The proposed development footprint is 463 ha and was designed to avoid site constraints, including native vegetation, Aboriginal heritage items and watercourses (see **Figure 3**).

The site (878 ha) does not include any mapped Biophysical Strategic Agricultural Land. Under the *Land and Soil Capability Mapping in NSW* (OEH, 2017), all land within the development footprint (463 ha) is Class 5 (moderate – low capability land), which supports grazing and requires active management to sustain cultivation on a rotational basis.

One residence is located within the project site and is associated with the project. The closest non-associated residence is located approximately 2.8 km south of the project site. Distance, intervening topography and vegetation would provide natural screening from all non-associated residences.

The site would have direct access to the electricity network via existing transmission lines that traverse the site, as well as direct access to the local and regional road network via Barigan Road or Maree Road. TransGrid's existing Wollar Substation is located about 900 m east of the proposed development footprint.

Land surrounding the site to the west and south is Crown land that is zoned E3 Environmental Management under the LEP and comprises dense vegetation and steep terrain. Land to the north and east is zoned RU1 and is primarily used for agricultural purposes (grazing and limited cropping).

There are three existing coal mines in the area, including the Wilpinjong, Moolarben and Ulan coal mines (11 km, 21 km and 23 km north west of the site respectively) (see **Figure 1**). Existing mineral and petroleum rights also exist over the entirety of the site, being Exploration Licence (EL) 6676 (held by the Department) and Petroleum Exploration Licence (PEL) 456 (held by Hunter Gas Pty Ltd [Hunter Gas]).

2.2 Other Solar Farms

The Central West and Orana region of NSW has attracted considerable interest from solar developers given the presence of major transmission lines and existing electricity substations. The closest approved State significant development solar farm is located approximately 45 km west of the project site, being Beryl Solar Farm. The next closest approved and proposed solar farms in the region are located a significant distance from the proposed project (between 75 km and 140 km away) (see **Table 2** and **Figure 4**).

Given the distance of the Wollar Solar Farm from all approved and proposed projects in the region, there would be no significant cumulative visual or noise impacts. In addition, while the surrounding regional road network may experience an increase in traffic numbers, there would be no significant cumulative impact on the local roads along the proposed transport route from these projects, as discussed further in **section 5.3**.

Other potential cumulative impacts at a regional level relate to agricultural land and workforce accommodation.

The potential cumulative impact on agricultural land in the region is discussed further in **section 5.1**.

In regard to workforce accommodation, Beryl Solar Farm is already constructed so there would be no overlap in construction periods.

There is the potential for the construction of the project to overlap with the construction of other proposed solar farms in the region. Workforce accommodation for these solar projects would likely be sourced from the local and wider region, including neighbouring LGAs and the towns of Mudgee, Dubbo, Wellington and Gulgong, as discussed further in **section 5.4**.

Table 2 | Nearby solar farms

Project	Capacity (MW)	Status	Approximate distance from the project (km)
Beryl Solar Farm	87	Operational	45
Dunedoo Solar Farm	66	Proposed	75
Mumbil Solar Farm	140	Proposed	90
Wellington Solar Farm	180	Approved	95
Wellington North Solar Farm	300	Proposed	95
Maryvale Solar Farm	125	Approved	100
Suntop Solar Farm	170	Approved	105
Suntop 2 Solar Farm	165	Proposed	110
Gilgandra Solar Farm	50	Approved	140

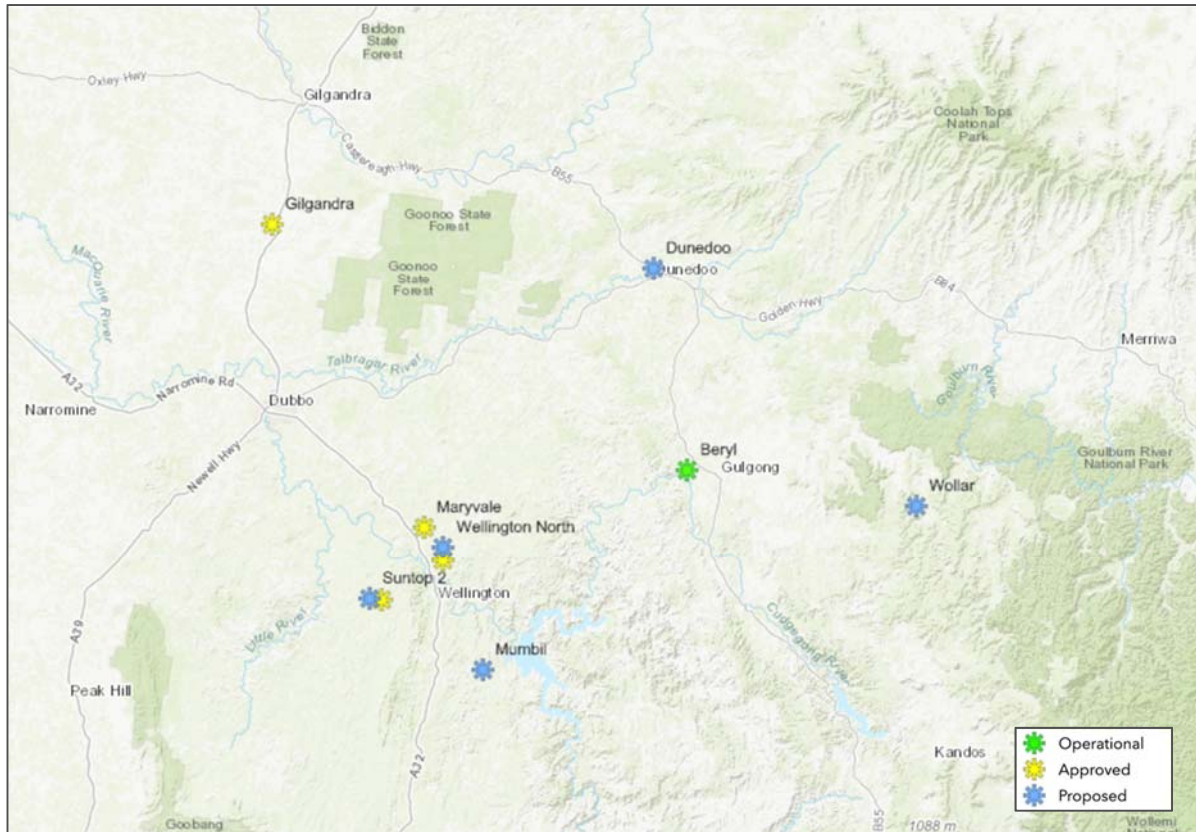


Figure 4 | Nearby Solar Farms

2.4 Other Projects

There are three existing coal mines in the area, including the Wilpinjong, Moolarben and Ulan coal mines. The Wilpinjong Extension Project commenced in September 2017 and is located about 8 km north of the proposed solar farm.

The potential cumulative impact on the compatibility of land use in the region is discussed further in **section 5.1**.

The potential cumulative impact from operation of the mines is likely to be limited to potential traffic impacts. The three mines are operational and the Wilpinjong Extension Project is an extension of the currently operating mine largely involving the same workforce (peak operational workforce increasing from around 450 to 525 persons) mobilising into a new area of mining with a limited construction phase. The Extension Project includes upgrades to Ulan- Wollar Road and this is discussed further in **section 5.3**.

The potential cumulative impact on workforce accommodation is unlikely as the mines' workforce is a long term workforce accommodated in nearby towns and is likely to be different to the construction workforce required for the solar farm and is discussed further in **section 5.4**.

2.4 Energy Context

In 2018, NSW derived approximately 17.4% of its energy from renewable sources. The rest was derived from fossil fuels, including 79% from coal and 3.1% from gas. However, there are currently no plans for the development of new coal power stations in NSW, and the development of renewable energy sources, like wind and solar farms, is experiencing rapid growth.

This is highlighted in the 2017 *Independent Review into the Future Security of the National Electricity Market* (the Finkel Review), which outlines a strategic approach to ensuring an orderly transition from traditional coal and gas fired power generation to generation with lower emissions. It notes that Australia is heading towards zero emissions in the second half of the century.

The *United Nations Framework Convention on Climate Change* has adopted the Paris Agreement, which aims to limit global warming to well below 2°C, with an aspirational goal of 1.5°C. Australia's contribution towards this target is a commitment to reduce greenhouse gas emissions by 26% to 28% below 2005 levels by 2030.

One of the key initiatives to deliver on this commitment is the Commonwealth Government's Renewable Energy Target. Under this target, more than 20% of Australia's electricity would come from renewable energy by 2020.

The *NSW Climate Change Policy Framework*, released in November 2016, sets an aspirational objective for NSW to achieve net zero emissions by 2050. The NSW Government also has a *Renewable Energy Action Plan*, which promotes the development of renewable energy in NSW.

The Department released the *Large-Scale Solar Energy Guideline* in December 2018 to provide the community, industry and regulators with guidance on the planning framework for the assessment of large-scale solar projects, and identify the key planning considerations relevant to solar energy development in NSW.

The Guideline aims to support the growth of the solar industry, whilst ensuring that impacts are adequately assessed, effective stakeholder engagement is undertaken, and that attracting investment is balanced with considering the interests of the community. WSD submitted its EIS in March 2019 and its assessment is consistent with the principles of the Guideline.

The Guideline also acknowledges that large scale solar projects could help to reduce reliance on fossil fuels, thereby contributing to reductions in air pollution and greenhouse gas emissions, whilst also supporting regional NSW through job creation and investment in communities that may not have similar opportunities from other industries.

NSW is one of the nation's leaders in large-scale solar, with nine major operational projects and nine under construction.

In March 2018, the NSW Government identified 10 potential Energy Zones across three broad regional areas, including the New England, Central West and South West regions of NSW. The identified energy zones are aimed at encouraging "investment in new electricity infrastructure and unlocking additional generation capacity in order to ensure secure and reliable energy in NSW".

The project would be located in close proximity to the Central West Energy Zone and would have access to the electrical grid at a location with available network capacity. With a capacity of 290 MW, the project would generate enough electricity to power over 108,000 homes, and is therefore consistent with both the Commonwealth's *Renewable Energy Target* and NSW's *Renewable Energy Action Plan*.

3 Statutory Context

3.1 State Significant Development

The project is classified as State significant development under Section 4.36 of the *Environmental Planning and Assessment Act 1979* (EP&A Act). This is because it triggers the criteria in Clause 20 of Schedule 1 of *State Environmental Planning Policy (State and Regional Development) 2011* (SRD SEPP), as it is development for the purpose of electricity generating works with a capital investment value of more than \$30 million.

Consequently, the Minister for Planning and Public Spaces is the consent authority for the development. However, under the Minister's delegation of 11 October 2017, the Executive Director, Energy, Resources and Compliance Assessments, may determine the development application as Council did not object, there were no objections from the general public and a political donations disclosure statement has not been made.

3.2 Amended Application

In accordance with Clause 55 of the *Environmental Planning and Assessment Regulation 2000* (EP&A Regulations), a development application can be amended at any time before the application is determined. Accordingly, WSD has sought to amend its application to include an alternate site access option and revise its proposed road upgrades.

The Department considers that it can accept WSD's amended application for the following reasons:

- the project amendments would not substantially increase the impacts of the project as a whole;
- the amended application is required to ensure there is a viable site access option;
- WSD has assessed the impacts of the amended project (see **Appendix E**);
- the Department made the additional information available online and sent it to the relevant agencies for comment; and
- no representations have been made by the community or special interest groups opposing the amended application.

The project amendments are summarised in **section 4.3** of this report.

3.3 Permissibility

The site is located wholly within land zoned RU1 Primary Production under the Mid-Western LEP, the provisions of which are discussed in **section 5.1**. The RU1 zone includes various land uses that are both permitted with and without consent. As a solar farm is not expressly listed as permitted with or without consent, it is a prohibited land use under a strict reading of the LEP. However, the LEP expressly references the *State Environmental Planning Policy (Infrastructure) 2007* (Infrastructure SEPP) and acknowledges that electricity generating works are regulated by the Infrastructure SEPP, rather than the LEP.

Under the Infrastructure SEPP, electricity generating works are permissible on any land in a prescribed rural, industrial or special use zone. Land zoned RU1 Primary Production is a prescribed rural zone pursuant to the Infrastructure SEPP. Consequently, the project is permissible with development consent.

