



Response to Submissions

AVONLIE SOLAR FARM



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CONTENTS

1	INTRODUCTION.....	2
1.1	BACKGROUND	2
1.2	PURPOSE OF THIS REPORT	2
1.3	PROPOSAL SUMMARY.....	2
1.4	UPDATED DESIGN.....	4
1.5	EXHIBITION PERIOD AND LOCATION.....	10
1.6	PROJECT BENEFITS	10
1.7	PROJECT JUSTIFICATION.....	11
2	CONSIDERATION OF SUBMISSIONS	12
2.1	RESPONSES RECEIVED	12
2.2	PROPONENT’S RESPONSE TO GOVERNMENT AGENCY SUBMISSIONS	12
2.3	CUMULATIVE IMPACTS	26
3	UPDATED MITIGATION MEASURES	28
REFERENCES A-I		
APPENDIX A	UPDDATED DESIGN.....	A-II
APPENDIX B	BIODIVERSITY DEVELOPMENT ASSESSMENT REPORT	B-III
APPENDIX C	ADDENDUM ABORIGINAL CULTURAL HERITAGE ASSESSMENT REPORT.....	C-IV
APPENDIX D	SUBMISSIONS.....	D-V
APPENDIX E	ADDITIONAL INFORMATION	E-VI
APPENDIX F	ROAD DESIGN UPGRADE.....	F-VII
APPENDIX G	ABORIGINAL CULTURAL HERITAGE ASSESSMENT REPORT VERSION 2	G-VIII

TABLES

Table 1-1 Indicative timeline.	4
Table 1-2	4
Table 3-1 Revised safeguards and mitigation measures.....	28

FIGURES

Figure 1-1 Location of the proposal	8
Figure 1-2 Updated Subject Land.....	9

1 INTRODUCTION

1.1 BACKGROUND

A 200 MW photovoltaic solar farm is proposed to be developed at Sandigo, south-east of Narrandera in NSW. The Avonlie Solar Farm (the proposal) would have a development footprint of around 550 ha.

The proposal is classified as State Significant Development under the NSW *Environmental Planning and Assessment Act 1979* and requires consent from the NSW Minister for Planning. An Environmental Impact Statement (EIS), describing the proposal and assessing its potential environmental impacts, was prepared by NGH Environmental and submitted to the NSW Department of Planning and Environment. The EIS was placed on public exhibition between 2 August 2018 and 31 August 2018.

Key environmental issues investigated in the EIS, based on the requirements of the Secretary's Environmental Assessment Requirements (SEARs), included:

- Biodiversity.
- Aboriginal cultural heritage.
- Land use and resources.
- Noise impacts.
- Watercourses and hydrology.

These issues were investigated via specialist assessments. Lower risk issues were investigated primarily by desktop assessment.

1.2 PURPOSE OF THIS REPORT

NGH Environmental has prepared this Response to Submissions (RTS) on behalf of RES in response to the Department of Planning and Environment's letter dated 7 September 2018 given pursuant to clause 85A of the *Environmental Planning and Assessment Regulation 2000*. The purpose of the Submissions Report is to:

- Consider and respond to the matters raised in the submissions for the proposal.
- Describe any changes to the proposal, including a revised set of proposed mitigation measures.

1.3 PROPOSAL SUMMARY

Site location

The proposal is in the Narrandera Local Government Area (LGA) approximately 20 kilometres (km) south-east of Narrandera (Figure 1-1). The subject land would occupy approximately 802 ha and includes Lots 1 and 2 DP606800, Lot 1 DP386927, Lot 13 DP795880, Lot 7 DP254595 and Lots 13, 22, 26, 28, 30, 43, 53 DP754538. Of this, approximately 550 ha makes up the development footprint (or area of disturbance). The development site is agricultural land comprising several large paddocks which are generally flat, largely cleared and cultivated for pastures and grazing.

The development site holds several dams, with an unnamed irrigation channel occurring on the east of Lot 30 DP 754538. Sandy Creek occurs approximately 1.5 km to the north east. There is one residence within the development site, which is the involved landowner's home. This area is only affected by the proposed transmission line easement, with no actual disturbance on the parcel of land. Adjoining land uses include grazing and cropping for agriculture.

The development site holds remnant native vegetation in the form of paddock trees. Remnant native woodlands occur along the western boundary of the development site and along Muntz Road. Planted vegetation is located between paddocks, and along the southern boundary on Muntz Road.

No residences are located close to the solar infrastructure, with the closest residence being an involved landowner, located on Quilters Road approximately 1 km from the proposal footprint.

Key components of the proposal

The proposal comprises of the following key infrastructure components:

- Photovoltaic solar arrays ground-mounted on a single-axis tracking system.
- Power conversion units.
- A substation including an elevated busbar, switch room, a lightning protection system, current and voltage transformers and a dual connection into the existing TransGrid overhead transmission lines.
- A battery storage facility (BSF).
- Operations and maintenance buildings with associated car parking.
- Access point to the site via Muntz Road.
- Underground and overhead cabling.
- Internal access tracks.
- Emergency lighting.
- CCTV system including infrared (non-visible) lighting.
- Security fencing.
- Subdivision of the property for the purpose of the substation and continued agricultural purposes.
- Clearing of vegetation.
- Road upgrades.
- Temporary facilities.

Approximately 670,000 solar panels would be mounted in rows on a single axis tracking system, with trackers likely to have a typical maximum tilt height of 4 m. Ground cover would be established under the panels and would likely be managed using sheep grazing.

An existing TransGrid-owned 132 kV transmission line runs through the development site, proposal and substation to be sited within the Avonlie Property. The area for the substation will be subdivided from the residual lot and would be constructed on a gravel bench and surrounded by security fencing. The Substation site will be transferred in freehold to TransGrid on completion of the proposal.

An additional subdivision for continued agricultural purposes by the involved landowner is also proposed in the south-east corner of the development site.

The proposal includes a BSF, which is proposed to be constructed at the same time as the solar farm, or as part of a staged development, within 5 years of the commissioning of the solar farm. Subject to economic

and technical considerations, the BSF will comprise banks of lithium-ion batteries housed in customised buildings. The BSF would have the ability to house approximately 205 MW/205 MW hr rated capacity, with an initial pilot study of 10MW hr.

An internal access track system would be established for the construction and maintenance of both the solar farm and the BSF.

Indicative timeline

An indicative timeline for the proposal is outlined in Table 1-1.

Table 1-1 Indicative timeline.

Phase	Approximate commencement	Approximate duration
Construction	Spring 2019	18 months
Operation	Autumn 2021	30 years
Decommissioning	Autumn 2051	12 months

1.4 UPDATED DESIGN

Since the submission of the EIS, the locations of the proposed transmission line, internal solar substation, transformer and utility area, temporary construction compound and battery storage have been moved. Original versus the updated design, area and lots are detailed within Table 1-2. Refer to Figure 1-2 and Appendix A for further details on the updated subject land, design and updated constraints.

Table 1-2

	Original Design	Updated Design
Lots	Lots 1 and 2 DP606800 and Lots 13, 22, 26, 30, 43, 53 DP754538.	Lots 1 and 2 DP606800, Lot 1 DP386927, Lot 13 DP795880, Lot 7 DP254595 and Lots 13, 22, 26, 28, 30, 43, 53 DP754538.
Subject Land Area (ha)	633	802
Development Footprint Area (ha)	534	550

This was done in discussion with TransGrid to manage the network and increase the proposal's ability to generate electricity even if there is a line outage. As a result, the revised proposal now connects into both 132kv lines. This avoids the need to cross the 132kv lines as well as minimising the length of additional overhead lines required for connection. The location was also discussed and agreed with the landowner to minimise impacts to existing farming operations.

The internal solar substation, transformer and utility area, temporary construction compound and battery storage are all within the originally identified development site and were surveyed as part of the Biodiversity Development Assessment Report (BDAR) and the Aboriginal Cultural Heritage Assessment Report (ACHAR). The new transmission line route was however surveyed post-EIS submission. The BDAR (Appendix B) and the ACHAR (Appendix C) have been updated with the details of the additional survey, with results summarised below.

Biodiversity Development Assessment Report

Version 2

Version 2 of the Biodiversity Development Assessment Report (BDAR) was completed by NGH Environmental in February 2019. The purpose of the report was to investigate and assess the risk associated with the proposed new transmission line route, assess the impact of the proposed upgrade and widening of Sandigo-Boree Creek and Muntz Roads and assess the significance of clearing of potential Serious and Irreversible Impact (SAIL) candidate species and EPBC listed Endangered Ecological Community (EEC) Grey Box Grassy woodland.

Targeted surveys were undertaken over a number of days and months. A general biodiversity survey was undertaken on the 15th November 2017. Threatened Fauna Surveys and Nocturnal Surveys were undertaken on the 28th February 2nd & 6th March and 4th & 7th May 2018. Threatened Flora surveys were undertaken on the 28th February and 5th November 2018. Floristic surveys undertaken on the 15th November 2017, 28th February 2018 and the 7th May 2018 by two ecologists.

The Biodiversity Assessment Methodology (BAM) calculator was re-run for the updated impact areas (transmission route and road upgrades), and the following credit requirements were identified:

- 78 Ecosystem Credits for impacts to Western Grey Box – White Cypress Pine tall woodland on loam soil on alluvial plains of NSW South Western Slopes Bioregion and Riverina Bioregion (PCT80)
- 15 Ecosystem Credits for impacts to Old Man Saltbush – mixed chenopod shrubland of the semi-arid persistently dry) and arid climate zones.
- 167 species credits for assumed impacts to the *Austrostipa wakoolica*, Sand-hill Spider Orchid, Oaklands Diuris, Pine Donkey Orchid, Superb Parrot and Major Mitchell Cockatoo that were unable to be surveyed for during the recommended survey period.

This differs from the previous version of the BDAR in that the following credit requirements were identified:

- 62.25 Ecosystem Credits for impacts to Western Grey Box – White Cypress Pine tall woodland.
- 15 Ecosystem Credits for impacts to Old Man Saltbush – mixed chenopod shrubland of the semi-arid persistently dry) and arid climate zones.
- 98 species credits for assumed impacts to the *Austrostipa wakoolica*, Sand-hill Spider Orchid, Oaklands Diuris, Pine Donkey Orchid, Superb Parrot and Major Mitchell Cockatoo.

It was also found suitable habitat in the form of White Cypress- Grey Box Woodland exists along Muntz Rd and Sandigo-Boree Creek Rd for both the Sand-hill Spider Orchid and the Oaklands Diuris. As seasonal conditions were considered unsuitable for these species, it is not known if they occur within the development site. Based on the small area of potential habitat impacted, suitable remaining habitat and that no impacts to the known populations would occur, it is considered unlikely the proposal would have a serious and irreversible impact on these species.

No significant impact was considered to occur to the EPBC listed Grey Box Grassy woodland. As per the EPBC offsets policy, offsets are not required where the impacts of a proposed action are not thought to be significant. No offsets are required for the EPBC listed Grey Box Grassy Woodland EEC.

Version 3

Version 3 of the BDAR (Appendix B) was completed by NGH Environmental in June 2019. The purpose of the report was to investigate and assess the additional risk associated with further widening of Sandigo-Boree Creek Road, as per Narrandera Shire Council's requirements.

The BAM calculator was re-run for the updated impact areas along Sandigo-Boree Creek Road, and the following credit requirements were identified:

- 83 Ecosystem Credits for impacts to Western Grey Box – White Cypress Pine tall woodland on loam soil on alluvial plains of NSW South Western Slopes Bioregion and Riverina Bioregion (PCT80)
- 15 Ecosystem Credits for impacts to Old Man Saltbush – mixed chenopod shrubland of the semi-arid persistently dry) and arid climate zones.
- 195 species credits for assumed impacts to the *Austrostipa wakoolica*, Sand-hill Spider Orchid, Oaklands Diuris, Pine Donkey Orchid, Superb Parrot and Major Mitchell Cockatoo.

This differs from Version 2 of the BDAR in the following way:

- 5 additional Ecosystem Credits for impacts to Western Grey Box – White Cypress Pine tall woodland on loam soil on alluvial plains of NSW South Western Slopes Bioregion and Riverina Bioregion (PCT80)
- 28 additional species credits for assumed impacts to the *Austrostipa wakoolica*, Sand-hill Spider Orchid, Oaklands Diuris, Pine Donkey Orchid, Superb Parrot and Major Mitchell Cockatoo.

