



Submissions Report

WELLINGTON NORTH SOLAR PLANT



MARCH 2019



Document Verification



Project Title:

Wellington North Solar Plant

Project Number: 17-382

Project File Name: Submissions Report_final v1 290319

| Revision | Date | Prepared by (name) | Reviewed by (name) | Approved by (name) |
|----------|----------|--------------------------------|--------------------|--------------------|
| Draft v1 | 12/10/18 | Jane Blomfield | Brooke Marshall | Brooke Marshall |
| Draft v2 | 25/01/19 | Jane Blomfield | Brooke Marshall | Brooke Marshall |
| Final v1 | 19/03/19 | Jane Blomfield Johanna Duck | Brooke Marshall | Brooke Marshall |

NGH Environmental prints all documents on environmentally sustainable paper including paper made from bagasse (a by-product of sugar production) or recycled paper.

NGH Environmental Pty Ltd (ACN: 124 444 622. ABN: 31 124 444 622).

www.nghenvironmental.com.au

e: ngh@nghenvironmental.com.au

Bega - ACT and South East NSW
suite 1, 216 carp st (po box 470)
bega nsw 2550 (t 02 6492 8333)

Sydney Region
18/21 mary st
surry hills nsw 2010 (t 02 8202 8333)

Canberra - NSW SE & ACT
8/27 yellourn st (po box 62)
fyshwick act 2609 (t 02 6280 5053)

Brisbane
level 7, 320 adelaide st
brisbane qld 4000 (t 07 3511 0238)

Newcastle - Hunter and North Coast
7/11 union st
newcastle west nsw 2302 (t 02 4929 2301)

Wagga Wagga - Riverina and Western NSW
suite 1, 39 fitzmaurice st (po box 5464)
wagga wagga nsw 2650 (t 02 6971 9696)

Bathurst - Central West and Orana
35 morrisset st (po box 434)
bathurst nsw 2795 (t 02 6331 4541)

CONTENTS

| | | |
|----------|---|-----------|
| 1 | INTRODUCTION..... | 1 |
| 1.1 | BACKGROUND | 1 |
| 1.2 | PURPOSE OF REPORT | 1 |
| 2 | OBJECTIVES, BENEFITS AND JUSTIFICATION FOR THE PROJECT | 2 |
| 2.1 | PROJECT OBJECTIVES | 2 |
| 2.2 | PROJECT BENEFITS | 3 |
| 2.3 | PROJECT JUSTIFICATION..... | 4 |
| 3 | THE PROPOSAL..... | 4 |
| 3.1 | PROPOSAL CHANGES SINCE EIS EXHIBITION | 4 |
| 3.2 | AMENDMENT REPORT | 5 |
| 3.3 | INCLUSION OF ANY ADDITIONAL ASSESSMENT | 5 |
| 4 | CONSIDERATION OF SUBMISSIONS | 8 |
| 4.1 | EXHIBITION AND LOCATION | 8 |
| 4.2 | SUBMISSIONS RECEIVED | 8 |
| 4.3 | ADDITIONAL CONSULTATION..... | 9 |
| 4.3.1 | General community | 9 |
| 4.3.2 | Aboriginal community representatives | 9 |
| 5 | PROPONENTS RESPONSE TO COMMUNITY SUBMISSIONS..... | 10 |
| 6 | PROPONENTS RESPONSE TO GOVERNMENT AGENCY SUBMISSIONS | 30 |
| 6.1 | NSW DPE, DIVISION OF RESOURCES AND GEOSCIENCE | 30 |
| 6.2 | NSW EPA | 30 |
| 6.3 | NSW OFFICE OF ENVIRONMENT AND HERITAGE..... | 31 |
| 6.4 | NSW RURAL FIRE SERVICE..... | 33 |
| 6.5 | NSW TRANSPORT, ROADS AND MARITIME SERVICES (RMS) | 36 |
| 6.6 | DEPARTMENT OF INDUSTRY | 38 |
| 6.7 | HERITAGE COUNCIL OF NSW | 45 |
| 6.8 | DUBBO REGIONAL COUNCIL | 46 |
| 6.9 | NSW FIRE AND RESCUE | 55 |
| 7 | ENVIRONMENTAL MANAGEMENT CHANGES | 56 |
| 8 | CONCLUSION | 60 |

| | | |
|-------------------|---|------------|
| 9 | REFERENCES..... | 62 |
| APPENDIX A | REVISED MITIGATION MEASURES..... | A-I |
| APPENDIX B | ABORIGINAL CULTURAL HERITAGE ASSESSMENT REPORT | B-I |
| APPENDIX C | BIODIVERSITY DEVELOPMENT ASSESSMENT REPORT | C-I |
| APPENDIX D | HISTORICAL ARCHAEOLOGY ASSESSMENT | D-I |
| APPENDIX E | DRUMMOND WEST CORRESPONDENCE | E-I |