3.4 Integrated and Other Approvals

Under Section 4.41 of the EP&A Act, a number of other approvals are integrated into the State significant development approval process, and therefore are not required to be separately obtained for the proposal.

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 proposal (e.g. approvals for any works under the *Roads Act 1993*).

The Department has consulted with the relevant government agencies 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 I**).

3.5 Commonwealth Approvals

On 3 October 2018, a delegate for the Commonwealth Minister for the Environment and Energy determined the project (EPBC 2018/8258) to be a 'controlled action' in accordance with the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) due to likely significant impacts to listed threatened species and communities (Sections 18 and 18A).

On 23 December 2019, a delegate for the Commonwealth Minister accepted WSD's request to vary the proposed action to account for additional impacts to listed threatened species and communities due to the amended application (i.e. the alternate site access point and revised road upgrades).

The assessment process under the EP&A Act has been accredited under section 87 of the EPBC Act. Accordingly, the NSW Government has undertaken the assessment on behalf of the Commonwealth and has assessed matters of national environmental significance (MNES).

The Department consulted with the Department of Agriculture, Water and the Environment (formerly Department of Environment and Energy, DAWE) in accordance with the accredited assessment process and provided draft copies of this assessment report and the recommended conditions of consent to DAWE for comment.

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 5.2**. Further information on the matters that the Commonwealth Minister must consider under the EPBC Act is provided in **Appendix G**.

3.6 Mandatory Matters for Consideration

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;
- any submissions; and
- the public interest, including the objects in the EP&A Act and the encouragement of ecologically sustainable development (ESD).

The Department has considered all of these matters in its assessment of the project, as well as WSD's consideration of environmental planning instruments in its EIS, as summarised in **section 5** of this report. The Department has considered relevant provisions of the environmental planning instruments in **Appendix H**.

4 Engagement

4.1 Department's Engagement

The Department publicly exhibited the EIS from 10 April 2019 until 7 May 2019, and advertised the exhibition in the *Mudgee Guardian*, *The Australian* and *The Australian Financial Review*, and notified adjoining landowners adjacent to the project boundary.

The Department consulted with Council and the relevant government agencies throughout the assessment. The Department also inspected the site on 29 August 2018.

The Department notified and sought comment from TransGrid and the Roads and Maritime Services (RMS) in accordance with the Infrastructure SEPP, as discussed further in **section 4.4** of this report.

4.2 WSD's Engagement

WSD undertook engagement with the surrounding community as detailed in the EIS, including newspaper advertisements, community meetings and information sessions, individual meetings with adjacent landowners and made information about the proposal available via a project newsletter and its website. WSD also undertook consultation with the Department and relevant government agencies during the assessment process.

4.3 Submissions and Submissions Report

The Department received advice from eight government agencies, including Mid-Western Regional Council. Sixteen submissions were received from the general public supporting the project and seven submissions were received from special interest groups, also supporting the project.

Full copies of the agency advice and public submissions are attached in **Appendix C**.

WSD provided a response to all matters raised in submissions on the project (see **Appendix D**). WSD has also provided additional information during the Department's assessment (see **Appendix F**).

Following the exhibition period, the Department received comments on the project from Wilpinjong Coal Pty Ltd (Wilpinjong Coal), which it considered in its assessment of the project.

4.4 Amended Application

Following further consultation with Wilpinjong Coal and Council, WSD amended its application to include:

- an alternate site access option via Maree Road (southern access option 2); and
- revised road upgrades along Barigan Road and Maree Road road reserve.

WSD provided an Amendment Report assessing all potential additional impacts associated with the amendments, and no other aspect of the project has changed (see **Appendix E**).

The Department notes that the alternate site access option via Maree Road is necessary to secure access to the proposed site. This is because the site access arrangements proposed in the EIS include the use of land owned by Wilpinjong Coal (a subsidiary of Peabody Pastoral Holdings Pty Limited), and while Wilpinjong Coal has provided landowners consent for WSD to lodge its development application, it has not guaranteed the use of its land to access the proposed solar farm.

In the event that WSD cannot secure access to this land, all project related vehicles would access the site via Maree Road (owned by Council) (see **Figure 3**).

To support the alternate site access option, and following advice from Council, WSD also revised its proposed road upgrades along Barigan Road and Maree Road.

The Department provided the Amendment Report to government agencies for review and comment and made it available on the Department's website. As the project amendment is minor in nature and only relates to the location of the site access point, the Department did not exhibit the Amendment Report.

4.5 Key Issues – Government Agencies

Mid-Western Regional Council supports the project, but requested clarifications about the proposed number of solar panels and the associated impact on project traffic, and made recommendations relating to road upgrades and maintenance, securing site access, waste management, workers accommodation, the location of ancillary buildings, voluntary contributions, decommissioning and rehabilitation. WSD addressed these matters in its Submissions Report and Amendment Report and the Department has recommended a range of conditions of consent to address Council's concerns, which are discussed in **section 5**.

The **Department's Biodiversity Conservation Division** (formerly the Office of Environment and Heritage, BCD) confirmed it accepts the outcomes of the Aboriginal Cultural Heritage Assessment (ACH) for the project. Regarding biodiversity, BCD requested that WSD correct errors in the Biodiversity Assessment Method (BAM) credit report, provide further justification for the clearance of high quality native woodland (located in patches in the south-western section of the development footprint and along Maree Road) and requested clarification of the credit requirement associated with the clearance of native vegetation listed under the EPBC Act. WSD responded to these matters in its Submissions Report and revised its BAM credit report and Biodiversity Development Assessment Report (to address these matters and to account for the project amendments) and BCD raised no further concerns. BCD advised that it has no objection to the project subject to the recommended conditions of consent. These matters are discussed further in **section 5.2**.

The **Department's Water Group** (DPIE Water) requested confirmation of reliable water sources and made a number of recommendations about matters relating to watercourse crossings, flooding and

erosion and sediment control. The **Department's Primary Industries Group** (DPIE Primary Industries) recommended that all below ground infrastructure and cabling be removed to ensure the land can be returned to agricultural uses following decommissioning and rehabilitation of the project.

The **Department's Crown Lands Group** (DPIE Crown Lands) noted that Crown land is located within the site (but outside the development footprint), and that Barigan Road (and associated upgrades) traverse sections of Crown Land. DPIE Crown Lands advised that any use, occupation or works on this land (including roads) must be authorised by it prior to the commencement of any use, occupation or works. WSD responded to these requests and recommendations in its Submissions Report, and these agencies advised that they have no objection to the project subject to the recommended conditions of consent. These matters are discussed further in **section 5**.

Roads and Maritime Services (RMS) requested additional information about project traffic, including the proposed shuttle bus service and potential interactions with school buses, and the management of driver fatigue. RMS also requested further assessment (including a road safety audit) of the Wollar Road and Barigan Road intersection and the Wollar Road bridge to determine if the increased traffic volumes associated with the project could be safely accommodated. WSD responded to these matters in its Submissions Report and a revised Traffic Impact Assessment, and RMS has advised that it has no further concerns subject to the recommended conditions of consent. These matters are discussed further in **section 5.3**.

The **Division of Resources and Geoscience** (DRG) requested that it be consulted regarding the location of any land based offsets required to retire the biodiversity credit liability for the project, which WSD has committed to do. DRG also confirmed that WSD completed adequate consultation and advised that it has no concerns subject to recommended conditions of consent.

The **Environment Protection Authority** (EPA) raised no concerns, but recommended that WSD implement measures to prevent potential impacts on air quality and water, and prepare and implement a Construction Environmental Management Plan and a Waste Management Plan.

Fire & Rescue NSW recommended fire and emergency response plan conditions, which have been incorporated into the recommended conditions of consent.

The **Rural Fire Service** (RFS) raised no concerns and confirmed that WSD's proposed mitigation measures would be appropriate and that the project could comply with the *Aims and Objectives of Planning for Bush Fire Protection 2006* (PBP).

4.6 Community Submissions

All submissions (16) received from the public supported the project. Two submissions were from residents located within 10 km of the site and the remaining 14 submissions were from residents located more than 10 km away.

Submissions generally provided the following reasons for supporting the project:

- provides a source of renewable energy;
- no land use conflict resulting from this project to the area;
- no visual or amenity issues;
- reduces carbon dioxide emissions; and
- local employment opportunities in the Wollar district.

4.7 Special Interest Groups Submissions

All submissions (7) received from special interest groups during the exhibition period supported the project, these included submissions from the following groups:

- Nature Conservation Council;
- Healthy Rivers Dubbo;
- Central West Environment Council;
- Wollar Progress Association;
- Ryde – Hunter’s Hill Flora and Fauna Preservation Society;
- Ryde Gladesville Climate Change Action Group; and
- Doctors for the Environment Australia.

All special interest groups supported the project on the basis that it would generate renewable energy which could help to reduce reliance on fossil fuel and assist in lowering greenhouse gas emissions. The majority of special interest groups also noted that the project would provide financial benefits to the local community through job creation.

Some submissions also cited the low intensity nature of the development compared to coal mining, noting that amenity impacts would be minimal during operation of the project and noting the ability to return the land for agricultural purposes after decommissioning.

Wilpinjong Coal Pty Ltd provided comments on the project that were received after the exhibition period. While it did not object to the project, it raised concerns that the project may pose a future constraint on open cut mining operations associated with exploration licence EL 6676 which overlies and surrounds the site. Wilpinjong Coal also requested clarifications about project traffic, road upgrades, road noise, the number of panels to be installed and bushfire risks, and recommended that Council seek appropriate financial contributions. WSD has addressed these matters in the Submissions Report, and the Department has considered these matters in **section 5**.

5 Assessment

The Department has undertaken a comprehensive assessment of the merits of the project. This report provides a detailed discussion of the three key issues, namely land use compatibility, biodiversity and construction traffic.

The key constraints for the project are shown in **Figure 3**. The Department has also considered the full range of potential impacts associated with the project and has included a summary of the conclusions in **section 5.4**. A list of the key documents that informed the Department's assessment is provided in **Appendix A**.

5.1 Compatibility of Proposed Land Use

Provisions of the Mid-Western LEP

The site is located wholly within the RU1 Primary Production zone under the LEP. As discussed in **section 3.2**, a solar farm is a prohibited land use under a strict reading of the LEP.

However, based on a broader reading of the LEP, and consideration of the objectives of the RU1 zone and other strategic documents for the region, the Department considers that there is no clear intention to prevent the development of a solar farm on the project site.

Firstly, the LEP expressly references the Infrastructure SEPP and acknowledges that electricity generating works are regulated by the Infrastructure SEPP, rather than the LEP. As discussed in **section 3.2**, a solar farm is permitted with consent on land zoned RU1 under the Infrastructure SEPP.

Secondly, the project is not inconsistent with the objectives of the RU1 zone, particularly in relation to:

- encouraging diversity in primary industry enterprises and systems appropriate for the area; and
- minimising fragmentation and alienation of resource lands.

While the Mid-Western LEP has traditionally relied upon mining and agriculture, the introduction of solar energy generation would contribute to a more diverse local economy, and the proposed solar farm would encourage renewable energy development which is consistent with the *Mid-Western Regional Delivery Program 2017/18-2020/21 and Operational Plan 2019/20*. The project is also consistent with the Department's *Central West and Orana Regional Plan 2036*, which identifies the development of renewable energy generation as a priority growth sector for the region.

The development would not fragment or alienate resource lands in the LGA, as the land could be easily returned to agricultural land following decommissioning as the inherent agricultural capability of the land would not be affected in the long term. Further, the project would not sterilise any underlying mineral or petroleum resources (as discussed further below).

Finally, and most importantly, Council supports the development of the project, subject to implementation of appropriate environmental mitigation measures.

Potential Impacts on Agricultural Land

The project is located within the Central West and Orana region of NSW, which has a strong and diverse agricultural sector, with over 8.9 million ha of the region being used for agriculture output.

The site (878 ha) does not include any mapped Biophysical Strategic Agricultural Land (BSAL). Under the *Land and Soil Capability Mapping in NSW* (OEH, 2017), all land within the development footprint (463 ha) is Class 5 (moderate – low capability land), which supports grazing and requires active management to sustain any cultivation on a rotational basis. As the site is currently used for grazing and intermittent cropping, the solar farm would reduce the agricultural output of the site while the solar farm remains operational.