The assessment for SAIL species in Section 9.2 of the BDAR was also updated to include additional impacts on Sandigo-Boree Creek Road.

Aboriginal Cultural Heritage Assessment Report

An addendum ACHAR was completed by NGH Environmental in November 2018. The purpose of the report was to investigate and examine the presence, extent and nature of any Aboriginal heritage sites within the scope of the proposed new transmission route. (Appendix C)

An updated development footprint, recognising the environmental and heritage constraints identified in the original assessments, was developed. It is understood that disturbance associated with the transmission line footprint would involve ground disturbance that has the potential to impact on Aboriginal heritage sites and objects which are protected under the NSW *National Parks and Wildlife Act 1974* (NPW Act).

The addendum report documents the ACHAR undertaken for the additional 17 ha transmission line route to investigate the presence of any Aboriginal site, assess impacts to cultural heritage values, and provide management strategies to mitigate any potential impacts within the Additional Area.

Survey was undertaken in October 2018 with representatives of the Warrabinya Cultural Heritage and Assessment Group. Visibility was moderate across the proposal area at the time of survey. In total, 2 stone artefacts were located. Fragmented mussel shell was located during the survey.

The isolated finds located in the Additional Area display characteristics (raw material type, size, isolated context) typical of the other sites located during the original ACHAR site survey. As indicated in the original ACHAR, there would likely be many hundreds of such artefact sites in the local area and the low number of isolated finds and artefact sites in the AHIMS register prior to the original Avonlie ACHAR site survey is merely an indication that few surveys have been undertaken in the Sandigo area.

The isolated artefacts located during the survey of the Additional Area are determined to have low significance and will be salvaged alongside the other reported material recommended for salvage in the original ACHAR.

It was recommended that:

- The two isolated finds identified as part of the survey of the Additional Area align with the findings of the original ACHAR. Therefore, the collection and relocation of these artefacts should be undertaken by an archaeologist with representatives of the Registered Aboriginal Parties (RAPs) in conjunction with the salvage program recommended in the original ACHAR. A new site card/s will need to be completed once the artefacts are moved to record their new location on the AHIMS database.
- RES Australia Pty Ltd commits to undertaking the salvage collection post project determination and prior to construction, and under the auspices of an approved Cultural Heritage Management Plan (CHMP), developed in consultation with the RAPs. This CHMP will contain provisions such that the collection and relocation of the artefacts should be undertaken:
 - By an archaeologist accompanied by representatives of the registered Aboriginal parties.
 - An Aboriginal Site Impact Recording Form will be completed and submitted to AHIMS following relocation for each site harmed or destroyed by the salvage and construction works.
 - A new site card/s will be completed once the artefacts are moved to record their new location on the AHIMS database.
 - Artefact disposition and storage will be undertaken in accordance with Requirement 26 of the Code of Practice (DECCW 2010:35-6).
 - RAPs and an archaeologist will be provided an opportunity to collect artefacts from any proposed fencing or firebreak alignments along the boundary of the proposal area, particularly within the designated exclusion areas following post project determination.
- To address the potential for finding Aboriginal artefacts and in accordance with provisions outlined in the Avonlie Solar Farm SEARs, an Unexpected Finds Protocol has been developed to outline procedures to be followed to avoid or mitigate harm to objects further to those documented in this ACHAR potentially located during *any stage* of the life of the Solar Farm project. The CHMP developed for the Salvage Collection will update this Unexpected Finds Protocol with any further project specific information to assist with avoiding and mitigating harm to any further objects located.
- In the unlikely event that human remains are discovered during the construction, all work must cease in the immediate vicinity. OEH, the local police, the Coroner, and the RAPs should be notified. Further assessment would be undertaken to determine if the remains were Aboriginal or non-Aboriginal.
- Further archaeological assessment will be required if the proposal activity extends beyond the area of the current investigation. This would include consultation with the RAPs and may include further field survey.
- RES Australia Pty Ltd are reminded that it is an offence under the *NSW National Parks and Wildlife Act 1974* to disturb, damage or destroy an Aboriginal object without approval.

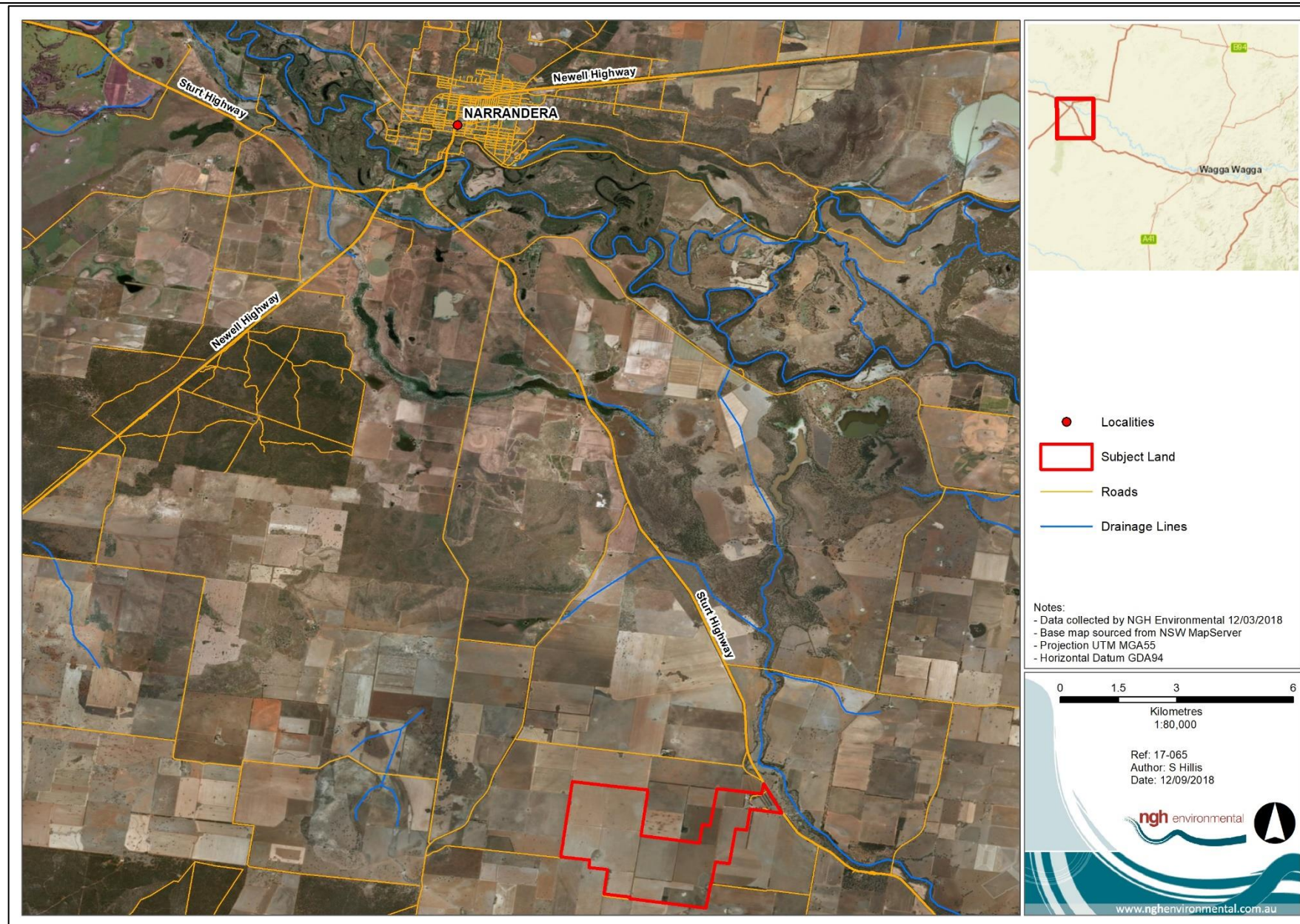


Figure 1-1 Location of the proposal

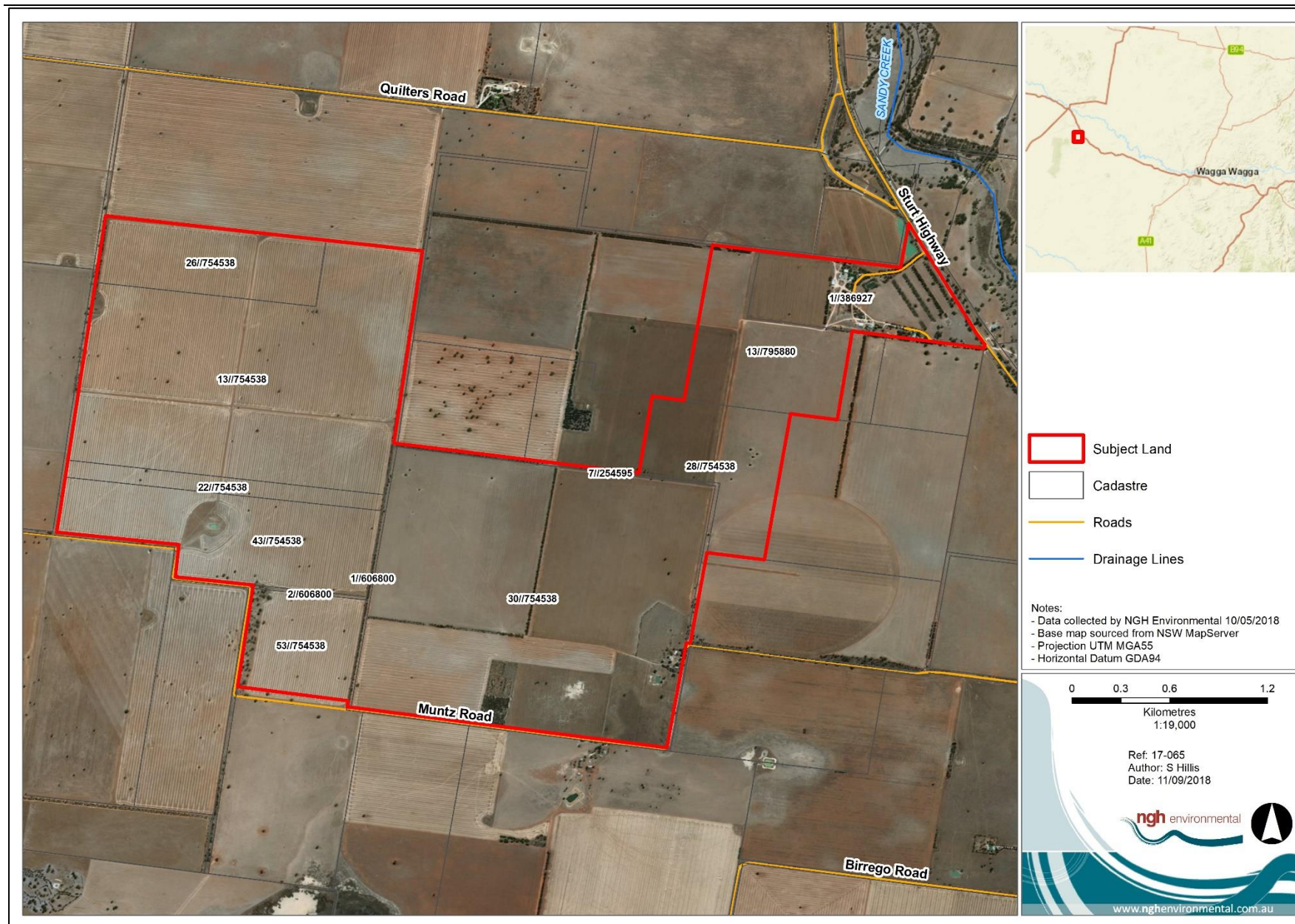


Figure 1-2 Updated Subject Land

1.5 EXHIBITION PERIOD AND LOCATION

The EIS was placed on public exhibition for a period of 4 weeks from the 2 August to 31 August 2018 and was available on-line at

http://www.majorprojects.planning.nsw.gov.au/index.pl?action=view_job&job_id=9031.