TABLES

| | |
|--|----|
| Table 2-1 Objectives of the Wellington North Solar Plant proposal..... | 2 |
| Table 4-1 Responses received..... | 8 |
| Table 5-1 Proponents response to issues raised by the community. | 10 |
| Table 6-1 Agency submissions and proponent’s response..... | 30 |
| Table 7-1 New or modified mitigation measures, that now form a commitment of the proposal..... | 56 |

FIGURES

| | |
|--|----|
| Figure 3-1 Updated Proposal location. | 6 |
| Figure 3-2 Updated constraints mapping reflecting the proposal changes, showing the approved Wellington Solar Farm (First Solar) to the south of the site..... | 7 |
| Figure 5-1 Measures of air temperature within and outside of the PV array (source:- Barron-Gafford, 2018). | 26 |

ACRONYMS AND ABBREVIATIONS

| | |
|---------------------|---|
| AC | alternating current |
| ACHA | Aboriginal Cultural Heritage Assessment |
| ACHCRP | Aboriginal cultural heritage consultation requirements for proponents |
| APZ | Asset Protection Zone |
| ARENA | Australian Renewable Energy Agency |
| BAL | Basic Left Turn |
| BAR | Basic Right Turn |
| BDAR | Biodiversity Development Assessment Report |
| BFMP | Bush Fire Management Plan |
| BSAL | Biophysical strategic agricultural land |
| CEMP | Construction environmental management plan |
| CSIRO | Commonwealth Scientific and Industrial Research Organisation |
| dB(A) | Decibels, a measure of A-weighted (<i>c.f.</i>) sound levels. |
| DECC | Department of Climate Change (now OEH) |
| DPE | Department of Planning and Environment |
| DPI | Department of Primary Industries |
| DoI | Department of Industry |
| EIS | Environmental Impact Statement |
| EMFs | Electromagnetic fields |
| EMP | Emergency Management Plan |
| EP&A Act | <i>Environmental Planning and Assessment Act 1979</i> (NSW) |
| EPA | (NSW) Environment Protection Authority |
| EPL | Environment Protection Licence, issued under the POEO Act (<i>c.f.</i>) |
| ERP | Emergency Response Plan |
| GDE | Groundwater Dependent Ecosystems |
| GWh | Gigawatt hours |
| ha | hectares |
| ICNG | Interim Construction Noise Guideline |
| ICNIRP | International Commission on Non-Ionizing Radiation Protection |
| LEMC | local emergency management committee |
| LGA | Local Government Area |
| m | metres |
| mm | millimetres |
| ML | Megalitres |
| MW | Megawatt |
| MWh | Megawatt hours |

| | |
|----------------|--|
| NSW | New South Wales |
| O&M | Office and Maintenance |
| OEH | (NSW) Office of Environment and Heritage, formerly Department of Environment, Climate Change and Water |
| PV | Photovoltaic |
| RAPs | Registered Aboriginal Parties |
| SSD | State Significant Development |
| SWMP | Soil and Water Management Plan |
| TMP | Traffic Management Plan |
| VIA | Visual Impact Assessment |
| WAL | Water Allocation License |
| WMP | Waste Management Plan |

1 INTRODUCTION

1.1 BACKGROUND

The Wellington North Solar Plant Proposal site is located approximately 7 kilometres north east of Wellington, within the Dubbo Regional Local Government Area (LGA). The proposal includes the construction, operation and decommissioning of a photovoltaic (PV) solar plant and associated infrastructure that would produce up to 300 Megawatts (MW) of electricity. The proponent is Wellington North Solar Farm Pty Limited (AGL), a subsidiary of AGL Energy Limited.