The development footprint of the project combined with the other approved and/or operational SSD solar farms in the Central West and Orana region would be approximately 3,658 ha. However, the loss of 3,658 ha of agricultural land represents a very small fraction (0.04 %) of the 8.9 million ha of land being used for agricultural output in the Central West and Orana region¹ and would result in a negligible reduction in the overall productivity of the region.

The Department notes that during operation of the project, WSD proposes to manage the land through sheep grazing.

The inherent agricultural capability of the land would not be affected by the project due to the relatively low scale and intensity of the development. WSD proposes to return the land back to existing levels of agricultural capability and the Department has included rehabilitation objectives in the recommended conditions to maintain the productivity of the agricultural land during the construction and operation of the project, and to fully reinstate the agricultural capability of the land following decommissioning of the project, including the requirement to return the development footprint to at least Class 5 Land Capability.

Additionally, the Department has recommended strict land management conditions including the requirement to restore the ground cover of the site following construction or upgrading, maintain the ground cover with appropriate perennial species and managing weeds.

The Department notes that neither Council nor DPIE Primary Industries raised concerns that the operation of the project would compromise the long-term use of the land for agricultural purposes, subject to the removal of all project infrastructure at decommissioning, including all above and below ground infrastructure (as requested by DPIE Primary Industries).

The potential loss of a small area of cropping and grazing land in the region must be balanced against:

- the broader strategic goals of the Commonwealth and NSW governments for the development of renewable energy into the future;
- the environmental benefits of solar energy, particularly in relation to reducing greenhouse gas emissions;
- the economic benefits of solar energy in an area with good solar resources and capacity in the existing electricity infrastructure; and
- the benefits of dispatchable energy for grid stability and reliability.

¹ *Central West & Orana Agricultural Industries Final Report*, Department of Planning and Environment, January 2016.

On balance, the Department considers that the proposed solar farm represents an effective and compatible use of the land within the region.

Potential Impacts on Mining and Exploration

There are three existing coal mines in the area, including the Wilpinjong, Moolarben and Ulan coal mines. The Wilpinjong Extension Project commenced in September 2017 and is located about 8 km north of the proposed solar farm. Existing mineral and petroleum rights also exist over the entirety of the site, being EL 6676 held by the Department and PEL 456 held by Hunter Gas.

Hunter Gas has confirmed that it has no concerns about the proposal being located on this land. As detailed in **section 4.6**, Wilpinjong Coal does not object to the project, but raised concerns that the project may pose a future constraint on open cut mining operations associated with EL 6676.

While the ability to access the underlying mineral and petroleum resources would be prevented during operation of the solar farm, the Department and DRG consider that access to this resource would not be sterilised in the long term following decommissioning and rehabilitation of the project.

The Department also notes that there are no current plans to develop a mine in this area and any future application would be the subject of a comprehensive assessment of the merits of the project.

Additionally, the Department considers that any potential land use conflicts on any potential mining development on land surrounding the site could be managed through appropriate mitigation and management measures.

5.2 Biodiversity

Avoidance and Mitigation

The site is comprised of mostly cleared agricultural land, however good quality native vegetation and habitat is located along the southern and western site boundaries, and in patches that are scattered throughout the site and along Maree Road and Barigan Road (see **Figures 5 and 6**).

WSD has designed the project to avoid all areas of native woodland and habitat located along the southern and western site boundaries, and the majority of good quality native woodland (85 ha out of a 107 ha) is located in patches throughout the survey area (i.e. the development footprint plus a 200 m buffer; see **Figure 5**).

WSD also proposes a range of mitigation and management measures to address potential indirect impacts on threatened species, communities and their habitats. These include:

- fencing off areas of vegetation to delineate boundaries and protect retained vegetation;
- pre-clearance surveys and clearing protocols to identify habitat features and minimise impacts on fauna;
- salvaging and relocating habitat features (fallen timber, hollow logs);
- enforcing site speed limits to reduce impacts of vehicle strikes on threatened fauna;
- noise, dust and erosion and sediment management measures to minimise impacts on flora and fauna; and
- rehabilitation of the site to increase the areas of endemic vegetation.

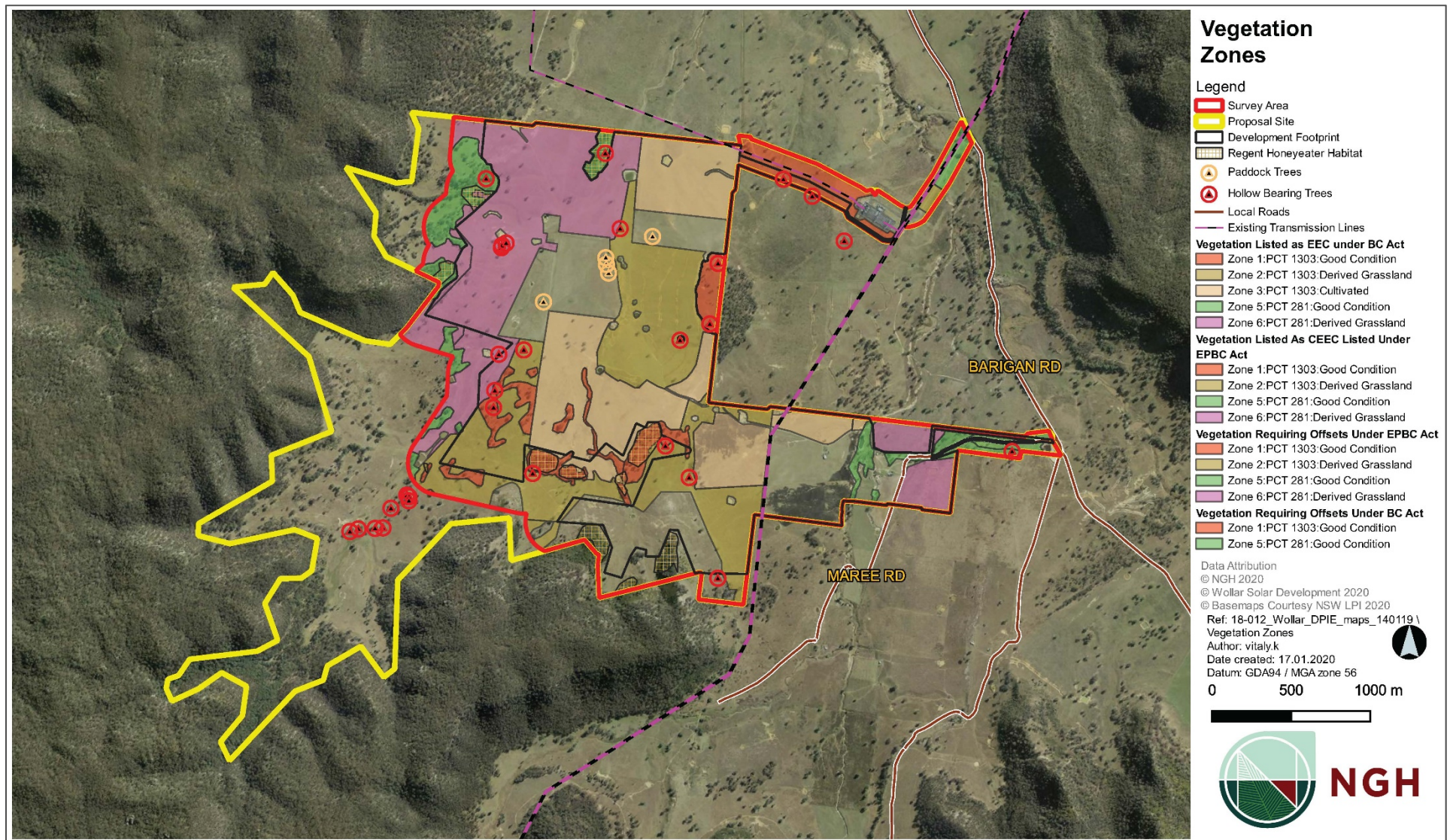


Figure 5 | Vegetation within the site

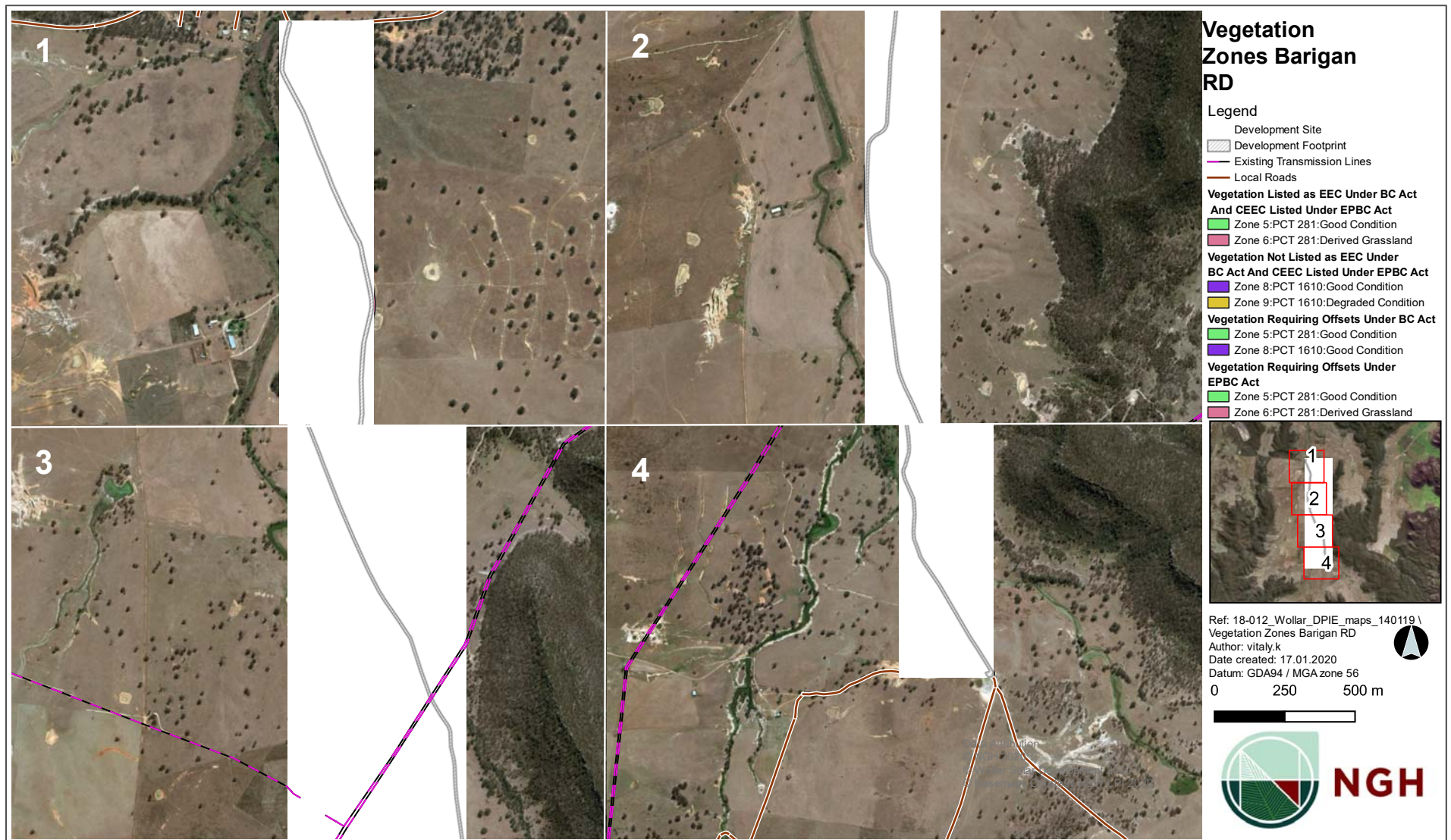


Figure 6 | Vegetation within the road reserve

Vegetation Clearing

Out of a total disturbance area of 463 ha, the project would clear 368 ha of native vegetation, comprising 25 ha of woodland, 205 ha of derived native grassland (DNG) and 138 ha of native vegetation that has been cultivated or is degraded. Five paddock trees and 64 hollow bearing trees would also be impacted. The remaining 95 ha within the site is exotic cleared land or existing infrastructure. **Table 3** provides a summary of the impacts of the project on each native vegetation type, as well as the ecosystem credit liability under the *NSW Biodiversity Offset Scheme*.