Hard copies were available at the following locations:

- Department of Planning and Environment: Information Centre.
- Narrandera Shire Council, 141 East Street, Narrandera.
- Nature Conservation Council: 14/338 Pitt Street, Sydney

1.6 PROJECT BENEFITS

The proposal would produce an estimated 473,000-Megawatt Hours (MWh)/year of renewable electricity and supply over 11,000 GWh over its life. This would assist in meeting the LRETs. The solar farm would also help implement the NSW Government's Renewable Energy Action Plan.

Key benefits of the solar farm include:

- Generation of approximately 473,000 MWh of renewable electricity per year.
- Based on the assumption that power generation would otherwise be made by brown coal with a carbon factor of 0.33372 tonnes per MWh, the proposed solar energy facility would displace more than 158,000 tonnes of carbon dioxide (CO₂) or greenhouse gas emissions per year (Source: Department of the Environment National Inventory Report).
- Supply of enough power each year to service approximately 80,000 average New South Wales households (Essential Economics Pty Ltd, 2018).
- A solar energy facility that displaces over 158,000 tonnes of CO₂ per annum is the equivalent of taking approximately 56,400 cars off the road each year, based on an average car in NSW travelling 14,000 km per year with CO₂ emissions of 200 g/km (or 2.8 tonnes of CO₂ emissions per car per year) (DIT, 2011).

Local social and economic benefits that would be associated with the construction and operation of the Avonlie Solar Farm include:

- Direct and indirect employment opportunities during construction and operation of the solar farm; this includes up to 200 direct and 320 indirect jobs at the peak of construction and 4 direct and 12 indirect during operation.
- Direct business volume benefits for local services, materials and contracting businesses.
- Assistance in meeting the future national electricity demands.
- \$250,000 grant to support the community.

Additionally, the proposal considers the environmental constraints of the development site, and has been designed to:

- Preserve biodiversity features, through minimising tree removal.
- Minimise impacts to soil and water, by adopting pile driven panel mounts rather than extensive soil disturbance and excavation.
- Minimise impacts to items of Aboriginal cultural significance.

- Minimise visual impacts to neighbours by retaining boundary vegetation and existing vegetative screening.
- Preserve agricultural production values, as the project is highly reversible at the end of the project's life.
- Retain some agricultural production value through stock grazing.

1.7 PROJECT JUSTIFICATION

The objectives of the proposal are to:

- Select and develop a site which is suitable for commercial scale solar electricity generation.
- Assist the NSW and Commonwealth Governments to meet Australia's renewable energy targets and other energy and carbon mitigation goals.
- Develop a project which is acceptable to the local community.
- Provide local and regional employment opportunities and other social benefits during construction and operation.
- Provide a clean and renewable energy source to assist in reducing GHG emissions.
- Avoid and minimise environmental and cultural impacts wherever practicable through careful design and best practice environmental protection and impact mitigation.
- Provide electricity generation close to a consumption centre.

The proposal would meet the proposal objectives, principally the development of a commercial scale solar electricity power station. It is justified in terms of reducing Australia's GHG emissions and meeting future energy demands. It will contribute to Australia's renewable energy targets and support a global reduction in GHG emissions. Finally, it will contribute to economic development in Narrandera and surrounding region.

The development site is considered to be suitable for the proposal given:

- It is located within close proximity to existing electricity infrastructure.
- The land has been heavily disturbed from past and current agricultural activities.
- Given the location, site attributes and heavy disturbance of the land, the proposal would have low impacts on the environment.
- The development site is not subject to land hazards such as flooding or bush fire and is not known to hold land contamination.
- The proposal is not likely to generate land use conflicts with surrounding land uses.
- The community has provided support for the proposal. Evidence to suggest support includes a lack of public submissions/objections and positive feedback at the community open days and from verbal communication with landowners.

2 CONSIDERATION OF SUBMISSIONS

2.1 RESPONSES RECEIVED

During the exhibition period, the Department of Planning and Environment received 10 submissions. No public submissions were received. The submissions are provided in full in Appendix D and are summarised in the following sections.

2.2 PROPONENT'S RESPONSE TO GOVERNMENT AGENCY SUBMISSIONS

Agency submissions and additional consultation have been paraphrased and addressed in the following section.

Department of Industry (DoI)

Issue	Response
There is no sum total of agricultural land being taken out of production by the proposed development and other proposed developments in the area in Section 7.9 (Cumulative Impacts).	Section 6.5.2 (Land Use Impacts) and Section 7.9 (Cumulative Impacts) of the EIS details that 0.07% of all cropping land and 0.06% of all productive land in the NSW Murray Region will be lost to the proposal. For further details, see Section 2.3 of this report for an updated Cumulative Impacts chapter further addressing DoI comments.
Appendix C1 and C2 contain no record of Narrandera Shire Council's consent for use of a council-owned standpipe. An application should be made, and permission obtained.	On 14 February 2019, NGH Environmental received an email from Narrandera Shire Council stating water from the council standpipe is potable, and the suggested volumes in the EIS would be available. The email went on to state the fee and method for water extraction (refer Appendix E). Council provided the details of a local truck hire company, M Hannan Water and Truck Hire Pty Ltd, to the proponent who have provided a quote for use of a Council standpipe (refer Appendix E). It will be their role to obtain final Council approval for use of the standpipe during the construction period. Water will not be obtained from any creek line.
Farm dams are to be retained for stock watering and possibly panel cleaning. Any water taken from these dams is only to be used within the landholding with harvestable rights.	Water from dams will only be used for construction and operation of the proposal within the landholding, including panel cleaning and stock watering. Water may also be used as a backup source for firefighting. Mitigation Measure WA9 has been included to address the additional requirements. Refer to Section 3 (Updated mitigation measures) of this report.
If any groundwater will be extracted at any stage of the development the proponent must obtain the relevant entitlements and approval prior to any extraction.	The proponent will obtain the relevant licence and/or entitlement for groundwater extraction prior to any extraction, if it is proposed to be used. Mitigation Measure WA10 has been included to

	address the additional requirements. Refer to Section 3 (Updated mitigation measures) of this report.
The proponent should provide detail for potential construction within riparian corridor areas within the development site and assess the impact and ensure adherence to the relevant guidelines.	There is no development within a riparian corridor within the development site.
<p>The proponent should provide the following in the detailed design:</p> <ul style="list-style-type: none"> Proposed drainage features and scour protection. Specification of the confirmed excavation depths of all earthworks, with potential for groundwater impacts readdressed when design is complete. 	<p>Section 7.1.5 (Soil) of the EIS, mitigation measure SO6 addresses drainage features and scour protection through integrated project design with site constraints.</p> <p>Excavation depths for all earthworks will be provided as part of the final design, with groundwater impacts readdressed as part of the Soil and Water Management Plan. SO1 has been updated to address the additional requirements. Refer to Section 3 (Updated mitigation measures) of this report.</p>
The proponent should ensure a transfer of control of constructed Crown Road (Muntz Road) to Narrandera Shire Council.	The entirety of Muntz Road is a dedicated public road, owned and maintained by Narrandera Shire Council. Refer to Appendix E of this report for gazettal details.
The proponent should lodge an application for tenure and road closure over the unnamed Crown Road.	The "paper road" (Lot 1 DP 606800) running north to south is owned by the involved landowners, Warwick and Jillian Anderson. Refer to Appendix E of this report for title information.

Department of Planning & Environment – Division of Resources & Geoscience (DRG)

Issue	Response
DRG are satisfied that the proponent has addressed specific SEARs requirements. The proposal has also generated biodiversity credits that will be retired. No further consultation or comment is required.	No further response required

Fire and Rescue (FR) NSW

Issue	Response
FRNSW refer and reiterate the requirements of the SEARs for a comprehensive Emergency Response Plan (ERP).	<p>The requirements of an ERP are largely addressed as HA8 in Section 7.7.5 (Safeguards and Mitigation Measures) in the EIS. For further clarity however, HA1 has been updated to include fire response as part of the overall emergency response, with the following mitigation measures included:</p> <ul style="list-style-type: none"> Two copies of the ERP are to be stored in a prominent 'Emergency Information Cabinet' located directly adjacent the site's main entry points. Once constructed and prior to operation, the operator is to make contact with the Local

	<p>Emergency Management Committee to register the site as hazardous.</p> <p>Refer to Section 3 (Updated mitigation measures) of this report.</p>
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Local Land Services (LLS)

Issue	Response
<p>LLS note that the proposal is State Significant Development under Part 4 of the <i>Environmental Planning and Assessment Act 1979</i>, and that potential impacts to native vegetation are discussed in section 7.1 of the EIS. As such, LLS do not provide any additional consent as an agency and provide no further comment.</p>	<p>No further response required</p>

Narrandera Shire Council

Issue	Response
<p>1. Cumulative Impact of Renewable Energy Projects in the Region</p> <p>There is extensive, on-going planning and development of at least 20 solar farms, plus other major developments, occurring in the Riverina-Murray region. Cumulative impacts must address:</p> <ul style="list-style-type: none"> • The impact of the increased demand on the housing rental market caused by the construction workforce. • The increasing demand on limited resources in the local area, such as health and education services. • The impact on the region resulting from an increased demand for skilled labour. 	<p>While detailed in Section 7.5 (Socioeconomic and community) and within the Economic Impact Assessment (Appendix K) of the EIS, Council's concerns around cumulative impact has been elaborated on further as Section 2.3 of this report.</p>
<p>2. Roads and Traffic</p> <p>2.1 Road Upgrading prior to Construction Activity</p> <p>The traffic and transport impact assessment is considered to be deficient in that the local road network in the project area was not designed to accommodate so many heavy/large and light vehicles over such a long period.</p> <p>The proposed design upgrades are considered inadequate, with the following proposed by Council:</p> <ul style="list-style-type: none"> • An upgrade of 1.5 km of Sandigo-Boree Creek Road with minimum 200 mm compacted gravel (CBR of 30), 7 m seal width with 1 m gravel shoulder on either side and a 20/14 seal. • An upgrade of 2.5 km of Muntz Road to sealed condition with a minimum 150 mm compacted gravel (CBR of 30), 6 m seal width 	<p>As a result of additional consultation between the proponent and Narrandera Shire Council, it was agreed to upgrade 1.5 km of Sandigo-Boree Creek Road (up to 100 m past the intersection of Muntz Road) to minimum 200 mm compacted gavel (CBR of 30), 7 m seal width and 1 m gravel shoulders on either side with a 20/14 seal. It was also agreed that all works would be retained within the existing disturbed footprint, with no additional clearing or damage outside the toe of the existing table drains permitted. This design would require minor clearing of the disturbed (good to low condition) understorey and grassland of the EPBC listed Grey Box Grassy Woodlands and Derived Native Grassland of South-eastern Australia (Endangered Ecological Community (EEC)). Minor lopping of overhanging branches would be required, with no clearing of mature Grey Box trees permitted (Appendix F).</p>

<p>with 1 m gravelled shoulder on either side and a 20/14 seal.</p> <ul style="list-style-type: none"> • Upgrade of Sandigo-Boree Creek Road and Muntz Road intersection, covert into BAR/BAL treatment with minimum 200 mm compacted gravel (CBR of 30), 20/14 seal, and line marking up to 30 m off the edge of road line. • Full payment of the repair and maintenance costs on those roads directly impacted by project related traffic. • Payment to Council of \$15,000 p/a + CPI for ongoing repair and maintenance costs. Annual road maintenance contributions will commence on acceptance by Council that the roads have been returned to or exceed conditions prior to construction, after completion of construction of the solar farm. 	<p>It was also agreed that Muntz Road would be upgraded to a 6.2 m gravel surface with 0.5 m shoulders and maximum 1 m table drains, with minor clearing of the disturbed and undisturbed (moderate to good condition) understorey and grassland associated with the EEC. Two mature Grey Box trees have been identified for removal, which have been included in the BDAR calculations. Clearing or damage outside of the proposed footprint is not permitted, with no additional clearing of mature Grey Box trees (Appendix F).</p> <p>The proponent has also committed to upgrading of Sandigo-Boree Creek Road and Muntz Road intersection, as per the requirements of Narrandera Shire Council.</p> <p>The proponent believes they have successfully addressed the council's safety requirements, and the impacts to the EEC and SAI entities have been assessed in the Biodiversity Development Assessment Report (BDAR) as being below the relevant impact assessment thresholds. Any additional clearing or impact outside of the proposed alignment is likely to lead to unacceptable impacts and is therefore avoided with this approach. Any upgrades to the intersection of Sandigo-Boree Creek Road and the Highway are detailed within the Traffic Assessment and the BDAR.</p> <p>A commitment to repair and maintain access roads at the proponent's cost during construction and on decommissioning of the proposal was detailed within Section 7.3.3 (Traffic, transport and road safety – Safeguards and mitigation measures) of the EIS formerly as TT7. Refer to TT5 in Section 3 (Updated mitigation measures) of this report.</p> <p>Given that the proponent has committed to repair and maintain damaged roads resulting from project traffic at their own cost during construction and decommissioning, additional payment to council for repair and maintenance of roads for the operating life of the proposal is considered unreasonable and not agreed.</p>
<p>2.2 Roads and Traffic during Operations</p> <p>Council seek dialogue with the proponent as soon as possible to set terms for the future management of local roads and project-related traffic, and to develop a comprehensive road program which is to include:</p> <ul style="list-style-type: none"> • A pre-construction detailed condition survey be undertaken at proponents cost of all local roads complete with photos and agreed on with Council. • All local roads experiencing project traffic will be reinstated to an equivalent or better 	<p>TT2 in Section 7.3.3 (Traffic, transport and road safety – Safeguards and mitigation measures) of the EIS details a commitment to conduct a pre-condition survey in consultation with council, a post-condition survey to ensure the road network has been reinstated to pre-construction condition, traffic controls such as speed limit and signage, a program for monitoring and maintenance of public roads, designation of haulage and construction routes, community consultation regarding all traffic impacts and road-specific risk assessment.</p> <p>A commitment to repair and maintain access roads at the proponent's cost during construction and on decommissioning of the proposal was formerly</p>