The proposal requires development consent under Part 4 of the *Environmental Planning and Assessment Act 1979 (EP&A Act)*. The proposal is considered State Significant Development (SSD) as it is development for the purpose of electricity generating works with a capital cost of greater than \$30 million (clause 20, Schedule 1 of the *State Environmental Planning Policy (State and Regional Development) 2011*).

An Environmental Impact Statement (EIS) was prepared by NGH Environmental (NGH Environmental, 2018) on behalf of the proponent and was submitted to NSW Department of Planning and Environment (DPE). The EIS was placed on public exhibition from 22 August 2018 to 19 September 2018. During this period, submissions were invited from the local community, government agencies, interested parties and other stakeholders.

The Wellington North Solar Plant Proposal remains generally as detailed in Section 4 of the EIS (NGH Environmental, 2018). AGL are proposing some minor changes in regard to the transmission line and site access which is outlined in Section 3 and further addressed in an Amendment Report (NGH Environmental, 2019).

1.2 PURPOSE OF REPORT

NGH Environmental has prepared this Submissions Report on behalf of the proponent to fulfil the requirements of Schedule 1 of the *Environmental Planning and Assessment Act 1979*. The key purpose of the Submissions Report is to:

- 1) Describe any changes to the proposal, since the exhibition of the Wellington North Solar Plant EIS.
- 2) Consider and respond to the issues raised by the public and agencies, in response to the exhibition of the Wellington North Solar Plant EIS.
- 3) Provide a revised set of proposed mitigation measures to address points 1) and 2), as required.

In summary, two changes have been made since the exhibition of the Wellington North Solar Plant EIS. These changes were made in response to submissions (contained within this document) and through further detailed design. The changes relate to the transmission line and access options and are addressed in Section 3 of this report as well as within the Amendment Report (NGH Environmental, 2019).

Ten mitigation measures have been added /modified and now form part of the Proposal's environmental management commitments. These address construction access and road upgrades, bushfire and emergency response management, soil and water management and rehabilitation. These are set out in Section 7 of this report.

2 OBJECTIVES, BENEFITS AND JUSTIFICATION FOR THE PROJECT

2.1 PROJECT OBJECTIVES

The objectives of the Wellington North Solar Plant proposal remain as they were described in the EIS. The proposal objectives and how they have been met are outlined in Table 2-1.

Table 2-1 Objectives of the Wellington North Solar Plant proposal.

| Proposal objective | How would the Proposal achieve this objective? |
|---|--|
| Develop an economically viable commercial solar electricity generation project, which contributes to the provision of affordable, sustainable and reliable electricity for NSW; | The selected site has favourable solar irradiation and the proximity to the existing substation makes the site an economically viable commercial project. The Wellington North Solar Plant would form an integral part of a broader AGL plan to provide affordable, reliable and sustainable electricity to NSW homes and businesses. The plan includes this proposal, other renewables, storage projects, and gas-fired electricity generation. |
| Support AGL Energy Limited's NSW Generation Plan, following the retirement of ageing power stations; | The Wellington North Solar Plant proposal is a renewable energy project that would generate approximately 300MW (AC) per year. This would contribute 19% of the NSW Generation Plan's 1600MW 'new renewables' target. |
| Produce clean and renewable energy to help reduce greenhouse gas (GHG) emissions and contribute to efforts to meet state and national climate change mitigation targets; | The Proposal would provide enough clean, renewable energy for about 114,000 average NSW homes while displacing approximately 581,000 metric tonnes of carbon dioxide – the equivalent of taking approximately 125,000 cars off the road. |
| Obtain broad support for the solar plant from the local community; | Community engagement activities have been undertaken to inform the community of the Proposal and capture feedback to assist the development of the most appropriate solar plan project. The feedback received to date has been included within this EIS. |

| Proposal objective | How would the Proposal achieve this objective? |
|---|--|
| Provide local and regional employment opportunities as well as other community benefits; | <p>Approximately 250 construction jobs would be created during peak construction and during operation the Proposal would employ approximately 2-4 full time staff.</p> <p>It is expected that in addition to the full-time staff, there would be a range of opportunities for local suppliers in general trade and support services, such as:</p> <ul style="list-style-type: none"> • Vegetation management; clearing, mulching, rehabilitation. • Fencing services. • Electrical work. • General civil services, such as grader, dozer and excavator operators. • Water services. • Security services. • Traffic management. • General construction services. • Meals and accommodation services. |
| Avoid / minimise environmental impacts wherever practicable, through careful design and best practice environmental protection and impact mitigation. | <p>The maximum impact area presented is responsive to the site's key environmental constraints, identified through detailed investigations of:</p> <ul style="list-style-type: none"> • Biodiversity. • Heritage. • Waterways. |