Table 3 | Native Vegetation Communities, Disturbance Area and Ecosystem Credit Liability

Native Vegetation Community		Disturbance Area (ha)			Ecosystem Credit Liability
		Total	EEC (BC Act)	CEEC (EPBC Act)	BC Act
PCT 1303: White Box-Grey Gum-Kurrajong grassy woodland on slopes of the northern Capertee Valley, Sydney Basin Bioregion, White Box-Grey Gum-Kurrajong grassy woodland on northern Capertee Valley, Sydney Basin Bioregion	Woodland	16.5	16.5	16.5	469 ¹
	DNG	102.3	102.3	102.3	0
	Cultivated/cleared	110.7	110.7	0	0
PCT 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	Woodland	8.0	8.0	8.0	2421
	DNG	102.8	102.8	102.8	0
PCT 1610: White Box-Black Cypress Pine shrubby woodland of the Western Slopes	Woodland	0.1	0	0	2
	Degraded	27.1	0	0	0
Total Woodland		24.6	24.5	24.5	713
Total DNG		205.1	205.1	205.1	0
Total Cultivated and Degraded		137.8	110.7	0	0
Total		367.5	340.3	229.6	713

Notes :¹ Includes the credit liability for the clearance of one paddock tree consistent with PCT 1303 (1 credit) and four paddock trees consistent with PCT 281 (4 credits).

As outlined in **Table 3**, about 340 ha of native vegetation within the development footprint meets the criteria for White Box Yellow Box Blakely's Red Gum Woodland and DNG Endangered Ecological Community (EEC) under the *Biodiversity Conservation Act 2016* (BC Act) (see **Figures 5 and 6**).

Despite being listed as an EEC and CEEC, the majority of the native vegetation (~ 93%) that would be cleared is in a degraded condition due to past disturbance from clearing and livestock grazing.

Approximately 24.5 ha of this is considered good quality woodland, with the residual areas being relatively degraded DNG.

Additionally, about 230 ha of native vegetation within the development footprint is also listed under the EPBC Act as White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and DNG Critically Endangered Ecological Community (Box Gum Woodland) (see **Table 3** and **Figures 5** and **6**).

Flora Impacts

No threatened flora species listed under the BC Act or EPBC Act were identified within the site. However, seasonal conditions prevented confirmation of three species potentially located along Barigan Road (see **Table 4**). These species were therefore assumed to be impacted by the proposed road upgrades and the potential impact on these species has been accounted for through the species credit calculations detailed in **Table 4**.

Threatened Fauna Species

Thirty-one threatened fauna species identified as ecosystem credit species under the BAM are predicted to occur in the area. The potential impacts on ecosystem credit species have been accounted for through the credit calculations shown in **Table 3**. This is because the vegetation communities identified in **Table 3** are predicted to provide suitable habitat for these species.

A total of three threatened fauna species were recorded during site surveys (excluding the Barigan Road reserve), being the Bent-wing Bat and Eastern Caved Bat, both listed as vulnerable under the BC Act, and the Large-eared Pied Bat, listed as vulnerable under the BC Act and EPBC Act.

WSD's assessment determined that the vegetation and habitat within the development footprint for the recorded fauna species is degraded, and that no specialised breeding, roosting or refuge habitat is present. As such, no further assessment or offsets are required.

Within the Barigan Road reserve, seasonal conditions prevented the confirmation of nine fauna species (see **Table 4**). These species were therefore assumed to be impacted by the proposed road upgrades and the potential impact on these species has been accounted for through the species credit calculations detailed in **Table 4**.

WSD's assessment concluded that vegetation and habitat was either not present, or sufficiently degraded, for all other candidate fauna species (i.e. species with the potential to require species credit offsets under the BAM).

The Department and BCD consider that all threatened species, communities and habitats, including those listed under the EPBC Act, have been correctly identified, assessed and offsets calculated correctly.

Table 4 | Species Credit Species Assumed to be Impacted

Species (Common Name)		BC Act	EPBC Act	Potential Habitat (ha)	Species Credit Liability
Flora	Austfeld's Wattle	V	-	1.2	34
	Large-leafed Monotaxis	V	-	1.2	34
	Commersonia procumbens	V	V	0.4	2
Fauna	Bush Stone-curlew	E	-	1.2	34
	Gang-gang Cockatoo	V	-	8.8	182
	Barking Owl	V	-	1.3	36
	Powerful Owl	V	-	1.3	36
	Masked Owl	V	-	1.3	36
	Squirrel Glider	V	-	1.1	34
	Large-eared Pied Bat	V	V	1.2	50
	Brush-tailed Phascogale	V	-	0.2	32
	Koala	V	V	1.2	34
	Total species credits				544

Note: V = vulnerable, E = endangered

Significance of Impacts on Threatened Species and Communities

WSD completed assessments of significance under the EPBC Act for Box Gum Woodland and three threatened species, being the Large-eared Pied Bat, Regent Honeyeater and Pink-tailed worm-lizard and assessment was not required for any other threatened species.

Assessments of significance concluded that there is likely to be a significant impact on Box Gum Woodland and that offsets would be required (see **Table 3**). However, it was concluded that there would be no significant impact on any threatened species.

The Department has undertaken a detailed consideration of Commonwealth matters in consultation with DAWE, including consideration of WSD's assessments of significance and the relevant approved conservation advice, recovery plans and threat abatement plans (TAPs) for Box Gum Woodland and DNG. The conclusions of this assessment are supported by DAWE, and a summary of this assessment is provided in **Appendix G**.

Biodiversity Offsets Summary

Under the BC Act, the impact on native vegetation and species would generate 713 ecosystem credits (including 5 credits for paddock trees) (see **Table 3**) and 544 species credits for flora and fauna species assumed to be present within the road reserve.

The final credit requirement would be retired 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 *NSW Biodiversity Offsets Scheme*.

The Department notes that WSD may pay into the offset fund or may secure land based offsets and has identified similar vegetation within the site and in the locality that could be used for these offsets.

Additional offsets would be required for clearing 205 ha Box Gum DNG listed under the EPBC Act as this vegetation does not meet the criteria for offsetting under the BC Act. The final offset credit liability would be determined separately by DAWE through the EPBC Act approval.

Recommended Conditions

The Department has recommended conditions requiring WSD to:

- avoid the disturbance of native vegetation or fauna habitat located outside the development footprint;
- retire the applicable biodiversity offset credits in accordance with the Biodiversity Offsets Scheme prior to commencing the development; and
- prepare and implement a Biodiversity Management Plan in consultation with BCD, including measures to minimise clearing and avoid unnecessary disturbance of vegetation located within the development footprint.

With these measures, the Department and BCD consider that the project is unlikely to result in a significant impact on the biodiversity values of the locality.

5.3 Transport

Traffic Volumes

The main increase in project related traffic would occur during the 12 to 18 month construction period, with a peak period of up to 9 months. The estimated peak daily movements would be 72 heavy vehicles (comprising 26 AV/B-Doubles and 46 medium and/or heavy rigid vehicles), 40 shuttle buses and 60 light vehicles per day. Additionally, there would be a total of 2 over-dimensional vehicles during construction to transport the transformers to site. As construction activities would be restricted to daytime hours, construction related vehicles would only be using the local road network during the day.

Traffic generation during operations would be negligible (i.e. up to 8 light vehicles and 7 heavy vehicles per day).

Transport Routes

Project related vehicles would access the site via four proposed transport routes depending on the vehicle type (see **Figure 7**).

All over-dimensional and AV/B-Double vehicles would access the site from the north or south via:

- Golden Highway, Ulan Road, Ulan-Wollar Road, Barigan Street, Maitland Street, Wollar Road and Barigan Road; and/or
- Castlereagh Highway, Ulan Road, Ulan-Wollar Road, Barigan Street, Maitland Street, Wollar Road and Barigan Road.

All medium and heavy rigid vehicles and shuttle buses would have the option to access the site via the above routes, or via:

- Cope Road, Ulan Road, Ulan-Wollar Road, Barigan Street, Maitland Street, Wollar Road and Barigan Road; and/or
- Castlereagh Highway, Ulan Road, Wollar Road, Phillip Street, Maitland Street and Barigan Road.

Light vehicles would access the site via any of the above routes, however, they would also have the option to use other roads as required.

With the exception of Barigan Road (unsealed gravel road 6 m to 7 m wide), Maree Road (unconstructed paper road located within the site), and a narrow and winding section of Wollar Road that passes through Munghorn Gap Nature Reserve (see **Figure 7**), all roads along the transport route are of a standard capable of accommodating project related-traffic during the peak construction period.

Consistent with advice from Council, WSD revised the proposed transport routes to ensure that over-dimensional and AV/B-Double vehicles avoid the section of Wollar Road that passes through Munghorn Gap. Council also recommended upgrades to Barigan Road and Maree Road to accommodate project traffic (discussed below).

RMS raised concerns about the potential for cumulative traffic impacts associated with the project and surrounding mines, and recommended that WSD consult with the owners of Ulan, Moolarben and Wilpinjong coals mines to ensure cumulative traffic movements are managed to minimise peak vehicle movements during construction, operation and decommissioning. The Department has included a requirement for WSD to develop and implement these measures through a Traffic Management Plan.

The Department notes that the operation of the nearby mines use rail to transport coal reducing the potential for cumulative heavy vehicle traffic impacts. In addition, the closest mining to the solar farm, the Wilpinjong Extension Project, includes an upgrade to Ulan-Wollar Road (likely to be completed by April 2020 with a further realignment in 2025) and cumulative impacts with construction of the solar farm would be addressed through the Traffic Management Plan to be prepared in consultation with the mines.

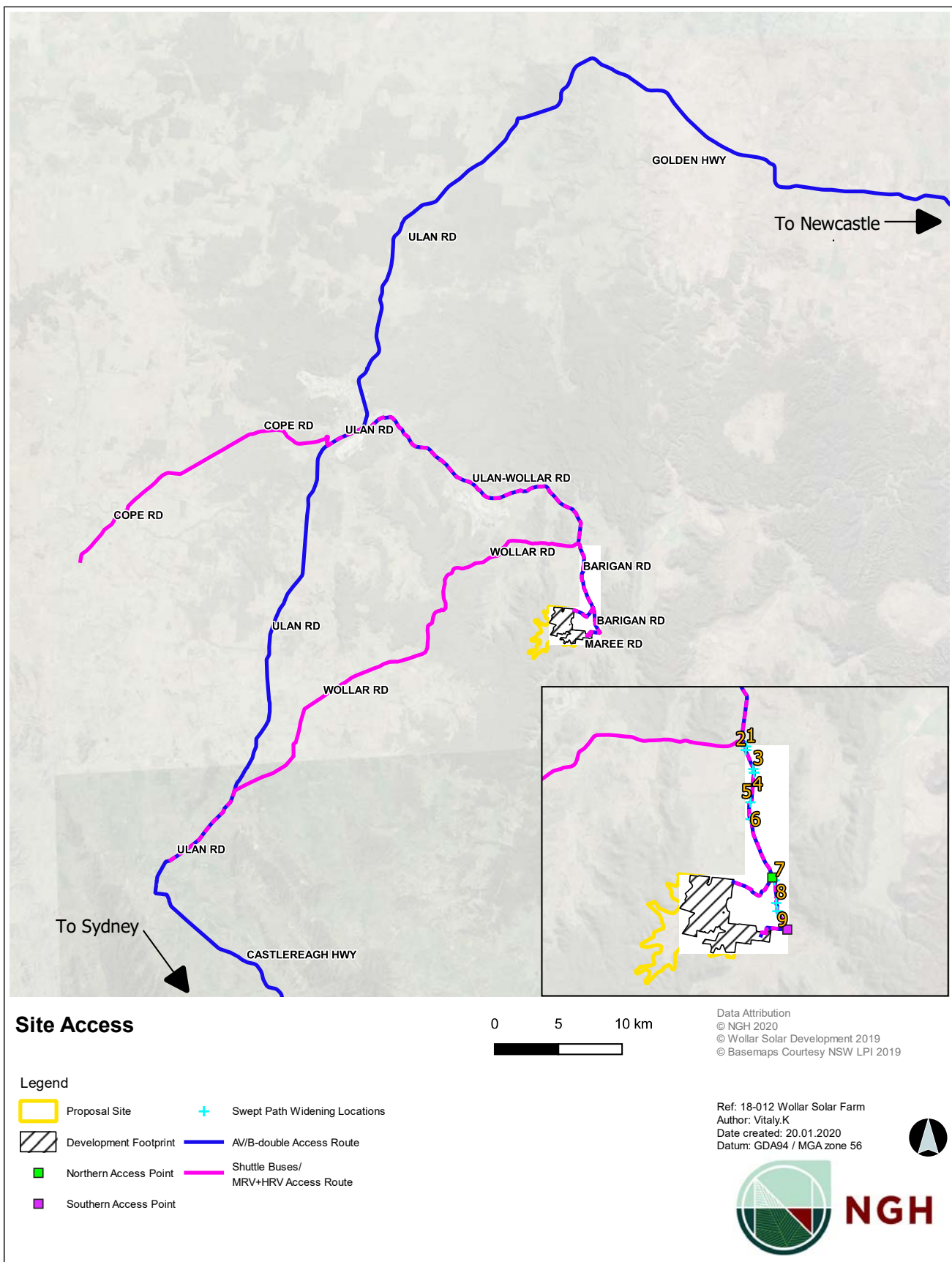


Figure 7 | Transport routes

Site Access Points

The project includes a preferred site access option and an alternate site access option (see **Figure 3**).