<p>condition than that found in the condition survey.</p> <ul style="list-style-type: none"> • Notification if any other local roads are to be trafficked by Project vehicles, with condition surveys completed beforehand. • During construction the proponent maintains all local roads utilised by Project traffic in good condition, providing safe all-weather access. Council requires three-monthly inspections with the proponent. • A speed limit of 80 km/h on local roads. • Adequate advisory signage within road reserves to advise traffic of required route, with location approved by Council. • Suitable strategy to safeguard the safety of school bus activity. • Provide Council details of all underground cable and overhead powerline locations and show where they intersect road reserves. • Agreement with Council if during the life of the project, Council finds evidence of significant increases in traffic volumes or vehicle types on other roads in a locality not addressed in the EIS that is attributed to the Project, an agreement for further funds to Council for repair and maintenance is required. • A Road and Traffic Management Plan for decommissioning, with provision of road condition and repair and maintenance arrangements. 	<p>detailed within Section 7.3.3 (Traffic, transport and road safety – Safeguards and mitigation measures) of the EIS formerly as TT7. Refer to TT5 in Section 3 (Updated mitigation measures) of this report.</p> <p>Business rates payable by the proponent for use of the land will, amongst other items listed on Narrandera Shire Council's website, be used for repair and general maintenance of the roads. Any impact is expected to be minimal given the very light traffic expected from operation of the solar farm.</p> <p>No underground cables or overhead transmission lines intersect any road reserve. Detailed design showing location of all cable locations will be developed and provided to Council post DA-approval.</p> <p>The proposed haulage route is the Sturt Highway, Sandigo-Boree Creek Road and Muntz Road. Additional roads have not been assessed or proposed. TT2 in Section 7.3.3 (Traffic, transport and road safety – Safeguards and mitigation measures) of the EIS details the requirement of a Traffic Management Plan detailing the approved haulage route. As such, any additional agreement with council in regard to further repair and maintenance of roads is not considered reasonable.</p>
<p>3. Water Supply</p> <p>11.2 ML of non-potable water and 0.34 ML of potable water is required during construction, and 1.7ML per year of non-potable water during operation. Council wish to re-open discussions regarding water supply arrangements.</p>	<p>Narrandera Shire Council provided NGH Environmental with an email on 14 February 2019, stating the amounts of suggested potable water would be available for the construction and operational periods of the proposal (refer Appendix E).</p>
<p>4. Telecommunications</p> <p>Mobile phone and internet services in the locality are poor. The influx of 200 workers will place additional strain and demand on existing services and adversely impact service provided to locals. Council request the proponent liaise with mobile phone tower providers to secure an upgrade (if required) to mobile phone and internet service prior to construction commencement.</p>	<p>It is unlikely that the influx of 200 workers will place additional strain and demand on existing network services at the site of construction. Network coverage from the three major carriers (Optus, Telstra and Vodaphone) at the proposal is high (4G) (Appendix E). The Mobile Network Guide (Powertec 2014) suggests that network congestion will affect 3G networks, but not 4G or newer phones on the LTE network.</p> <p>The majority of staff would only be on-site during business hours when network demand is low. After hours when peak demand is high, staff are expected to be within the 4G broadcast signal of towers within town centres. The Narrandera town centre has two internet towers, both of which are Telstra, Optus and Vodaphone 4G, and NBN enabled</p>

	<p>(OzTowers 2018). A proportion of staff are also expected to be local.</p> <p>UHF radios are predominantly used for communication within the site with mobile phones usually reserved for external communications only.</p> <p>Mobile phone use would also be restricted to supervisory staff, with the majority of workers prohibiting use of mobile phones during construction hours (e.g. operating heavy machinery).</p> <p>As such, substantial additional demand on the network is not expected.</p>
<p>5. Noise, dust and visual impacts</p> <p>Council requests that the 12 landholders living within 5km of the Project be fully protected with respect to noise, dust and visual impacts.</p> <p>Any resident within 500 m of an unsealed road used by project traffic is to be sealed to a width of 6 m for a distance of 150 m either side of the midpoint of the house.</p>	<p>As per Section 6.6 (Noise impacts) of the EIS, all residences comply with construction and operational noise limits.</p> <p>As per Section 7.4 (Climate and air quality) of the EIS, mitigation measures have been designed to protect residences from any impact of dust.</p> <p>As per Section 6.4 (Visual impacts) of the EIS, no residences are expected to experience any negative visual impacts due to distance and existing vegetative screening.</p> <p>As per Figure 3-5, Section 3.1 (Project description – Development site description) of the EIS, there are no residents within 500m of the unsealed Muntz Road. Use of other roads in the area is not proposed.</p>
<p>6. Employment matters</p> <p>The EIS does not provide adequate consideration of the potential social and economic impacts of the development during the 18-24 month construction phase. Council seek and up-front commitment from the proponent regarding:</p> <ul style="list-style-type: none"> • A minimum of 140 locals being hired during construction. • A minimum of 10 annual apprenticeships or traineeships. • 10% indigenous staff employment. 	<p>While detailed in Section 7.5 (Socioeconomic and community) and within the Economic Impact Assessment (Appendix K), Council's concerns around social and economic impacts has been elaborated on further in Section 2.3 (Cumulative Impacts) of this report.</p> <p>It is likely that RES will oversee a second party to carry out the construction of the proposal. Tenders/contracts will be advertised throughout the region, although staff numbers required to complete a job is entirely up to the third party. As such, an up-front commitment to exact number of staff is not possible and, in any event, would be unduly restrictive for the project.</p> <p>Mitigation measure SE2 in Section 3 of this report has been updated to include a higher weighting for local staff, apprentices, trainees and indigenous staff through the procurement process, with tenders/contracts advertised with this requirement.</p>
<p>7. Waste Management</p> <p>Council waste facilities are of a limited scope and capacity, and the landfill has a limited life. Financial compensation to offset increased consumption of airspace is required to avoid rate increased for expansion. Council wish to discuss with the proponent further.</p>	<p>Business rates payable by the proponent and waste fees at council waste facilities are designed to compensate for consumption of airspace. Accordingly, no additional compensation to council is warranted.</p> <p>The proponents engineering team estimated the quantity of waste to be in the vicinity of 1,500</p>

	tonnes (not 3,000). If waste is to exceed the proposed 1,500 tonnes, the proponent would reopen negotiations with Narrandera Shire Council.
<p>8. Biosecurity</p> <p>Biosecurity is an important issue, as the proposal is located at the gateway to the Murrumbidgee Irrigation Area. Council require the proponent to ensure all inbound containerised material is certified as biosecurity safe.</p>	<p>Importation to Australia of any shipment is subject to biosecurity controls at the border which the importer must adhere to. These contain strict requirements and inspections before goods are cleared for release.</p>
<p>9. Financial Contributions to Narrandera Shire Council</p> <p>Council is appreciative of the proponent's decision to provide a one-off payment of \$250K at the commence of Project construction. Council requests additional annual payments to address direct and indirect consequences, including via cumulative impacts from other projects in the wider region.</p> <p>Council require a discussion with the proponent to reach an agreement on financial contributions in the form of a Voluntary Planning Agreement (VPA).</p>	<p>The proponent is committed to providing a one-off \$250,000 payment into a Community Fund at the start of the construction phase of the project. The Community Fund could be used to support a range of projects which might include environmental and local community projects.</p> <p>The solar farm will also be liable for business rates at the point the lease is entering into and construction activity commences. The proponent is currently developing and constructing other renewable projects in many other regional council areas in NSW and other states. At each of these project locations the local council is already benefitting or stands to benefit from a substantial uplift in their local tax revenues by having a renewable energy project in the local council area. The response dated 12 September 2018 makes no reference to any uplift in local taxes which the project will bring for an extended period of time. The current agricultural classification of the host site should be assessed by the Valuer General shortly after the project moves into construction. The Valuer General will set the new classification and site value for the land upon which the solar farm is located. This is important as it is this valuation that will drive an increase in the business rates Narrandera Shire Council will receive.</p> <p>The solar farm will contribute to the local council area as any other property-based business would be expected to do.</p> <p>The direct and indirect consequences of the project have been appropriately addressed in the EIS and this Report and are proposed to be mitigated through the mitigation measures and conditions of development consent. In the circumstances, general payments to Council to address "direct and indirect consequences, including those generated via cumulative impacts" from other projects in the wider region is considered unreasonable and unwarranted.</p> <p>The proponent has not received any objections from members of the public. The proponent considers that the project has social licence to operate and</p>

	will deliver a broad public benefit to the residents of Narrandera Shire LGA and the wider community. For these reasons a Voluntary Planning Agreement is unnecessary.
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NSW Roads & Maritime Services (RMS)

Issue	Response
Prior to construction, a Traffic Management Plan (TMP) will be prepared in consultation with the relevant road authorities, with the appointed transport contractor involved in the preparation.	The majority of RMS requirements for a TMP are included in Section 7.3.3 (Traffic, transport and access) of the EIS, as mitigation measures TT1 and TT2 . However, updates have been made to the mitigation measures to include additional detail as requested. Refer to Section 3 (Updated mitigation measures) of this report.
The proponent must engage an appropriately qualified person to prepare a Road Dilapidation Report for transport routes in consultation with the relevant authorities prior to and on completion of construction. Any damage to the road network as a result of the proposal is at the proponent's cost.	The requirements for survey, assessment of road condition and program for monitoring and repair are included in Section 7.3.3 (Traffic, transport and access) of the EIS, as mitigation measure TT2 . Updates have been made to the mitigation measures to include additional detail as requested. Refer to Section 3 (Updated mitigation measures) of this report.
Prior to commencement of construction, the proponent must undertake all works to upgrade any road to a standard suitable for use by heavy vehicles to meet reasonable requirements specified by the relevant road authority.	The requirements for upgrading identified sections of the road were previously included in Section 7.3.3 (Traffic, transport and access) of the EIS, as mitigation measures TT3 to TT6 . Narrandera Shire Council have since stipulated different and additional requirements for road development to meet their required standards. As such, TT3 , TT4 and TT6 of Section 7.3.3 (Traffic, transport and access) of the EIS has been removed/updated to detail that the proponent would consult with Narrandera Shire Council regarding any proposed upgrades of Sandigo-Boree Creek and Muntz Roads, and with Narrandera Shire Council and RMS for any upgrades to the Sturt Highway. Refer to the new mitigation measures TT3 and TT4 of Section 3 (Updated mitigation measures) of this report.
As a minimum the intersection of Sturt Highway and Sandigo-Boree Creek Road is to be constructed to the satisfaction of RMS complying with: <ul style="list-style-type: none"> Be constructed and the roadside maintained to provide a site distance reaction time of 2.5 seconds and certified by an appropriately qualified person. Constructed with a basic right turn and auxiliary left turn – short (AUL(S)) intersection treatment to the standard required for a b-double with certification detail provided to RMS. Sandigo-Boree Creek Road to provide 2 travel lanes and sealed for 50 m from its 	The requirements for upgrading identified sections of the road were previously included in Section 7.3.3 (Traffic, transport and access) of the EIS, as mitigation measures TT3 to TT6 . These mitigation measures refer to construction of the road to relevant Australian standards, which includes site distance and reaction time. Updates have been made to TT4 (previously TT5) to include the requirements of an AUL(s) and sealing of the entire length of Sandigo-Boree Creek Road to 100 m past the Muntz Road intersection (as requested by Narrandera Shire Council). Refer to Section 3 (Updated mitigation measures) of this report.

<p>intersection with the Sturt Highway, and so turning vehicles are not required to cross opposing travel lanes.</p> <ul style="list-style-type: none"> Be designed and constructed so as not to interfere with the capacity of the current roadside drainage network, and prevent water proceeding into or ponding on the Sturt Highway carriageway. If a culvert is required, it is to be located within the clear zone of the carriageway. 	<p>Mitigation measure TT7 has been included to address the drainage network requirements. Refer to Section 3 (Updated mitigation measures) of this report.</p>
<p>A management plan to provide measures to suppress dust generation shall be prepared and implemented to satisfaction of the relevant road authority.</p>	<p>Dust generation is addressed in Section 7.3.3 (Traffic, transport and access) of the EIS, as mitigation measure TT2. Additional detail around the inclusion of mitigation measures in the TMP for dust has been included. Refer to Section 3 (Updated mitigation measures) of this report.</p>
<p>Any damage or disturbance to the road reserve of the Sturt Highway is to be restored to match surrounding landform in accordance with Council requirements.</p>	<p>Damage and disturbance of the road reserve and repair to ensure it is of similar condition to that prior to construction was formerly addressed in Section 7.3.3 (Traffic, transport and access) of the EIS, as mitigation measure TT2 and TT7. Refer to TT2 and TT5 in Section 3 (Updated mitigation measures) of this report.</p>
<p>A Works Authorisation Deed with RMS is required before design or undertaking construction work within the state road network.</p>	<p>Mitigation measure TT8 has been included to address the WAD requirements. Refer to Section 3 (Updated mitigation measures) of this report.</p>
<p>Glint and glare from panels will not cause a nuisance, disturbance or hazard to the travelling public. If glint or glare is evident, mitigation measures to remove hazard is required.</p>	<p>Additional detail around the inclusion of mitigation measures in the TMP for glint and glare has been included as mitigation measure TT2. Refer to the Section 3 (Updated mitigation measures) of this report.</p>
<p>Works within the road reserve requires approval under Section 138 of the <i>Roads Act 1993</i>.</p>	<p>The requirement of the <i>Roads Act 1993</i> and licence obligations are detailed within Section 4.2.11 (NSW Legislation) and Section 4.5 (Summary of licences and approvals) of the EIS.</p>
<p>Works associated with the development shall be at no cost to RMS.</p>	<p>Cost for road repair and maintenance was formerly included in Section 7.3.3 (Traffic, transport and access) of the EIS, as mitigation measure TT7. Refer to TT5 in Section 3 (Updated mitigation measures) of this report.</p>

NSW Rural Fire Service (RFS)

Issue	Response
<p>RFS have no objection to the proposal and recommend the following conditions be included to any consent granted:</p> <ul style="list-style-type: none"> A Fire Management Plan to be prepared in consultation with NSW RFS Riverina Fire Control Centre. The FMP shall include: <ul style="list-style-type: none"> 24-hour emergency contact details including alternative telephone contact. 	<p>Requirements from NSW RFS are addressed in the EIS under Section 7.7.2 (Fire) and addressed as mitigation measures HA7 and HA8 in Section 7.7.5 (Safeguards and Mitigation Measures).</p> <p>Mitigation measures HA7, HA8 and HA9 have been updated/included to address RFS requirements in the Safeguards and Mitigation Measures table.</p>

<ul style="list-style-type: none"> ○ Site infrastructure plan. ○ Firefighting water supply plan. ○ Site access and internal road plan. ○ Construction of Asset Protection Zones (APZ) and their continued maintenance. ○ Location of hazards (physical, chemical and electrical) that will affect firefighting operations and procedures to manage identified hazards during firefighting operations. ○ Such additional matters as required by the NSW RFS District Office (FMP review and updates). • The entire solar array development footprint to be managed as an APZ as outlined within Section 4.1.3 of <i>Planning for Bush Fire Protection 2006</i> and the NSW Rural Fire Service's document <i>Standards for Asset Protection Zones</i>. • A 10 m defensible space, managed as an APZ, shall be provided around the perimeter of the solar array development site and any proposed building to allow for emergency service personnel to undertake property protection activities. • A minimum 20,000 litre water supply tank fitted with a 65 mm storz fitting shall be located adjoining the internal property access road within the required APZ. 	<p>Refer to Section 3 (Updated mitigation measures) of this report.</p>
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Office of Environmental and Heritage (OEH) including Heritage Division

Issue	Response
Flooding	
<p>OEH accepts that this development site represents a low flood risk due to being located away from any major drainage path, only being subject to local overland flow type flooding. As such the abbreviated flood assessment presented is justified and sufficiently demonstrates the flood impacts due to this development are expected to be minor.</p>	<p>No further response required.</p>
Aboriginal Cultural Heritage	
<p>Preparation and submission of site cards to AHIMS is required for all sites identified. On the discovery of Aboriginal objects, OEH must be notified under Section 89A of the <i>National Parks and Wildlife Act 1974</i> (NPW Act). An Aboriginal Site Impact Recording Form must be complete and submitted to AHIMS following harm for each site harmed or destroyed from salvage and construction works. Tables 6 and 8 of the ACHAR are missing some AHIMS numbers.</p>	<p>Table 6 and Table 8 of the updated ACHAR (Appendix G) have been updated with all site cards registered to AHIMS. Section 8 of the updated ACHAR states that "Section 89A of the Act also requires that a person who is aware of an Aboriginal object, must notify the Director-General in a prescribed manner. In effect this section requires the completion of OEH AHIMS site cards for all sites located during heritage surveys."</p>

The ACHAR does not outline a procedure to follow if aboriginal artefacts are found at any stage of the life of the Project, instead a commitment to do this was made in the Aboriginal Heritage Management Plan.	Appendix C of the updated ACHAR (Appendix G) details an Unexpected Finds Protocol.
The Cultural Heritage Management Plan (CHMP) should include an unexpected finds procedure to deal with construction activity, undertaken in consultation with the Registered Aboriginal Parties (RAPs). This should be a standalone document.	The Executive Summary and Section 9 (Recommendations) of the updated ACHAR (Appendix G) detail that "The CHMP developed for the Salvage Collection will update the Unexpected Finds Protocol (detailed within Appendix C) with any further project specific information to assist with avoiding and mitigating harm to any further objects located."
Timing of salvage of Aboriginal objects may only occur post determination for SSD.	The Executive Summary and Section 9 (Recommendations) of the updated ACHAR (Appendix G) detail that any salvage must be undertaken post project determination and prior to construction.
Artefact collection and storage must be done either under a Care Agreement deposited with the Australian Museum or in accordance with Requirement 26 of the Code of Practice.	The Executive Summary and Section 7.2 (Consideration of harm) of the updated ACHAR (Appendix G) has been updated to state "The collection will be undertaken in accordance with Requirement 26 of the Code of Practice in relation to the instruction for Aboriginal objects kept or returned to the location they originated from."
Consultation should also occur with RAPs regarding the proposed approach prior to project determination and the approach preferable resolved prior to project determination and documented within the ACHAR. Update section 2 of the ACHAR to include any responses from the RAPs.	Section 2 of the updated ACHAR (Appendix G) has been updated to state that no responses were received from the RAPs.
Section 8 of the Legislation in the ACHAR should read that for SSD that is authorised by a development consent, an AHIP under Section 90 of the NPW Act is not required.	The Executive Summary and Section 8 of the updated ACHAR (Appendix G) have been updated to say "Proposals classified as State Significant Development or State Significant Infrastructure under the EP&A Act have a different assessment regime. For State Significant Development that is authorised by a development consent an AHIP under section 90 of the NPW Act is not required".
<p>Table 6-11 of the EIS should be updated to the following:</p> <ul style="list-style-type: none"> • AH2 – should read "post determination and prior to construction". • AH4 – should read "post determination and prior to construction". • AH5 – Add that an Aboriginal Site Impact Recording Form will be completed and submitted to AHIMS for each site harmed or destroyed from salvage and construction works. Artefact disposition and storage must be done either under a care agreement, deposited within the Australian Museum or in accordance with 	<p>AH2, AH4, AH5 and AH6 have been updated as required. Refer to Section 3 (updated mitigation measures) of this report.</p> <p>It is noted that the conclusion the EIS reads wrong and should state that significantly reduced impacts to Aboriginal cultural heritage would occur from the proposal as a result of updated design and exclusion of artefact scatters 3 and 4 from the development footprint.</p>

<p>Requirement 26 of the Code of Practice (DECCW 2010:35-6). Consultation should occur with RAPs regarding the proposed approach prior to determination and documented in the final ACHAR.</p> <ul style="list-style-type: none"> • AH6 – should read “post determination and prior to construction”. • Conclusion states that no impact to Aboriginal cultural heritage would occur from the proposal after update of the design, which is inconsistent with Section 6.3 and the ACHAR. 	
<p>The date on the front cover and second page says May 2017, while on page 3 and 4 it states May 2018.</p>	<p>Version 2 of the final updated ACHAR has consistently been updated to November 2018.</p>
<p>Comments on the recommendations in the executive summary and in Section 9 of the ACHAR:</p> <ul style="list-style-type: none"> • Recommendation 4 – salvage can only occur post determination and prior to construction. • Recommendation 5 - Artefact disposition and storage must be done either under a care agreement, deposited within the Australian Museum of in accordance with Requirement 26 of the Code of Practice (DECCW 2010:35-6). • Recommendation 6 – collection of Aboriginal objects may only occur post project determination. 	<p>Recommendations within the Executive Summary and Section 9 of the ACHAR have been updated as required.</p>
<p>Table 8 requires updating to say Artefact Scatters 3 and 4 will be removed from harm by removing them from the development footprint.</p>	<p>Table 8 of the ACHAR has been updated to state Artefact Scatters 3 and 4 are outside of the development footprint.</p>
<p>Biodiversity</p>	
<p>The BDAR concludes with a summary of biodiversity credits applicable, and the EIS states these credits will be retired in accordance with the NSW Biodiversity Offset Scheme. The Biodiversity Credit Report however needs to be provided as part of the BDAR.</p>	<p>The draft calculator summary is available in Appendix J of the updated BDAR (refer Appendix B of this report). It has not however been finalised and submitted online, as the Land Management and Biodiversity Conservation (LMBC) group have not released the previous version of the calculator.</p>
<p>There is no clear reason why the Glossy Black-cockatoo and the Swift Parrot was excluded from the BAM calculations.</p>	<p>Table 4.2 of the Updated BDAR (refer Appendix B of this report) states the following:</p> <p>The Glossy Black-cockatoo is excluded as the proposal is not within the geographic restrictions of the species.</p> <p>The Swift Parrot is excluded as proposal is not within mapped important areas of the species.</p>
<p>Two threatened Orchid species were identified as Serious and Irreversible Impact (SAIL) entities that were not surveyed for with presence assumed. SAIL surveys should occur before approval, with the issue of presence resolved prior to approval.</p>	<p>Advice on the approach to survey and risk assessment of the two orchid species was sought from OEH in September 2018. Advice from Simon Stirrat (refer Appendix E of this report) was that if survey was not possible or conditions were</p>