Preferred Site Access Option

The preferred option includes two access points off Barigan Road, being the northern and southern site access points. Over-dimensional, AV/B-Double, medium and heavy rigid vehicles and shuttle buses would use the northern site access point. Light vehicles would have the option to use the northern and/or southern site access option 1.

This is the preferred option as it would require fewer road upgrades, less vegetation clearance and the use of existing access tracks within the site. However, this option (both north and south access) requires the use of land owned by Wilpinjong Coal, and Wilpinjong Coal has not yet guaranteed access to the land (WSD holds consent to lodge the development application for the project). As such, WSD requires an alternate site access option which would only be used if WSD cannot secure access to the land associated with the preferred option.

Alternative Site Access Option

If the alternate site access option is used, all vehicles would access the site via the southern site access point on Barigan Road and would continue to the development footprint via a newly constructed access track located within the Maree Road road reserve (southern access option 2, see **Figure 3**). Maree Road is a paper road owned by Council, and Council has confirmed it has no concerns about the use of land within the road reserve.

Upgrades

The RMS and Council support the proposed transport routes, provided the required road upgrades are undertaken prior to construction to support the increased traffic during construction (see **Figure 8**). If the preferred site access option is used, these would include:

- upgrading the intersection of Wollar Road and Barigan Road, including Basic Right (BAR) turn and Basic Left (BAL) treatments (unless a Road Safety Audit undertaken in consultation with RMS determines that this upgrade is not required);
- upgrading Barigan Road between Wollar Road and the northern site access point, including widening and sealing to a width of 7 m, with additional widening at six locations to meet the curve radius requirements; and
- upgrading the northern and southern site access points of Barigan Road with a Rural Property Access Type.

If the alternate site access option is used, the following additional upgrades would be required (with the exception of the Rural Property Access Type for the northern site access point):

- upgrading Barigan Road between the northern and the southern site access points, including widening and sealing to a width of 7 m, with additional widening at three locations to meet the curve radius requirements; and
- constructing Maree Road (1.2 km) to a width of 7 m with a gravel surface from its intersection with Barigan Road.

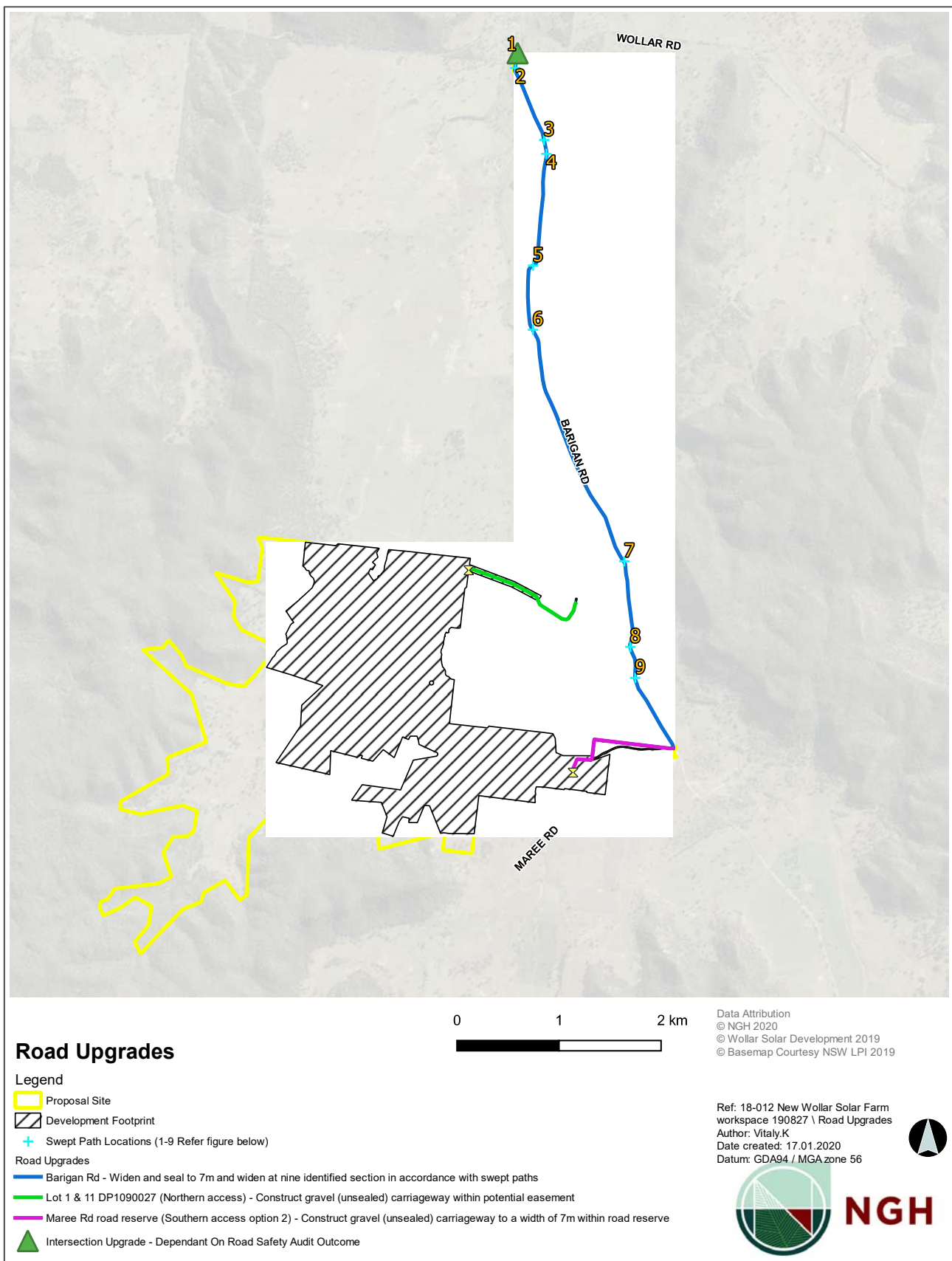


Figure 8 | Road Upgrades

Recommended Conditions

The Department has recommended conditions of consent requiring WSD to:

- undertake the relevant road upgrades prior to the commencement of construction;
- restrict the number of vehicles during construction, upgrading and decommissioning to the peak volumes identified above;
- ensure the length of vehicles (excluding over-dimensional vehicles) does not exceed 19 m; and
- prepare a Traffic Management Plan in consultation with RMS, Council, Moolarben and Wilpinjong mines, including provisions for dilapidation surveys, measures to minimise cumulative traffic with nearby coal mines, details of the measures that would be implemented to address road safety, including consideration of school buses, other motorist and road users.

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

5.4 Other Issues

The Department's consideration of other issues is summarised in **Table 5**.

Table 5 | Summary of other issues raised

Issue	Findings	Recommended Condition
Heritage	<ul style="list-style-type: none"> • Two previously recorded sites are located within the site and would be avoided. • Surveys identified 16 artefact scatters (14 of low significance, one of low-moderate significance and one of moderate significance), 30 isolated finds (all of low significance), one grinding groove, one scarred tree, one possible scarred tree and one cultural site (all of low significance). • The project has been designed to avoid 13 sites, including one artefact scatter, eight isolated finds, the grinding groove, scarred tree, possible scarred tree and cultural site. • WSD has committed to salvage and relocate all remaining sites to a suitable alternative location (i.e. 15 artefact scatters and 22 isolated finds). • Consultation with Registered Aboriginal Parties (RAPs) informed the project design and management measures and BCD confirmed the assessment was undertaken in accordance with relevant guidelines. • If Aboriginal artefacts or skeletal material are identified during construction of the project all work would cease and an unexpected finds procedure would be implemented. • There are no known items of historic value within or surrounding the site. • With these measures, the Department and BCD consider that the project would not significantly impact the heritage values of the locality. 	<ul style="list-style-type: none"> • Ensure the development does not cause any direct or indirect impacts on any items located within exclusion zones or outside the approved development footprint. • Salvage and relocate Aboriginal items to suitable alternative locations. • Prepare and implement a Heritage Management Plan in consultation with BCD and Aboriginal Stakeholders, including procedures for unexpected finds.
Visual	<ul style="list-style-type: none"> • The solar panels would be up to 4 m high, and the maintenance building, substation and battery storage facilities would be a similar size to agricultural sheds commonly utilised in the area. 	<ul style="list-style-type: none"> • Ensure that external lighting is minimised and complies with the relevant Australian Standards.

Issue	Findings	Recommended Condition
	<ul style="list-style-type: none"> The nearest non-associated dwelling is 2.8 km from the site. The project would not be visible from this dwelling and no objection was received from the landowner. The Department considers that the visual impact at all other assessed locations (i.e. roads and other dwellings) would be low or nil due to distance, topography and existing vegetation (the closest viewpoints [Barigan Road and Tichular Road] would be about 1.4 km from the development footprint). WSD would retain existing vegetation located along fence lines and road reserves (where possible) to minimise visual impacts and would be required to avoid unnecessary signage and ensure the visual appearance of infrastructure (including paint colours) minimises the visual impact on the surrounding landscape. The project would be located approximately 150 km north of Siding Spring Observatory and within the Dark Sky Region. The project would not require permanent night lighting. Notwithstanding, WSD would be required to implement measures to minimise night lighting (if required) and dust generation. The Department also notes that photovoltaic panels are designed to absorb rather than reflect sunlight, and the Department is satisfied that the project would not cause noticeable glint or glare compared to other building surfaces. The RMS raised no concerns about visual impacts, and following review of WSD's Submissions Report, Council raised no further concerns about potential visual impacts on residences and local roads. The Department considers the visual impact of the project on the surrounding residences and road users to be minimal. 	<ul style="list-style-type: none"> Prohibit any signage or advertising on the site, unless it is for safety purposes.
Noise	<ul style="list-style-type: none"> Noise generated by the proposed construction, upgrading and decommissioning activities would comply with the relevant criterion of 45 dB(A) in the EPA's Interim Construction Noise Guideline (ICNG) for standard daytime construction hours at all residences. WSD has committed to implement the noise mitigation work practices set out in the ICNG, including scheduling activities to minimise noise, using quieter equipment, positioning plant within the site to reduce noise, consulting with nearby landowners and establishing a complaint handling procedure. Road traffic noise during construction of the project would comply with the relevant criteria in the EPA's Road Noise Policy. There would be negligible noise during operation. 	<ul style="list-style-type: none"> Minimise the noise generated by construction, upgrading or decommissioning activities on site in accordance with best practice requirements outlined in the ICNG. Restrict construction hours to Monday to Friday 7 am to 6 pm, and Saturday 8 am to 1 pm unless inaudible at non-associated receivers.
Soil and Water	<ul style="list-style-type: none"> Two ephemeral watercourses and associated tributaries traverse the site, being Spring Flat Creek (fourth order) and Wollar Creek (sixth order) (see Figure 3). The project has largely been designed to avoid Spring Flat Creek and Wollar Creek, and WSD has committed to implement buffer zones consistent with the Guidelines for Controlled Activities on 	<ul style="list-style-type: none"> Design, construct and maintain the project (including security fencing) to reduce impacts on surface water and flooding at the site. Minimise any soil erosion in accordance

Issue	Findings	Recommended Condition
	<p>Waterfront Land (NRAR 2018). However, crossings of these watercourses would be required for internal access tracks, electrical cabling and security fencing. Consistent with advice from DPIE Water, WSD would design and construct crossings in accordance with the relevant guidelines.</p> <ul style="list-style-type: none"> As the other watercourse within the site (i.e. the tributaries associated with Spring Flat Creek and Wollar Creek) do not meet the definition of waterfront land under the Water Management Act 2000, solar panels and ancillary infrastructure would occur within these watercourses, and DPIE Water has raised no concerns. Any erosion and sedimentation risks associated with the project can be effectively managed using best practice construction techniques. Fuels and chemicals would be stored to prevent water pollution. The project is not expected to affect groundwater resources due to the shallow nature of any excavation on site. The project would require around 146 megalitres (ML) of water during construction (mainly for dust suppression) and around 22 ML of water annually during operation (mainly for cleaning panels). A static water supply (20,000 litres) would be established and maintained for fire protection. During construction and operation, water would be sourced from on-site farm dams in accordance with harvestable rights and/or from the Lower Goulburn River Water Source in accordance with the relevant water sharing plans and/or trucked to the site via a local water cartage service. While the final water supply source has not been confirmed, the Department considers that WSD has identified a number of viable sources. Nonetheless, the Department notes that the region is impacted by drought and has recommended a condition requiring WSD to ensure it has sufficient water for all stages of the project, and if necessary, adjust the scale of the project to match its available water supply. Subject to the recommended conditions, DPIE Water raised no further concerns and the Department considers that the project would not result in significant impacts on water resources. 	<p>with <i>OEH's Managing Urban Stormwater: Soils and Construction (Landcom, 2004) manual</i> and ensure solar the project is constructed and maintained to avoid causing erosion on site.</p> <ul style="list-style-type: none"> Unless DPIE Water agrees otherwise, ensure all works are undertaken in accordance with <i>Guidelines for Controlled Activities on Waterfront Land (NRAR, 2018)</i> and <i>Why Do Fish Need to Cross the Road? Fish Passage Requirements for Waterway Crossings (2004)</i>. Ensure there is sufficient water for all stages of the project, and if necessary, adjust the scale of the development to match its available water supply.
Flooding	<ul style="list-style-type: none"> The site is not mapped as flood prone land under the Mid-Western LEP. Flood modelling for a 1% AEP event indicates that floodwaters would generally follow the alignment of watercourses within the site. WSD would locate all infrastructure above the 1% Annual Exceedance Probability (AEP) flood level plus 500 mm freeboard to avoid impacts on flood behaviour. Heavy earthworks (construction compounds, storage areas, plant/equipment) and flood sensitive infrastructure (substations and batteries) would be located away from watercourses and flood zones. Consistent with advice from DPIE Water, perimeter fencing would be designed to avoid impacts on flood flows (i.e. fences would collapse to enable floodwaters to flow). 	<ul style="list-style-type: none"> Design, construct and maintain the project (including security fencing) to reduce impacts on surface water and flooding at the site.

Issue	Findings	Recommended Condition
	<ul style="list-style-type: none"> Subject to the recommended conditions, DPIE Water raised no further concerns and the Department considers that the project would not result in significant impacts on flood behaviour. 	
Hazards	<ul style="list-style-type: none"> The site is mapped as bushfire prone land under the Mid-Western LEP. WSD would maintain 10 m of defensible space around all project infrastructure and manage the defensible space and solar array areas as an Asset Protection Zone. WSD would also be required to comply with the RFS's Planning for Bushfire Protection 2006 and prepare a Fire Safety Study and Emergency Plan to manage the fire risk. WSD intends to manage ground cover and its associated fire hazard on site by using sheep grazing. The project would comply with the International Commission on Non-Ionizing Radiation Protection (ICNIRP) guidelines for electric, magnetic and electromagnetic fields. WSD completed a preliminary risk screening for the project in accordance with SEPP No.33 – Hazardous and Offensive Development (SEPP 33) which concluded that the storage and transport of hazardous materials for the project (including the risks associated with the battery storage facility) would not exceed the relevant risk screening thresholds and that the project is not considered to be 'potentially hazardous'. WSD would implement a range of hazard prevention and mitigation measures to manage potential risks associated with the battery storage facility, including (but not limited to): <ul style="list-style-type: none"> a 10 m Asset Protection Zone (APZ) around the battery storage facility; automated monitoring and control systems, with alarm and shutdown capability; and appropriate separation between battery containers. Subject to the recommended conditions, the Department is satisfied that risks associated with the facility would be negligible. 	<ul style="list-style-type: none"> Ensure that the development complies with the relevant asset protection requirements in the RFS's <i>Planning for Bushfire Protection 2006</i>. Prepare a Fire Safety Study and an Emergency Plan in consultation with RFS and Fire and Rescue NSW. Store and handle all liquid chemicals, fuels and oils used on-site in accordance with all relevant Australian Standards and the EPA's <i>Storing and Handling of Liquids: Environmental Protection – Participants Handbook</i>.
Decommissioning and rehabilitation	<ul style="list-style-type: none"> The Department has developed standard conditions for solar farms to cover this stage of the project life cycle, including clear decommissioning triggers and rehabilitation objectives such as removing all above and below ground infrastructure and restoring land capability to its pre-existing agricultural use. The standard conditions also allow for the upgrade of solar panels on site provided the upgrades remain within the approved development footprint of the site. With the implementation of these measures, the Department considers that the solar farm would be suitably decommissioned at the end of the project life, or within 18 months if operations cease unexpectedly, and that the site be would appropriately rehabilitated. 	<ul style="list-style-type: none"> Include rehabilitation objectives requiring the site to be rehabilitated within 18 months of cessation of operations.
Workforce accommodation	<ul style="list-style-type: none"> Up to 320 workers would be required during the construction period and WSD has committed to source workers from the local community where 	<ul style="list-style-type: none"> Prepare an Accommodation and Employment Strategy for the project in

Issue	Findings	Recommended Condition
	<p>possible. The Department is satisfied that there is sufficient accommodation in nearby towns, such as Mudgee and Gulgong.</p> <ul style="list-style-type: none"> There is the potential for construction of the project to overlap with the construction of the proposed Dunedoo Solar Farm (located 75 km northwest of the site) if it is approved. Should this occur, up to 420 construction personnel may be required in the nearby region. However, the Department considers that although possible, it is unlikely the entire construction periods of these two projects would overlap. With the exception Beryl Solar Farm, which is already constructed, all other approved and proposed solar farms in the region are located more than 90 km west of the site, and closer to the regional centre of Dubbo and the towns of Gilgandra and Wellington, which would likely provide a source of workers and accommodation options for these projects. While the Department considers there to be sufficient workers accommodation available for the project, to manage the potential cumulative impacts associated with multiple projects in the region and to encourage locally sourced workers, WSD would be required to develop an Accommodation and Employment Strategy. The Strategy would require WSD to: <ul style="list-style-type: none"> propose a strategy to ensure there is sufficient accommodation for the workforce associated with the project; consider cumulative impacts with other projects in the area (including surrounding mines); prioritise employment of local workers; and monitor and review the effectiveness of the strategy, including regular monitoring during construction. 	<p>consultation with Council, with consideration of the cumulative impacts associated with other State significant development projects in the area.</p>
Economic	<ul style="list-style-type: none"> The project would generate direct and indirect benefits to the local community, including: <ul style="list-style-type: none"> up to 320 jobs during the 12-18 month construction period and 5 jobs during operation of the project; expenditure on accommodation and businesses in the local economy by workers who would reside in the Mid-Western Regional LGA, or other adjoining LGAs; capital investment of \$431 million; the procurement of goods and services by WSD and any associated contractors; and upgrading of roads used by project related traffic and measures to repair roads if found to be damaged through dilapidation surveys. The Department has also considered the demand on public services and infrastructure in the Mid-Western Regional LGA and is satisfied that its recommended conditions address the only material impact of the project on these matters (i.e. roads). Nonetheless, at Council's request, WSD has agreed to contribute one payment of \$200,000 to Council for the purpose of local road network maintenance during the construction of the project. This contribution would be paid upfront in full when 	<ul style="list-style-type: none"> No conditions recommended.

Issue	Findings	Recommended Condition
	<p>construction commences, and administered through an agreement between WSD and Council.</p> <ul style="list-style-type: none"> • Noting the above, the Department considers that the project would provide economic benefits for the local community. 	

6 Recommended Conditions

The Department has prepared recommended conditions of consent for the project (see **Appendix I**).

The Department consulted with WSD and the relevant agencies on the conditions for the project, particularly BCD and DAWE in regard to biodiversity impacts and Council and RMS in regard to the road upgrades and maintenance requirements.

These conditions are required to:

- prevent, minimise, and/or offset adverse impacts of the project;
- ensure standards and performance measures for acceptable environmental performance;
- ensure regular monitoring and reporting; and
- provide for the ongoing environmental management of the project.

The recommended conditions use a risk-based approach that focuses on performance-based outcomes. This reflects current government policy and the fact that solar farms require relatively limited ongoing environmental management once the project has commenced operations.

In line with this approach, the Department has recommended operating conditions to minimise traffic, biodiversity, amenity, heritage, soil, water, flooding and bushfire impacts, and required the following management plans be prepared and implemented:

- Traffic Management Plan;
- Biodiversity Management Plan;
- Heritage Management Plan; and
- Emergency Plan.

The recommended conditions also require WSD to provide detailed final layout plans to the Department prior to construction.

Other key recommended conditions include:

- *roads* – requiring relevant road upgrades are undertaken prior to the commencement of construction;
- *biodiversity offsets* – retiring biodiversity offset credits in accordance with the *NSW Biodiversity Offsets Scheme*;
- *operating hours* – undertaking construction, upgrading or decommissioning activities on-site during standard construction hours, unless these activities are inaudible at non-associated receivers;
- *visual* – minimising the off-site visual and lighting impacts of the project, including the potential for any glare or reflection, and ensuring the visual appearance of all ancillary infrastructure (including paint colours) blends in as far as possible with the surrounding landscape;
- *water and flooding* – ensuring the solar panels and ancillary infrastructure (including security fencing) are designed, constructed and maintained to reduce impacts on surface water, flooding and groundwater at the site;
- *fire* - ensure that the development complies with the relevant asset protection requirements in the RFS's *Planning for Bushfire Protection 2006*; and
- *accommodation and employment* – requiring an accommodation and employment strategy be prepared and implemented to ensure there would be sufficient accommodation to house construction workers, and to prioritise the employment of local workers.

7 Evaluation

The Department has assessed the development application, EIS, submissions, Submissions Report, amended development application and additional information provided by WSD and advice received from relevant government agencies. The Department has also considered the objectives and relevant considerations under section 4.15 of the EP&A Act.

The site would have direct access to the electricity network via TransGrid transmission lines that traverse the site and direct access to the local and regional road network via Barigan Road and Maree Road. TransGrid's existing Wollar Substation is located about 900 m east of the proposed development footprint.

The project site is located in a rural area, with the nearest non-associated residence located about the 2.8 km south.

The Department considers the site to be appropriate for a solar farm as it has good solar resources and available capacity on the existing electricity network. Further, Council supports the project and there were no submissions objecting to the project, and all community submissions support the project.

Distance, intervening topography and vegetation would provide natural screening from all residences and most roads. The Department considers that there would be no significant visual impacts on the surrounding residences.

The project has been designed to largely avoid key constraints, including native vegetation, watercourses, and Aboriginal heritage sites. Any residual impacts would be relatively minor and can be managed through the recommended conditions of consent.

The project has been designed to largely avoid impacts on high quality native woodland vegetation and threatened species in the locality and all unavoidable impacts (including clearing of 25 ha of native woodland and 205 ha of derived native grassland) would be offset in accordance with Government policy, which is included as a requirement in the recommended conditions.

WSD revised its proposed road upgrades following advice from Council, and this has led to better road safety outcomes.

Given the distance of the project from other approved and proposed projects in the region, there would be minimal localised cumulative impacts, including no visual or noise impacts and no cumulative impact on local roads along the project's transport routes.

Both the Department and Council consider a solar farm development to be a suitable land use for the site. The project would not result in any significant reduction in the overall agricultural productivity of the region. Additionally, WSD would manage ground cover within the site through sheep grazing, the site could be returned to agricultural uses after the project is decommissioned and the inherent agricultural capability of the land would not be affected in the longer term.

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. WSD has reviewed the conditions and does not object to them.