	<p>unsuitable, presence would be assumed as part of the BDAR and BAM Calculator. Additional requirements under Section 10.2.3 of the BAM (<i>Additional Impact Assessment Provisions for Threatened Species and Populations</i>) for each orchid species for OEH to make a decision about the SAIL.</p> <p>A targeted survey for the Oaklands Diuris species was undertaken in November 2018 in suitable habitat on Muntz and Sandigo-Boree Creek Roads. The orchid was not detected during these surveys, however due to a dry winter, very few known populations of the species had emerged (OEH pers com.). As such, an additional test of significance was detailed within the BDAR. The final conclusion was that the proposal was unlikely to have a serious and irreversible impact on the orchid.</p> <p>The Sand-hill Spider Orchid was not detected within the development site, however seasonal conditions were not ideal for this species and they would not have been able to be detected even if survey occurred (OEH pers com.). As such, an additional test of significance was detailed within the BDAR. The final conclusion was that the proposal was unlikely to have a serious and irreversible impact on the orchid due to the limited area of impact.</p> <p>Refer to Section 9.2 of the updated BDAR (refer Appendix B of this report).</p>
Electronic information was provided to OEH as requested to allow an assessment of the BDAR. However, scanned data sheets were not clear, and mapping attributes is not the same as the nomenclature used in the field data sheets. The consultant should provide clearer information when third parties are involved in data validation.	Noted – NGH Environmental are working on rolling out electronic data sheets for all offices.
The EIS refers to revegetation in the context of soil stabilisation and productive use of the solar array land area. Landscape plantings should be within locally occurring native species. DPE's standard conditions of consent include a requirement for planting with local species.	Noted – all landscape plantings will be with locally occurring native species. Safeguard and mitigation measure SO4 details that revegetation should be with native plants. Refer to Section 3 (updated mitigation measures) of this report.
Table 8.1 (row 1) of the BDAR refers to clearing outside optimum windows requiring pre-clearing surveys to ensure no impact on fauna. Surveys, or tree inspection, should be conducted prior to clearing regardless of timing as indicated in the table.	Table 8.1 (row 3) of the BDAR and Safeguard and Mitigation Measures BD4 and BD5 (formerly BD3 and BD4) refer to instigating and implementing a clearing protocol which includes pre-clearing surveys, daily surveys and staged clearing in the presence of an ecologist or trained wildlife handler prior to and during construction. Row 1 of Table 8.1 of the BDAR and Safeguard and Mitigation Measure BD2 (formerly BD1) refers to habitat for the Superb Parrot, Major Mitchell's Cockatoo, Corben's Long-eared Bat and the White-fronted Chat only. Refer to Section 3 (updated mitigation measures) of this report.

EIS Section 6.2.7 *Safeguards and mitigation measures* provides tabulated commitments to mitigation measures for the project. These commitments should be included as conditions of approval. This could potentially be limited to four conditions relating to the preparation of the following plans to be approved by the relevant authorities:

- Biodiversity Management Plan.
- Construction Environmental Management Plan.
- Weed Management Plan.
- Erosion and Sediment Control Plan.

The conditions can stipulate that the plans should include, but not limited to, the relevant commitments from Table 6.10. In addition, these plans should include adaptive management strategies to monitor and respond to impacts on biodiversity values.

Safeguard and Mitigation Measure **BD1** has been included further detailing this requirement. Refer to **Section 3** (updated mitigation measures) of this report.

SafeWork NSW

Issue	Response
No comment made	No further response required

TransGrid

Issue	Response
For the connection of new electricity generating sites, construction and operation of ancillary electrical transmission works should be included in the scope of the planning approval. The scope of works and project boundary should include all works associated with connection to the National Electricity Market.	All required details have been included in the EIS.

2.3 CUMULATIVE IMPACTS

In response to submissions received, this section updates and replaces section 7.5 of the EIS.

Adverse cumulative impacts occur when the infrastructure or activities at the development site exacerbate the negative impacts on other infrastructure or activities occurring nearby. There are 2 approved major projects listed on the Major Projects Register within the Narrandera LGA:

- Sandigo Solar Farm, Sandigo – approved on 27 July 2018 (230 ha, 28 km south-east of Narrandera).
- Yarrabee Park Solar Farm, Morundah – approved on 20 December 2018 (2600 ha – 23 km west of Narrandera).

The proposed Avonlie Solar Farm is within approximately 15 km of both sites. Development of the Avonlie Solar Farm could be concurrent with the development of the Sandigo Solar Farm.

No undetermined development applications are within proximity of the development site (Narrandera Shire Council, 2018).

In the broader study area, there are a number of additional SSD projects that include:

- Deniliquin Ethanol Plant (120 ha).
- Currawarra Solar Farm (near Deniliquin) (250 ha).
- Tarleigh Solar Farm (near Deniliquin) (620 ha).
- Coleambally Solar Farm (570 ha).

However, the proposal is unlikely to adversely impact on traffic, labour and resources required to support the above projects within the Narrandera LGA and broader study area as:

- The projects are likely to have different construction timeframes and staging (other than possibly Sandigo Solar Farm).
- The Currawarra and Tarleigh Solar Farms are also being developed by the proponent and therefore would fall into sequence with Avonlie to reduce any internal resourcing issues and therefore cumulative impacts.
- There is a large construction base in the region (i.e. 16,760 construction-related workers and 2,000 construction-related businesses).
- Development of the Avonlie Solar Farm could be concurrent with the development of the Sandigo Solar Farm. There are significant resources available in the broader region, including Wagga Wagga, for commercial accommodation facilities and employment. No cumulative impacts are anticipated. Local staff will not require commercial accommodation or facilities. The 'external' project labour requirement would be expected to generate an accommodation need for only 4% of total commercial accommodation rooms in the region.

Private accommodation could also be used to support construction staff requirements. ABS Census data for 2016 indicates the region has an above average level of vacant dwellings (10.6%), which is consistent with a well visited region including many holiday homes. Private accommodation provides an economic opportunity for local homeowners. ABS Tourism data also indicates a commercial occupancy rate for 50%, indicating significant capacity to host project workers.

As identified above, the region has a large construction base, and many other businesses associated with activities will be required for the proposal (i.e. transport, trade supply, vehicle and machinery hire, auto mechanics etc.). In order to maximise local business participation, a number of strategies will be employed

including widespread advertising of contracts in local media and directly through the proponent website and using organisations such as the Industry Capability Network (ICN).

The unemployment rate in Narrandera LGA is relatively high (6.6%) in respect to State averages. In September 2017, the region's labour force totalled 57,570 persons including 2,710 unemployed people. In the context of the relatively large labour market and number of job seekers, the proposal is unlikely to face labour supply issues but rather provide short-term opportunities for labour force participants (Appendix K). It is recognised that part of the region is underpinned by the agricultural sector and a significant portion of resources are required on a seasonal basis. Additionally, a number of major infrastructure projects (detailed above) will be potentially developed at the same time as the construction of the proposal. Implications are expected to be minimal given the number of staff required represents less than 1% of the regions total work force who are occupied in construction related activities.

As such, cumulative employment or negative economic impacts are unlikely to affect the SSD proposals occurring within the LGA.

Generally, adverse cumulative impacts to the road network (Sections 3.5.8 and 7.3, and Appendix J of the EIS), noise (Section 6.6 and Appendix G of the EIS), visual effects or scenic landscapes etc. (Section 6.4 and Appendix F of the EIS) are anticipated to be negligible.

Approximately 550 ha of productive cropping land will be temporarily suspended by the proposal. This is 0.07% of all cropping land and 0.06% of all productive land in the NSW Murray Region. The cumulative impact from all above listed developments is a total temporary loss of 4,940 ha of productive farming land. This equates to 0.64% of all cropping land (770,000 ha) and 0.54% of all productive land (910,000) in the NSW Murray Region. As detailed in 6.5.2 of the EIS, the development of a solar farm would potentially result in the following agricultural impacts:

- Limited resource loss for the lifetime of the solar farm.
- Increase in biosecurity risks, primarily due to spread of weeds.
- Increased bushfire risks.

Upon decommissioning of the solar farm, the development footprint would be rehabilitated to restore it to its pre-existing agricultural condition. As such, no long-term cumulative impacts to agricultural enterprise is expected. Refer to Section 6.5 of the EIS for further detail on how impacts to adjacent land uses are proposed to be addressed.

It is however important to note that the proposal will not exclude all agricultural activities. It is the intention of the proponent to continue grazing practices on the subject land, where possible. This will also maintain weeds and fire hazards by maintaining grasses.

3 UPDATED MITIGATION MEASURES

In response to submissions received, this report proposes a number of changes to the safeguards and mitigation measures detailed in the EIS. Table 3-1 provides the full list of safeguards and mitigation measures with those amended highlighted in grey. New text is shown underlined and removed text shown with ~~strike through~~. Table 3-1 provides the full list of safeguards and mitigation measures as amended. This table is subject to the development consent containing conditions covering the same matters, in which case, the development consent conditions will prevail over these measures, and this table is not intended to impose any additional requirements to those specified in the development consent.

*C = Construction Phase, O = Operational Phase and D = Decommission Phase

Table 3-1 Revised safeguards and mitigation measures

No.	Safeguards and mitigation measures	C	O	D
Biodiversity				
<u>BD1</u>	<p>The following plans are to be prepared and approved by the relevant authorities:</p> <ul style="list-style-type: none"> • <u>Biodiversity Management Plan.</u> • <u>Construction Environmental Management Plan.</u> • <u>Pest and Weed Management Plan.</u> • <u>Erosion and Sediment Control Plan.</u> <p>The plans should include but not be limited to the relevant commitments below.</p>	Prior to construction		
BD1 <u>BD2</u>	<ul style="list-style-type: none"> • Hollow-bearing trees would not be removed during breeding and hibernation season (Winter to summer) to mitigate impacts on Superb Parrots, Major Mitchell Cockatoo and Corben's Long-eared Bat. • Old Man Saltbush Shrubland would not be removed during the breeding season (July to March) of the White-fronted Chat to mitigate impacts to this species. • <u>Clearing of mature Grey Box species outside of the two individual trees marked within the BDAR is not permitted along Sandigo-Boree Creek Road and Muntz Road.</u> • If clearing outside of these periods cannot be achieved, pre-clearing surveys would be undertaken by an ecologist or suitably qualified person to ensure no impacts to fauna would occur. 	C		
BD2 <u>BD3</u>	<p>Spring flora surveys by an ecologist/botanist along Muntz Rd and Sandigo-Boree Creek Rd for:</p> <ul style="list-style-type: none"> • <i>Caladenia arenaria</i> (Sandhill Spider Orchid). • <i>Diuris sp. Oaklands, D. L. Jones 5380</i> (Oaklands Diuris). <i>Austrostipa wakoolica</i> (A spear grass). 	Prior to construction determination		
BD3 <u>BD4</u>	<p>Instigating clearing protocols including pre-clearing surveys, daily surveys and staged clearing in the presence of a trained ecologist or licensed wildlife handler during clearing events, including:</p> <ul style="list-style-type: none"> • Pre-clearing checklist. • Tree clearing procedure. 	Prior to and during construction		
BD4 <u>BD5</u>	<p>Implementation of Tree-clearing procedure including relocation of habitat features to adjacent area for habitat enhancement.</p>	C		

No.	Safeguards and mitigation measures	C	O	D
BD5 BD6	<ul style="list-style-type: none"> Approved clearing limits to be clearly delineated with temporary fencing or similar prior to construction commencing. <u>No clearing or damage outside of the agreed development footprint/disturbance area along Sandigo-Boree Creek Road and Muntz Road. These limits are to be clearly delineated, as detailed above.</u> No stockpiling or storage within dripline of any mature trees. In areas to clear adjacent to areas to be retained, chainsaws would be used rather than heavy machinery to minimise risk of unauthorised disturbance. 	Prior to and during construction		
BD6 BD7	The development and implementation of the Construction Environmental Management Plan (CEMP) will include measures to avoid noise encroachment on adjacent habitats such as avoiding night works as much as possible.	Prior to construction		
BD7 BD8	<p>Light shields or daily/seasonal timing of construction and operational activities to reduce impacts of light spill, including:</p> <ul style="list-style-type: none"> Avoid Night Works. Direct lights away from vegetation. 	C	O	<u>D</u>
BD8 BD9	<ul style="list-style-type: none"> Daily monitoring of dust generated by construction and operation activities. Construction would cease if dust observed being blown from site until control measures were implemented. All activities relating to the proposal would be undertaken with the objective of preventing visible dust emissions from the development site. 	C	O	
BD9 BD10	<ul style="list-style-type: none"> Prior to commencement of each phase, a Weed Management Procedure would be developed as part of the Biodiversity Management Plan for the proposal to prevent and minimise the spread of weeds. This would include: <ul style="list-style-type: none"> Management protocol for declared priority weeds under the <i>Biosecurity Act 2015</i> during construction, operation and decommissioning stages. Weed hygiene protocol in relation to plant, machinery, and fill. The Weed Management Procedure would be incorporated into the Biodiversity Management Plan. 	Prior to and during construction	O	D
BD10 BD11	<p>Staff training and site briefing to communicate environmental features to be protected and measures to be implemented:</p> <ul style="list-style-type: none"> Site induction. Toolbox talks. 	C		
BD11 BD12	<p>Preparation and implementation of Biodiversity Management Plan <u>in consultation with Narrandera Shire Council</u> would include protocols for:</p> <ul style="list-style-type: none"> Protection of native vegetation to be retained. Best practice removal and disposal of vegetation. Staged removal of hollow-bearing trees and other habitat features such as fallen logs with attendance by an ecologist. Weed management. Unexpected threatened species finds. Rehabilitation of disturbed areas. <u>Rehabilitation and revegetation of linear corridors along Sandigo-Boree Creek Road to enhance connectivity value outside of the development footprint.</u> 	Prior to and during construction	O	