Importantly, the project would assist in transitioning the electricity sector from coal and gas-fired power stations to low emissions sources. It would generate over 640,000 MWh of clean electricity annually, which is enough to power over 108,000 homes and save over 614,000 tonnes of greenhouse gas

emissions per year. It is therefore consistent with the goals of the Commonwealth's *Renewable Energy Target* and NSW's *Renewable Energy Action Plan*.

Further, the project includes an energy storage facility, with a capacity of 30 MW/30 MWh, that would enable the project to store solar energy for dispatch to the grid outside of daylight hours and / or during periods of peak demand, which has the potential to contribute to increased grid stability and energy security.

The Department considers that the project achieves an appropriate balance between maximising the efficiency of the solar resource development and minimising the potential impacts on surrounding land users and the environment. The project would also stimulate economic investment in renewable energy and provide flow-on benefits to the local community, through job creation and capital investment.

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 I**).

8 Recommendation

It is recommended that the Executive Director, as delegate of the Minister for Planning and Public Spaces:

- **considers** the findings and recommendations of this report;
- **accepts** and **adopts** all of the findings and recommendations in this report as the reasons for making the decision to grant consent to the application;
- **agrees** with the key reasons for approval listed in the notice of decision;
- **grants consent** to the application in respect of the Wollar Solar Farm (SSD 9254); and
- **signs** the attached development consent and recommended conditions of consent (see **Appendix I**).

Recommended by:



May Patterson
Team Leader
Energy Assessments

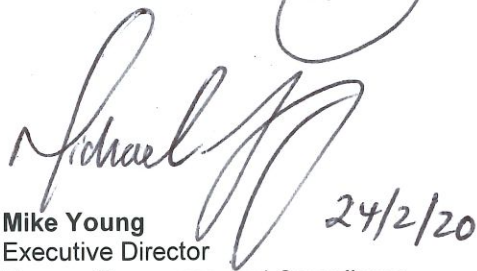
Recommended by:



Nicole Brewer
Director
Energy Assessments

9 Determination

The recommendation is **Adopted / Not adopted** by:


24/2/20

Mike Young
Executive Director
Energy, Resources and Compliance

Appendices

Appendix A – List of Documents

Wollar Solar Farm Environmental Impact Statement, ngh environmental, March 2019

Wollar Solar Farm Response to Submissions, ngh environmental, June 2019

Wollar Solar Farm Amendment Report, ngh environmental, October 2019

Email from Wollar Solar Development to Mid-Western Regional Council titled Voluntary Contribution from Wollar Solar Development Ptd Ltd for local road network maintenance, 11 October 2019

Wollar Solar Farm Additional information memorandum, ngh environmental, 22 January 2020

Appendix B – Environmental Impact Statement

See the Department's website at:

<https://www.planningportal.nsw.gov.au/major-projects/project/9831>

Appendix C – Submissions

See the Department's website at:

<https://www.planningportal.nsw.gov.au/major-projects/project/9831>

Appendix D – Submissions Report

See the Department's website at:

<https://www.planningportal.nsw.gov.au/major-projects/project/9831>

Appendix E – Amendment Report

See the Department's website at:

<https://www.planningportal.nsw.gov.au/major-projects/project/9831>

Appendix F – Additional Information

See the Department's website at:

<https://www.planningportal.nsw.gov.au/major-projects/project/9831>

Appendix G – Consideration of Commonwealth Matters

In accordance with the accredited assessment process under section 87 of the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act), the Department provides the following additional information required by the Commonwealth Minister, in deciding whether or not to approve a proposal under the EPBC Act

The Department's assessment has been prepared based on the assessment contained in the Wollar Solar Farm Environmental Impact Statement (EIS), Submissions Report, Amendment Report and additional information provided during the assessment process, public submissions, and advice provided by the Department's Biodiversity Conservation Division (BCD), other NSW government agencies and the Commonwealth Department of Agriculture, Water and Environment (DAWE).

This Appendix is supplementary to, and should be read in conjunction with, the assessment included in **section 5.2** of this assessment report which includes the Department's consideration of impacts to listed threatened species and communities, and mitigation and offsetting measures for threatened species and communities, including for Matters of National Environmental Significance (MNES).

G1. Impacts on EPBC Listed Species and Communities

Impacts on threatened ecological communities

The Commonwealth referral decision was based on there being likely significant impacts to White Box – Yellow Box – Blakely's Red Gum Grassy Woodland and Derived Native Grassland (DNG) Critically Endangered Ecological Community (Box Gum Woodland). The location and extent of EPBC Box Gum Woodland within the proposed disturbance area is detailed in **section 5.2** and shown in **Figures 5** and **6** of this report.

Approximately 537 ha of Box Gum Woodland occurs within the study area, of which 230 ha would be directly impacted. Approximately 24.5 ha of this is considered good diversity structural woodland, with the residual areas being relatively degraded DNG. The Department notes that Wollar Solar Development Pty Ltd (WSD) revised the development footprint to exclude as much of the good quality Box Gum Woodland as possible.

Although additional areas of Box Gum Woodland occur within the Wollar Valley, many of these areas are fragmented and subject to degradation from invasion of exotic flora and other land use practices. All areas of Box Gum Woodland which meet the minimum condition criteria are considered critical to the survival of this ecological community.

An assessment of significance was completed for Box Gum Woodland (refer to Appendix E of the updated *Biodiversity Development Assessment Report, October 2019* [BDAR]) which concluded that the loss of 230 ha of Box Gum Woodland is likely to be a significant impact on this community and that offsets would be required.

Further detailed consideration of the impact on this threatened ecological community, including proposed mitigation, management and offsetting requirements, is considered in more detail below and in section 5.2 of this report.

Impacts to threatened species

The Department has considered the impacts on the 23 EPBC listed species identified in the referral advice, being:

- Critically Endangered – Regent Honeyeater (*Anthochaera phrygia*), Swift Parrot (*Lathamus discolor*), *Euphrasia arguta* and A Leek Orchid (*Prasophyllum* sp. *Wybong*);
- Endangered – *Tylophora linearis*, Hoary Sunray (*Leucochrysum albicans* var. *tricolor*) and Small Purple-pea (*Swainsona recta*); and
- Vulnerable – Painted Honeyeater (*Grantiella picta*), Mallefowl (*Leipoa ocellate*), Superb Parrot (*Polytelis swainsonii*), Striped Legless Lizard (*Delma impar*), Grey-headed Flying-fox (*Pteropus poliocephalus*), Koala (*Phascolarctos cinereus*), Large-eared Pied Bat (*Chalinolobus dwyeri*), Pink-tailed Worm-lizard (*Aprasia parapulchella*), *Commersonia procumbens*, *Prostanthera discolor*, Mount Vincent Mintbrush (*Prostanthera stricta*), Bluegrass (*Dichanthium setosum*), *Homoranthus darwinoides*, *Ozothamnus tessellatus*, *Philothea ericifolia* and Austral Toadflax (*Thesium australe*).

In addition to these species, the Department has considered the potential impacts on two EPBC listed species identified by WSD, being the Spotted-tailed Quoll (*Dasyurus maculatus*) (endangered) and Brush-tailed Rock-wallaby (*Petrogale penicillata*) (vulnerable).

Six EPBC species are also predicted to use habitat on site based on BCD mapping, being the Regent Honeyeater, Spotted-tailed Quoll, Painted Honeyeater, Swift Parrot, Koala and Grey-headed Flying-fox. Potential impacts on these species have been accounted for through the ecosystem species credits (see **section 5.2** of this report).

WSD undertook assessments of significance for the Large-eared Pied Bat, Pink-tailed Worm-lizard and Regent Honeyeater (refer to Appendix E of the updated BDAR). The Department and BCD accept that all other threatened species were found to have no to very low likelihood of occurring onsite or being impacted, and no further assessment was required (see Appendix D of the updated BDAR). Habitat within the study area is not considered to be critical to the survival of the Koala (see Table 7-6 of the Updated BDAR).

Threatened species assessments of significance

Regarding the Large-eared Pied Bat, which was the only EPBC threatened species recorded during site surveys (approximately 400 m south of the development footprint), the project would not directly impact suitable roosting, foraging or breeding habit. Mitigation measures have been recommended to prevent the spread of weeds and diseases that could impact this species (detailed in **section 5.2** of this report). The project would not interfere with any of the objectives of the National Recovery Plan for the Large-eared Pied Bat. Following consideration of impacts on the Large-eared Pied Bat in Appendix D of the updated BDAR, the Department accepts that impacts to this species would be negligible and would not require further mitigation or offsetting. Assumed impacts associated with the Barigan Road upgrades are discussed below.

Regarding the Pink-tailed Worm-lizard, the project would clear 0.1 ha of suitable habitat (0.8 ha would be avoided). The quality of potential habitat is low, the area of habitat to be removed is relatively small and this species was not recorded during site surveys. With the implementation of the recommended mitigation measures (detailed in **section 5.2** of this report), the proposal would not lead to a long-term decrease in the size of an important population of this species. Following consideration of impacts on

the Pink-tailed Worm-lizard in Appendix D of the updated BDAR, the Department accepts that impacts to this species would be negligible and would not require further mitigation or offsetting.

Regarding the Regent Honeyeater, WSD designed the project to avoid critical habitat for this species (see **Figure 5** of this report) and this species was not recorded during site surveys. Approximately 24.6 ha of non-optimal potential habitat for the Regent Honeyeater would be cleared by the project. However, the impacted areas comprise isolated woodland patches or paddock trees with low to moderate canopy cover, lacking complex vegetative structure, and subject to regular occurrence of aggressive native species. Better quality vegetation occurs on the lower slopes of the ridgelines surrounding the site. Following consideration of impacts on the Regent Honeyeater in Appendix D of the updated BDAR, the Department accepts that impacts to this species would be negligible and would not require further mitigation or offsetting.

The Department also notes that while there is unlikely to be a significant impact on the Regent Honeyeater, under the BAM it is an ecosystem credit species (i.e. a species predicted to occur due to the presence a specific vegetation type) and the proposed offsets (713 ecosystem credits) would provide sufficient credits to offset the impact on this species.

Assumed impacts associated with the Barigan Road upgrades

As detailed in **section 5.2** of this report, seasonal conditions prevented the confirmation of one EPBC flora species listed as vulnerable (*Commersonia procumbens*) and two EPBC fauna species listed as vulnerable (Large-eared Pied Bat and Koala). As such, WSD has assumed that the small area of potential habitat for these species would be cleared. **Table 4** of this report details the area of habitat assumed to be cleared and the required species credit offsets required under the BAM. Given the small amount of potential habitat proposed to be cleared, the presence of suitable alternative habitat in the area and the proposed offsets, the Department considers that there would be no significant impact on these species.

G.2 Requirements for Decisions about Threatened Species and Communities

In accordance with Section 139 of the EPBC Act, in deciding whether or not to approve, for the purposes of subsection of Section 18 or Section 18A of the EPBC Act, the taking of an action and what conditions to attach to such an approval, the Commonwealth Minister must not act inconsistently with certain international environmental obligations, Recovery Plans or Threat Abatement Plans. The Commonwealth Minister must also have regard to relevant approved conservation advices.

Australia's International Obligations

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 communities, 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.

Australia's obligations under the *Convention on Conservation of Nature in the South Pacific* (Apia Convention) include encouraging the creation of protected areas which, together with existing protected areas, would safeguard representative samples of the natural ecosystems occurring therein (with particular attention being given to endangered species), as well as superlative scenery, striking geological formations and regions. Additional obligations include using their best endeavours to protect such fauna and flora (with special attention being given to migratory species) so as to safeguard them from unwise exploitation and other threats that may lead to their extinction. The Apia Convention was suspended on 13 September 2006.

Approved Conservation Advice and National Recovery Plans

The approved conservation advice and national recovery plans relevant to this project are discussed below and are available at <http://www.environment.gov.au/cgi-bin/sprat/public/conservationadvice.pl>

Approved national recovery plans under the EPBC Act for threatened species that would potentially be significantly impacted are available for Box Gum Woodland.

The Department has considered the approved national recovery plan under the EPBC Act for Box Gum Woodland in assessing the impacts of the project, and notes that its key objective is to achieve no net loss in the extent and condition of Box Gum Woodland. The Department notes that there is no approved conservation advice for Box Gum Woodland that requires consideration under the EPBC Act.

While the project would clear 229.6 ha of Box Gum Woodland (24.5 ha woodland and 205.1 ha DNG) listed under the EPBC Act, WSD is proposing offsets in accordance with the NSW *Biodiversity Offsets Scheme* (see **section 5.2** of this report) by either paying into the offset fund or securing land based offsets. This would require detailed management actions and monitoring programs to improve the condition of Box Gum Woodland within the offset areas.

In accordance with the BAM, the Department notes that the low-quality Box Gum Woodland would not be offset under the BAM (see **section 5.2** of this report). The final offset credit liability would be determined separately by DAWE through the EPBC Act approval.

The Department considers that with the proposed site mitigation and offset measures (see **section 5.2** of this report), the project would not be inconsistent with the objectives of the national recovery plan. Key actions of the national recovery plan, including to the EPBC Act approval monitoring, would also be implemented as part of the Biodiversity Management Plan.

Key mitigation measures would include:

- fencing off areas of vegetation to delineate boundaries and protect retained vegetation;
- using a method of clearing that avoids damage to retained native vegetation and reduces soil disturbance (i.e. vegetation removal with chainsaws rather than heavy machinery);
- salvaging and relocating habitat features (fallen timber, hollow logs);
- protocols to prevent the spread of weeds or pathogens between infected areas and uninfected areas;
- staff training and site briefing to communicate environmental features to be protected and
- measures to be implemented; and
- sediment controls adjacent to waterways to prevent impacts downstream.

The Department recommends that DAWE attach Conditions 10, 11 and 12 of Schedule 3 of the recommended conditions of consent (see **Appendix I**) to the EPBC Act approval.

Threat Abatement Plans

The Threat Abatement Plans relevant to this project are discussed below and are available at <http://www.environment.gov.au/biodiversity/threatened/threat-abatement-plans/approved>

Threat Abatement Plan for disease in natural ecosystems caused by Phytophthora cinnamomi (relevant to Box Gum Woodland)

Phytophthora cinnamomi (*P. cinnamomi*) is a microscopic soil-borne organism (i.e. pathogen) that has the ability to cause plant disease and death by interfering with the movement of water and nutrients to plants. It can be spread in water, soil or plant material that contains the pathogen, and dispersal is favoured by moist or wet conditions. It can be carried in both overland and subsurface water flow and by water moving infested soil or organic material. Native and feral animals have been implicated in spreading *P. cinnamomi*, particularly where there are digging behaviours (e.g. pigs, rabbits). Humans, however, have the capacity to disturb and transport more soil than any other vector.

Box Gum Woodland is identified as an ecological community that may be affected by *P. cinnamomi*.

That Department notes that construction related activities have the potential to introduce or spread the pathogen through the movement of vehicles, the use of construction equipment/tools for undertaking excavation work, footwear and the introduction of infected soil or building materials to uninfected areas. The threat abatement plan for managing the impacts of *P. cinnamomi* identifies actions to minimise its spread to uninfected sites and mitigate impacts at infected sites.

The Department has recommended that actions to avoid and mitigate the spread of this pathogen are implemented as part of the Biodiversity Management Plan and/or Biodiversity Stewardship Agreement. Subject to this recommended condition, the Department considers approval of the project would not be inconsistent with the threat abatement plan for disease in natural ecosystems caused by *P. cinnamomi*.

Threat Abatement Plan for predation, habitat degradation, competition and disease transmission by feral pigs (relevant to Box Gum Woodland)

Feral pigs impact on native flora and fauna due to their presence, movement, rooting, wallowing, trampling, tusking/rubbing trees and consumption of water, animals, plants and soil organisms. Direct impacts from feral pigs include predation, habitat loss and degradation, competition and disease transmission, which can impact on native flora and fauna.

Measures to control feral animals are recommended in the conditions which would be implemented as part of the Biodiversity Management Plan and/or Biodiversity Stewardship Agreement for the site and potential offset areas. Subject to this recommended condition, the Department considers the approval of the project would not be inconsistent with the threat abatement plan for predation, habitat degradation, competition and disease transmission by feral pigs.

Threat Abatement Plan for competition and land degradation by rabbits (relevant to Box Gum Woodland)

Rabbits have direct impacts on native flora and fauna by grazing on native vegetation and preventing regeneration, and by competing with native fauna for habitat and food. Rabbits also have indirect and secondary impacts, such as supporting populations of introduced predators by providing a food source, and denuding vegetation exposing fauna species to increased predation. Their behaviour, including digging and browsing, also leads to a loss of vegetation cover and consequent slope instability and soil erosion, which further degrades fauna habitat.

Measures to control feral animals are recommended in the conditions which would be implemented as part of the Biodiversity Management Plan and/or Biodiversity Stewardship Agreement for the site and potential offset areas. Subject to this recommended condition, the Department considers the approval of the project would not be inconsistent with the threat abatement plan for land degradation by rabbits.

Threat Abatement Plan for competition and land degradation by unmanaged goats (relevant to Box Gum Woodland)

Goats affect native flora by grazing on native vegetation and can result in overgrazing. Grazing by goats can prevent regeneration of native flora, cause erosion through overgrazing, foul waterholes and introduce weeds, through ingestion of seeds, which they can deposit in their dung. Goats also compete with native animals for food and shelter.

Measures to control feral animals are recommended in the conditions which would be implemented as part of the Biodiversity Management Plan and/or Biodiversity Stewardship Agreement for the site and potential offset areas. Subject to this recommended condition, the Department considers the approval of the project would not be inconsistent with the threat abatement plan for land degradation by unmanaged goats.

Threat Abatement Plan for the biological effects, including lethal toxic ingestion, caused by cane toads (relevant to Box Gum Woodland)

While cane toads have the potential to colonise new habitats created by the construction of sediment and detention basins, this species is not known to occur in the region, and it is therefore unlikely that disturbance as a result of the project would lead to the presence of cane toads

G.3 Requirements for Decisions about World Heritage Properties

The Commonwealth determined that the project is not a controlled action for the controlling provision of World Heritage (Section 12 and Section 15A of the EPBC Act) and therefore further consideration is not required.

G.4 Requirements for Decisions about National Heritage Places

The Commonwealth determined that the project is not a controlled action for the controlling provision of National Heritage (Section 15B and Section 15C of the EPBC Act) and therefore further consideration is not required.

G.5 Additional EPBC Act Considerations

Table G1 contains the additional mandatory considerations, factors to be taken into account and factors to have regard to under the EPBC Act additional to those already discussed.

Table G1: Additional considerations for the Commonwealth Minister under the EPBC Act

<i>EPBC Act section</i>	<i>Considerations</i>	<i>Conclusion</i>
<i>Mandatory considerations</i>		
136(1)(b)	Social and economic matters are discussed in section 2.1 and 5.4 of this report.	<p>The Department considers that the proposed development would result in a range of benefits for the local and regional economy and is of public benefit, including the provision of 320 full time equivalent jobs during construction and 5 during operations.</p> <p>Any impacts on the local community residing in the area would largely be restricted to the construction period, and have been considered throughout the assessment of the development, with mitigation measures proposed if necessary (including the requirements to implement road upgrades, prepare a implement an Accommodation and Employment Strategy and minimise potential amenity impacts (visual, noise, dust).</p> <p>The Department also notes that the closest non-associated residence is 2.8 km away from the proposed site.</p>
<i>Factors to be taken into account</i>		
3A, 391(2)	<p>Principles of ecologically sustainable development (ESD), including the precautionary principle, have been taking into account, in particular:</p> <ul style="list-style-type: none"> 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 	<p>The Department considers that the project,</p> <p>if undertaken in accordance with the recommended conditions of consent, would be consistent with the principles of ESD.</p>

EPBC Act section	Considerations	Conclusion
	<p>certainty related to the potential impacts of the project;</p> <ul style="list-style-type: none"> • 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 Applicant to mitigate the environmental impacts of the project. 	
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.
Factors to have regard to		
176(5)	Bioregional plans	There is no approved bioregional plan related to the activity.
Considerations on deciding on conditions		
134(4)	<p>Must consider:</p> <ul style="list-style-type: none"> • 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 	<p>All project related documentation is available from the Department's website www.planningportal.nsw.gov.au</p> <p>The Department considers that the conditions at Appendix I are a cost effective means of achieving their purpose. The conditions are based on the material provided by the Applicant that was prepared in consultation with</p>

EPBC Act section	Considerations	Conclusion
	taking the action to achieve the object of the condition.	the Department, BCD, and other government agencies.

G.6 Conclusions on Controlling Provisions

For the reasons set out in Section 5.2 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 WSD's EIS, Amendment Report and the recommended conditions of consent in **Appendix I**.

G.7 Other Protected Matters

The Commonwealth DAWE determined that other matters under the EPBC Act are not controlling provisions with respect to the proposed action. These include listed World Heritage, National Heritage, migratory species, Ramsar wetlands, Commonwealth marine environment, Commonwealth land, Commonwealth action, nuclear action, Great Barrier Reef Marine Park, Commonwealth Heritage places overseas and a water resource, in relation to coal seam gas development and large coal mining development.

Appendix H – Statutory Considerations

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 4.15(1) of the EP&A Act, including applicable environmental planning instruments and regulations.

The Department has considered all of these matters in its assessment of the project and has provided a summary of this assessment below.

Aspect	Summary
Objects of the EP&A Act	<p>The objects of most relevance to the Minister's decision on whether or not to approve the project are found in Section 1.3(a), (b), (c), (e) and (f) of the EP&A Act.</p> <p>The Department is satisfied that 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:</p> <ul style="list-style-type: none">• is a permissible land use on the subject land;• is located in a logical location for efficient solar energy 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• is consistent with the goals of the <i>Renewable Energy Action Plan</i> and would assist in meeting Australia's renewable energy targets whilst reducing greenhouse gas emissions. <p>The Department has considered the encouragement of ESD (Object 1.3(b)) in its assessment of the project. This assessment integrates all significant socio-economic and environmental considerations and seeks to avoid any potential serious or irreversible environmental damage, based on an assessment of risk-weighted consequences.</p> <p>In addition, the Department considers that appropriately designed SSD solar development, in itself, is consistent with many of the principles of ESD. WSD 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.</p> <p>Consideration of environmental protection (Object 1.3(e)) is provided in section 5.2 of this report. Following its consideration, 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</p>

Aspect	Summary
	<p>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.</p> <p>Consideration of the sustainable management of built and cultural heritage (Object 1.3(f)) is provided in section 5.4 of this report. Following its consideration, the Department considers the project would not significantly impact the built or cultural heritage of the locality.</p>
State significant development	<p>Under Section 4.36 of the EP&A Act the project is considered a State significant development.</p> <p>The Minister for Planning and Public Spaces is the consent authority for the development.</p> <p>Under the Minister's delegation of 11 October 2017, the Executive Director, Energy, Resources and Compliance, may determine the project.</p>
Environmental Planning Instruments	<p>The <i>Mid-Western Regional Local Environment Plan 2012</i> applies and is discussed in sections 2.1, 3.3, 5.1 and 5.4 of this report, particularly regarding permissibility, land use zoning, bushfire and contributions.</p> <p>The project is permissible under the Infrastructure SEPP. In accordance with the Infrastructure SEPP, the Department has given written notice of the project to TransGrid and RMS.</p> <p>WSD completed a preliminary risk screening and preliminary hazard analysis in accordance with <i>SEPP No. 33 – Hazardous and Offensive Development</i>. The Department's consideration of this analysis is discussed in section 5.4.</p> <p>The Department has considered the provisions of the <i>SEPP (Primary Production and Rural Development) 2019</i>. Of relevance to the project, the SEPP aims to facilitate the orderly economic use and development of lands for primary production, to reduce land use conflict and sterilisation of rural land and to identify State significant agricultural land. While the location of State significant agricultural land has not been finalised, the Department has considered all of these matters in section 5.1 of this report.</p> <p>The Department has considered the provisions of <i>SEPP No. 55 – Remediation of Land</i>. A preliminary assessment of the land found no contaminated land within the project site, and the Department is satisfied the site is suitable for the development.</p> <p>Mid-Western Regional Council is listed under <i>SEPP No. 44 – Koala Habitat Protection (SEPP 44)</i>. WSD's assessment concluded that the vegetation within the site is not considered potential Koala habitat, the Department has considered this in section 5.2 of this report.</p>

Appendix I – Recommended Consent

See the Department's website at:

<https://www.planningportal.nsw.gov.au/major-projects/project/9831>