No.	Safeguards and mitigation measures	C	O	D
BD12 BD13	An erosion and sediment control plan would be prepared in conjunction with the final design and spill management procedures would be implemented.	C	O	D
BD13 BD14	Awareness training during site inductions regarding enforcing site speed limits. Site speed limits to be enforced to minimise fauna strike.	C	O	D
Aboriginal Heritage				
AH1	The development must: <ul style="list-style-type: none"> partially avoid Avonlie Artefact Scatter 1; and completely Avonlie Artefact Scatters 3 and 4 which are outside the development footprint, as per the agreed exclusion zones and development design plans detailed (Figure 6-4).	Design Stage		
AH2	Partial salvage through artefact collection of Avonlie Artefact Scatter 1 must be undertaken where the artefact scatter extends beyond the agreed exclusion zone and development design plans this report. <u>This can be done post project determination and prior to construction.</u>	Post determination and Prior to Construction		
AH3	The development must avoid the site Avonlie Scarred Tree 1. A minimum 10m buffer around the tree should be in place to protect the tree root zone.	Design Stage		
AH4	As complete avoidance of Avonlie Artefact Scatters 2, 3 and 4 and the remaining isolated artefacts within the proposal area is not possible or warranted, the artefacts within the development footprint must be salvaged through collection prior to the proposed work commencing and moved to a safe area within the property that will not be subject to any ground disturbance.	Post determination and Prior to Construction		
AH5	The collection and relocation of the artefacts should be undertaken by an archaeologist with representatives of the RAPs. <u>A new site card/s will need to be completed once the artefacts are moved to record their new location on the AHIMS database. An Aboriginal Site Impact Recording Form will be completed and submitted to AHIMS for each site harmed or destroyed from salvage and construction works. Artefact disposition and storage must be done in accordance with Requirement 26 of the Code of Practice (DECCW 2010:35-6).</u>	Prior to construction		
AH6	RAPs and an archaeologist should be provided an opportunity to collect artefacts from any proposed fencing or firebreak alignments on the boundary of the proposal area, particularly within the designated exclusion areas.	Post determination and Prior to Construction		

No.	Safeguards and mitigation measures	C	O	D
AH7	An unexpected finds protocol (UFP) must be prepared and followed should there be an inadvertent discovery of Aboriginal objects. <u>Notification of the discovery will be made to the Chief Executive of OEH in accordance with s89A of the National Parks and Wildlife Act 1974 (NSW).</u>	Prior to construction		
AH8	In the unlikely event that human remains are discovered during the construction, all work must cease in the immediate vicinity. OEH, the local police, <u>the Coroner</u> and the registered Aboriginal parties should be notified. Further assessment would be undertaken to determine if the remains were Aboriginal or non-Aboriginal. <u>If the remains are Aboriginal, notification of the discovery will be made to the Chief Executive of OEH in accordance with s89A of the National Parks and Wildlife Act 1974 (NSW).</u>	C		
Visual Impacts				
VA1	Avoidance of unnecessary lighting, signage, logos etc.	C		
VA2	Consideration given to controlling the type and colour of building material used especially with the use of light, highly reflective cladding, brick and tile materials which contrast dramatically with the landscape character. Any proposed buildings to be sympathetic to existing architectural elements in the landscape.	C		
VA3	Minimise cut and fill and loss of existing vegetation throughout the construction process. Where appropriate reinstate any loss in vegetation and allow natural vegetation to regrow over any areas of disturbance.	C		
Land Use Impacts				
LU1	Consultation with adjacent landholders would be ongoing to manage interactions between the solar farm and other properties.	C	O	D
LU2	Consultation would be undertaken with TransGrid regarding connection to the substation and design of electricity transmission infrastructure.	C		
LU3	A RDEMP is to be prepared in consultation with NSW Department of Primary Industries and the landowner prior to decommissioning, and in accordance with State Environmental Planning Policy No 55 – Remediation of Land. The Rehabilitation and Decommissioning Management Plan is to include: <ul style="list-style-type: none"> Remove all above ground infrastructure. Remove gravel from internal access tracks where required, in consultation with landowner. Reverse any compaction by mechanical ripping. Reinstate irrigation infrastructure in consultation with landowner, including laser levelling and contour/bund reconstruction where required. 			D
LU4	A Pest and Weed Management Plan would be prepared to manage the occurrence of noxious weeds and pest species across the site during construction and operation. The plans must be prepared in accordance with Narrandera Shire Council and NSW DPI requirements. Where possible weed and pest management would be integrated with adjoining landowners.	C	O	

No.	Safeguards and mitigation measures	C	O	D
LU5	Construction and operations personnel would drive carefully and below the designated speed limit according to the Traffic Management Plan to minimise dust generation and disturbance to livestock.	C	O	D
LU6	Underground cabling and other works to remain in situ following decommissioning of the solar farm would be installed deeper than 500 mm to allow cultivated cropping to resume following decommissioning.	C		
LU7	If possible and practical, sheep grazing would be used as a preferred option to control weeds and grass growth, and to maintain agricultural production at the site.		O	
Noise Impacts				
NS1	Works should be undertaken during standard working hours only (except for the connection to substation) Monday – Friday 7 am to 6 pm Saturday 8 am to 1 pm No work on Sundays or public holidays	C		
NS2	Development of a Construction and Operational Noise Management Protocol to minimise noise emissions, manage out of hours works (minor) to be inaudible and respond to community concern.	Prior to construction	O	
NS3	Operate plant in a conservative manner, which includes: <ul style="list-style-type: none"> Selection of the quietest suitable machinery. Avoidance of noisy plant working simultaneously where practical. Utilise broadband reverse alarm in lieu of high frequency type. 	C	O	D
NS4	All staff on-site should be informed of procedures to operate plant and equipment in a quiet and efficient manner. Provide toolbox meetings, training and education.	C	O	D
NS5	A letterbox drop would be prepared and provided to residences in close proximity to the works. The letter would contain details of the proposed works including timing and duration and a contact person for any enquiries or complaints.	Prior to and during construction	O	D
NS6	Regular inspection and maintenance of equipment to ensure that plant is in good condition.	C	O	D
NS7	Complete a one-off noise validation monitoring assessment to quantify emissions and confirm emissions meet relevant criteria.	C	O	
Soil				
SO1	A Soil and Water Management Plan and Erosion and Sediment Control Plans would be prepared, implemented and monitored during the construction and decommissioning of the proposal, in accordance with Landcom (2004), to minimise soil (and water) impacts. These plans would include provisions such as: <ul style="list-style-type: none"> At the commencement of the works, and progressively during construction, install the required erosion control and sediment capture measures. 	Prior to and during construction		D

No.	Safeguards and mitigation measures	C	O	D
	<ul style="list-style-type: none"> Regularly inspect erosion and sediment controls, particularly following rainfall. Maintain a register of inspection and maintenance of erosion control and sediment capture measures. Ensure there are appropriate erosion and sediment control measures in place to prevent erosion and sedimentation occurring within the stormwater channel during concentrated flows. Ensure that machinery arrives on site in a clean, washed condition, free of fluid leaks. Ensure that machinery leaves the site in a clean condition to avoid tracking of sediment onto public roads. In all excavation activities, separate subsoils and topsoils and ensure that they are replaced in their natural configuration to assist revegetation. <u>Ground water impacts will be readdressed once excavation depths have been confirmed as part of the final design.</u> During excavation activities, monitor for increases in salinity, reduce water inputs and remediate the site with salt tolerant vegetation. Stockpile topsoil appropriately to minimise weed infestation, maintain soil organic matter, and maintain soil structure and microbial activity. Manage works in consideration of heavy rainfall events. Areas of disturbed soil would be rehabilitated promptly and progressively during construction. 			
SO2	A comprehensive Emergency Response Plan (ERP) would be developed for the site and specifically address foreseeable on-site and off-site emergency incidents. It would detail appropriate risk control measures that would need to be implemented to safely mitigate potential risk to health and safety of firefighters and first responders, <u>including that</u> in the case of a hazardous spill.	C	O	D
SO3	<p>A Spill and Contamination Response Plan (SCRCP) would be developed and implemented during construction, operation and decommissioning to prevent contaminants affecting adjacent surrounding environments. It would include measures to:</p> <ul style="list-style-type: none"> Manage the storage of any potential contaminants onsite. Mitigate the effects of soil contamination by fuels or other chemicals (including emergency response and EPA notification procedures and remediation). A protocol would be developed in relation to discovering buried contaminants within the development site (e.g. pesticide containers, if any). It would include stop work, remediation and disposal requirements. 	C	O	D
SO4	Any area that was temporarily used during construction (laydown and trailer complex areas) would be restored to original condition or re-vegetated with native plants.	C	O	D
SO5	Soil should be treated with gypsum where required.	C		
SO6	<p>Best Management Practices (BMPs) should be employed where applicable to reduce the risk of erosion and sedimentation control:</p> <ul style="list-style-type: none"> Integrate project design with any site constraints. Preserve and stabilise drainageways. 	C	O	D

No.	Safeguards and mitigation measures	C	O	D
	<ul style="list-style-type: none"> Minimise the extent and duration of disturbance. Control stormwater flows onto, through and from the site in stable drainage structures. Install perimeter controls. Stabilise disturbed areas promptly. Protect steep slopes. Employ the use of sediment control measures to prevent off- and on-site damage. Protect inlets, storm drain outlets and culverts. Provide access and general construction controls. <p>Inspect and maintain sediment and erosion control measures regularly.</p>			
Water Use and Water Quality				
WA1	All staff would be appropriately trained through toolbox talks for the minimisation and management of accidental spills.	C	O	D
WA2	All fuels, chemicals, and liquids would be stored at least 50 m away from any waterways or drainage lines and would be stored in an impervious bunded area.	C	O	D
WA3	Adequate incident management procedures will be incorporated into the Construction, Operation and Decommissioning Environmental Management Plans, including requirement to notify the relevant agencies of pollution incidents that cause material harm to the environment (refer s147-153 Protection of the Environment Operations Act).	C	O	D
WA4	The refuelling of plant and maintenance of machinery would be undertaken in impervious bunded areas.	C	O	D
WA5	Machinery would be checked daily to ensure there is no oil, fuel or other liquids leaking from the machinery. All staff would be appropriately trained through toolbox talks for the minimisation and management of accidental spills.	C		D
WA6	Emergency management procedures will be prepared in consultation with Council.	C	O	
WA7	Erosion and sediment control measures that would be implemented to mitigate any impacts in accordance with Managing Urban Stormwater: Soils & Construction (Landcom 2004).	C	O	D
WA8	A comprehensive Emergency Response Plan (ERP) would be developed for the site and specifically address foreseeable on-site and off-site emergency incidents in consultation with Narrandera Shire Council in accordance with the NSW Government's Flood Prone Land Policy and the Floodplain Development Manual. It would detail appropriate risk control measures that would need to be implemented to safely mitigate potential risk to health and safety of firefighters and first responders in the case of a hazardous spill or flood risk.	C	O	D
WA9	<u>Water from dams will only be used for construction and operation of the proposal within the landholding.</u>	C	O	D
WA10	<u>The proponent will obtain the relevant licence and/or entitlement for groundwater extraction prior to any extraction, if it is proposed to be used.</u>	C	O	D

No.	Safeguards and mitigation measures	C	O	D
Traffic, Transport and Road Safety				
TT1	<p>A Haulage Plan would be developed <u>in consultation with the relevant road authority (Council and RMS)</u> and implemented during construction, operation and decommissioning, including but not limited to:</p> <ul style="list-style-type: none"> • Assessment of road routes to minimise impacts on transport infrastructure. • Scheduling of deliveries of major components to minimise safety risks (on other local traffic). • Traffic controls (signage and speed restrictions etc.). 	<u>Prior to construction and during construction</u>	O	D
TT2	<p>A Traffic Management Plan would be developed <u>in consultation with the relevant road authority (Council and RMS)</u> and implemented during construction and decommissioning. The plan would include, but not be limited to:</p> <ul style="list-style-type: none"> • Prior to construction, a pre-conditioning survey of the relevant sections of the existing road network, to be undertaken <u>by an appropriately qualified person</u> in consultation with Council. • Assessment of road condition prior to construction on all local roads that would be utilised. • A program for monitoring road condition, to repair damage exacerbated by the construction and decommissioning traffic. • <u>Finalised detail of any required road-specific, construction staff access and public safety mitigation measures (including but not limited to project generated traffic, driver fatigue and behaviour, adverse climatic conditions, dust, public traffic including school bus activity, glint and glare etc.).</u> • The designated routes <u>and adherence</u> of construction traffic to the site. • Carpooling/shuttle bus arrangements to minimise vehicle numbers during construction. • Scheduling of deliveries <u>and construction activities</u>. • Community consultation regarding traffic impacts for nearby residents. • Consideration of cumulative impacts. • Traffic controls (speed limits, signage, etc.). • Procedure to monitor traffic impacts and adapt controls (where required) to reduce the impacts. • Providing a contact phone number to enable any issues or concerns to be rapidly identified and addressed through appropriate procedures. • Water to be used on unsealed roads to minimise dust generation through increased traffic use. • Following construction, a post condition survey of the relevant sections of the existing road network to be undertaken to ensure it is of similar condition to that prior to construction. <u>Any damage will be repaired at cost to the proponent.</u> • <u>A driver code of conduct to address hazards.</u> 	<u>Prior to construction and during construction</u>		D

No.	Safeguards and mitigation measures	C	O	D
TT3	The proponent would consult with Narrandera Shire Council (being the road consent authority on local roads) Sandigo-Boree Creek and Muntz Roads. The upgrade would be subject to detailed design and would be designed and constructed to the relevant Australian road design standards by a suitably qualified person.	Design Stage		
TT3	The proponent would consult with Narrandera Shire Council regarding the proposed addition of three passing bays along Sandigo-Boree Creek Road on the eastern boundary between Sturt Highway and Muntz Road. The upgrade would be subject to detailed design and would be designed and constructed to the relevant Australian road design standards. See the EIS for proposed passing bay design.	C		
TT4	The proponent would consult with Narrandera Shire Council regarding the proposed widening of the S bend on Muntz Road and the addition of four passing bays to the west of the S bend, prior to site access. The upgrade would be subject to detailed design and would be designed and constructed to the relevant Australian road design standards. See the EIS for proposed passing bay design.	C		
TT4	The proponent would consult with RMS and Narrandera Shire Council regarding the proposed BAR and BAL AUL(s) turning treatments for the Sturt Highway at the intersection with Sandigo-Boree Creek Road, <u>the BAR/BAL treatment at the intersection of Sandigo-Boree Creek and Muntz Roads, and provision of two travel lanes and sealing of Sandigo-Boree Creek Road for its entire length.</u> The upgrade would be subject to detailed design and would be designed and constructed to the relevant Australian road design standards <u>by a suitably qualified person.</u> See the EIS for proposed intersection design.	Design Stage		
TT6	The proponent would consult with Narrandera Shire Council regarding the proposed widening of the southern boundary of Muntz Road from the intersection with Sandigo-Boree Creek Road. The upgrade would be subject to detailed design and would be designed and constructed to the relevant Australian road design standards. See the EIS for proposed intersection design.	C		
TT5	The proponent would repair any damage to public infrastructure resulting from project traffic (except that resulting from normal wear and tear) as required at the proponent's cost.	C		D
TT6	A Flood Response Plan would be prepared <u>and implemented</u> that will include an access contingency plan in times of flooding when the Sturt Highway could be closed.	C	O	D
TT7	<u>All road upgrades will be designed and constructed so as not to interfere with the capacity of the current roadside drainage network, and to prevent water from proceeding into, or ponding on, the carriageway of the Sturt Highway. If a culvert is required in the clear zone of the carriageway for the posted speed limit it will be constructed with a traversable type headwall.</u>	Design Stage		
TT8	A Works Authorisation Deed (WAD) with RMS is required <u>prior to finalising design or construction. All requirements of the WAD will be addressed and adhered to.</u>	Design Stage		
Climate and Air Quality				

No.	Safeguards and mitigation measures	C	O	D
AQ1	A Complaints Procedure would be prepared and implemented to promptly identify and respond to issues generating complaints.	C	O	D
AQ2	Protocols to guide vehicle and construction equipment use, to minimise emissions would be included and implemented in Construction and Operational Environmental Management Plans. This would include but not be limited to Australian standards and POEO Act requirements.	C	O	D
AQ3	During construction, operation and decommissioning, dust would be managed to prevent dust leaving the development site. This includes dust from stockpiled materials <u>and unsealed roads</u> .	C	O	D
Socioeconomic and Community				
SE1	A Community Consultation Plan would be implemented during construction <u>and operation of the proposal</u> to manage impacts to community stakeholders, including but not limited to: <ul style="list-style-type: none"> • Protocols to keep the community updated about the progress of the project and project benefits. • Protocols to inform relevant stakeholders of potential impacts (haulage, noise etc.). • Protocols to respond to any complaints received. 	C	O	
SE2	Liaison with local industry representatives to maximise the use of local contractors, manufacturing facilities and materials. <u>Tenders/contracts will be advertised with a preference for local staff, with a higher weighting for local staff, trainees or apprentices hired and/or indigenous staff applied through the procurement process.</u>	C	O	
SE3	Liaison with local representatives regarding accommodation options for staff to minimise adverse impacts on local services.	C		D
SE4	Liaison with local tourism industry representatives to manage potential timing conflicts or cooperation opportunities with local events.	C		D
Resource Use and Waste Generation				
WM1	A Waste Management Plan (WMP) would be developed and implemented during construction, operation and decommissioning to minimise wastes. It would include but not be limited to: <ul style="list-style-type: none"> • Identification of opportunities to avoid, reuse and recycle, in accordance with the waste hierarchy. • Quantification and classification of all waste streams. • Provision for recycling management onsite. • Provision of toilet facilities for onsite workers and how sullage would be disposed of (i.e., pump out to local sewage treatment plant). • Tracking of all waste leaving the site under the POEO Act. • Disposal of waste at facilities permitted to accept the waste. • Requirements for hauling waste (such as covered loads). 	C	O	D
Hazards				
HA1	An Emergency Response Plan, incorporating an Evacuation Plan, Flood Response Plan, <u>Fire Response Plan</u> and SCRP would be developed prior to commissioning the solar farm. <u>A copy of the plan would be kept on site in a prominent position adjacent to the site entry point at all times. The plan would</u>	C	O	D

No.	Safeguards and mitigation measures	C	O	D
	<p><u>be implemented during construction, operation and decommissioning, and include but not limited to:</u></p> <ul style="list-style-type: none"> • Address foreseeable on-site and off-site emergency events. • Details appropriate risk control measures that would need to be implemented to safely mitigate potential risk to the health and safety of firefighters, SES and other first responders. • Other risk control measures that may need to be implemented in an emergency due to any unique hazards specific to the site. • Two copies of the ERP are to be stored in a prominent 'Emergency Information Cabinet' located directly adjacent the site's main entry points. • Once constructed and prior to operation, the operator is to make contact with the Local Emergency Management Committee to register the site as hazardous. 			
HA2	Dangerous or hazardous materials would be transported, stored and handled in accordance with AS1940-2004: <i>The storage and handling of flammable and combustible liquids</i> , and the ADG Code where relevant. All potential pollutants kept on-site would be stored in accordance with relevant HAZMAT requirements and banded.	C	O	D
HA3	The transportation of new and waste lithium-ion batteries would comply with the requirements of the Dangerous Goods Code, including specific 'special provisions' and 'packing instructions' applying to the transportation of Li-ion batteries.	C	O	D
HA4	All design and engineering would be undertaken by qualified competent persons with the support of specialists as required.	C		
HA5	All electrical equipment would be designed in accordance with relevant codes and industry best practice standards in Australia.	C		
HA6	Design of electrical infrastructure would minimise EMFs (underground).	C		
HA7	<p>A Bush Fire Management Plan would be developed and implemented during construction, operation and decommissioning, with input from the RFS, and include but not be limited to:</p> <ul style="list-style-type: none"> • Management of activities with a risk of fire ignition. • Management of fuel loads onsite. • Storage and maintenance of firefighting equipment, including siting and provision of adequate water supplies for bush fire suppression. • The below requirements of Planning for Bush Fire Protection 2006: <ul style="list-style-type: none"> ○ Identifying and maintaining asset protection zones. ○ Providing adequate egress/access to the site. ○ Emergency evacuation measures. • Operational procedures relating to mitigation and suppression of bush fire relevant to the solar farm. • <u>24-hour emergency contact details.</u> • <u>Site infrastructure plan</u> • <u>Firefighting water supply plan.</u> • <u>Site access and internal road plan.</u> 	C	O	D
HA8	<u>The entire proposal is to be managed as an APZ as outlined within Section 4.1.3 of Planning for Bush Fire Protection 2006 and the NSW Rural Fire Service's</u>	C	O	D

No.	Safeguards and mitigation measures	C	O	D
	<u>document <i>Standards for Asset Protection Zones</i>. A 10 m defensible space, managed as an APZ, shall be provided around the perimeter of the solar array development site and any proposed building or structure to allow for emergency service personnel to undertake property protection activities.</u>			
HA9	A minimum 20,000 litre water supply tank fitted with a 65 mm storz fitting shall be located adjoining the internal property access road within the required APZ.	C		
HA8	A comprehensive Emergency Fire Response Plan would be developed and implemented during construction, operation and decommissioning, and include but not limited to: <ul style="list-style-type: none"> Address foreseeable on-site and off-site fire events. Details appropriate risk control measures that would need to be implemented to safely mitigate potential risk to the health and safety of firefighters and other first responders. Other risk control measures that may need to be implemented in a fire emergency due to any unique hazards specific to the site. 	C	O	D
Historic Heritage				
HH1	Should a relic be located, <u>all works in the immediate vicinity will cease, and the NSW Heritage Council will be notified prior to further work being carried out in the vicinity in accordance with s146 of the <i>Heritage Act 1977</i>.</u> <u>If the relic is human remains, then the local police and the Coroner will also be notified.</u>	C	O	D

REFERENCES

Powertec 2014. Mobile Network Guide – Improving Mobile Signal. Accessed online October 2018 from < <http://mobilenetworkguide.com.au/pdf/Mobile-Network-Guide-Improving-Mobile-Signal.pdf> >

OzTower 2018. Tower Search. Accessed online October 2018 from < <https://oztowers.com.au/> >

Telstra 2018. Our Coverage – Coverage Map. Accessed online October 20178 from < <https://www.telstra.com.au/coverage-networks/our-coverage> >

Optus 2018. Optus – Mobile Netowrk Coverage. Accessed online October 2018 from < <https://www.optus.com.au/shop/mobile/network/coverage> >

Vodaphone 2018. Vodaphone – Coverage Checker. Accessed online October 2018 from < https://www.vodafone.com.au/network/coverage-checker?cmp=cbu:post:all:cus:edm:life:postpaid_welcome_existing:ri >

APPENDIX A UPDDATED DESIGN

APPENDIX B BIODIVERSITY DEVELOPMENT ASSESSMENT REPORT

APPENDIX C ADDENDUM ABORIGINAL CULTURAL HERITAGE ASSESSMENT REPORT

APPENDIX D SUBMISSIONS

APPENDIX E ADDITIONAL INFORMATION

APPENDIX F ROAD DESIGN UPGRADE

APPENDIX G ABORIGINAL CULTURAL HERITAGE ASSESSMENT REPORT VERSION 2