2.2 PROJECT BENEFITS

The Proposal would result in a number of benefits including:

- Support Commonwealth and NSW climate change commitments.
- Generation of enough clean, renewable energy for about 114,000 average NSW homes.
- Displacement of approximately 581,000 metric tonnes of carbon dioxide – the equivalent of taking about 125,000 cars off the road.
- Enhancement of electricity reliability and security.
- Creation of local job opportunities.
- Injection of expenditure in the local area and spread of benefits through a local community energy offer and a local community investment program.
- Provision of a new land use thereby diversifying the regional economy.

In summary, there is a clear need for the Proposal to meet Australia's greenhouse gas reduction, renewable energy and electricity needs. It would additionally bring local benefits such as job opportunities and local expenditure.

2.3 PROJECT JUSTIFICATION

There are clear justifications for the further development of solar resources in Australia, and specifically at the Wellington North Solar Plant Proposal site:

- The Proposal supports Australia's international commitments to mitigate climate change and NSW targets for renewable energy development.
- The Proposal has benefits that range from providing enhanced electricity reliability and security to the national electricity grid to local economic stimulus and community benefits.

The site, technology and size of the Proposal have been developed in full consideration of alternatives, to ensure the operational site would maximise the benefits of the Proposal to the locality and region in the long term. This section sets out the justification for the Proposal and how the preferred option, that is assessed in the EIS and Amendment Report (NGH Environmental, 2019), was selected based on these considerations.

3 THE PROPOSAL

3.1 PROPOSAL CHANGES SINCE EIS EXHIBITION

The Wellington North Solar Plant proposal remains generally as detailed in Section 4 of the EIS (NGH Environmental 2018). However, two changes have been made and are detailed in this section.

Based on the submissions, AGL has made the following two changes to the proposal:

- **Transmission line route:** Two options were described in the EIS. AGL now proposes an alternative eastern transmission line, not previously described (this is separately assessed in the Amendment Report, discussed below). The western and eastern transmission line options displayed in the EIS are no longer part of the proposal.
- **Site access:** Three options were described in the EIS. AGL has now committed that all construction site access would be via Campbells Lane, which is one of these options. While the other two access points off Goolma Road are existing access points to the proposed site and may be utilised during operation, they would not be used during construction. This would not result in any additional impacts and is considered to have therefore been fully assessed by the EIS.

These changes can be seen in the updated proposal layout and constraints map provided in Figure 3-1 and Figure 3-2.

3.2 AMENDMENT REPORT

An Amendment Report has been prepared by NGH Environmental (NGH, 2019a) on behalf of AGL to assess the proposed changes relating to the transmission line; its focus is the new eastern transmission line not previously described or assessed in the EIS. The Amendment Report has been prepared separate to this Submissions Report. The Amendment Report also includes the following specialist reports that have been updated based on the proposal changes:

- Updated Biodiversity Development Assessment Report (NGH 2019c) – removing the western and eastern transmission line options displayed in the EIS and including the new eastern line not previously described or assessed.
- Updated Aboriginal Cultural Heritage Assessment (NGH, 2019b) – as above, removing the western and eastern transmission line options displayed in the EIS and including the new eastern line not previously described or assessed.
- Noise and Vibration Assessment – new report specific to the new eastern line not previously described or assessed.

Amended mitigation measures based on the above assessments are detailed in the Amendment Report and have been included in the Appendix A - Revised mitigation measures.

3.3 INCLUSION OF ANY ADDITIONAL ASSESSMENT

In the preparation of this response to submissions, the following additional survey work has been undertaken:

- Koala surveys to inform the biodiversity assessment, in response to a submission from Office of Environment and Heritage (OEH).

The Biodiversity Development Assessment Report (BDAR) has been updated to include the results of this survey (as well as the new transmission line route discussed above, to provide one updated offset credit requirement). The updated report (NGH, 2019b) is included in Appendix C of this report (and is also included as an appendix of the Amendment Report).

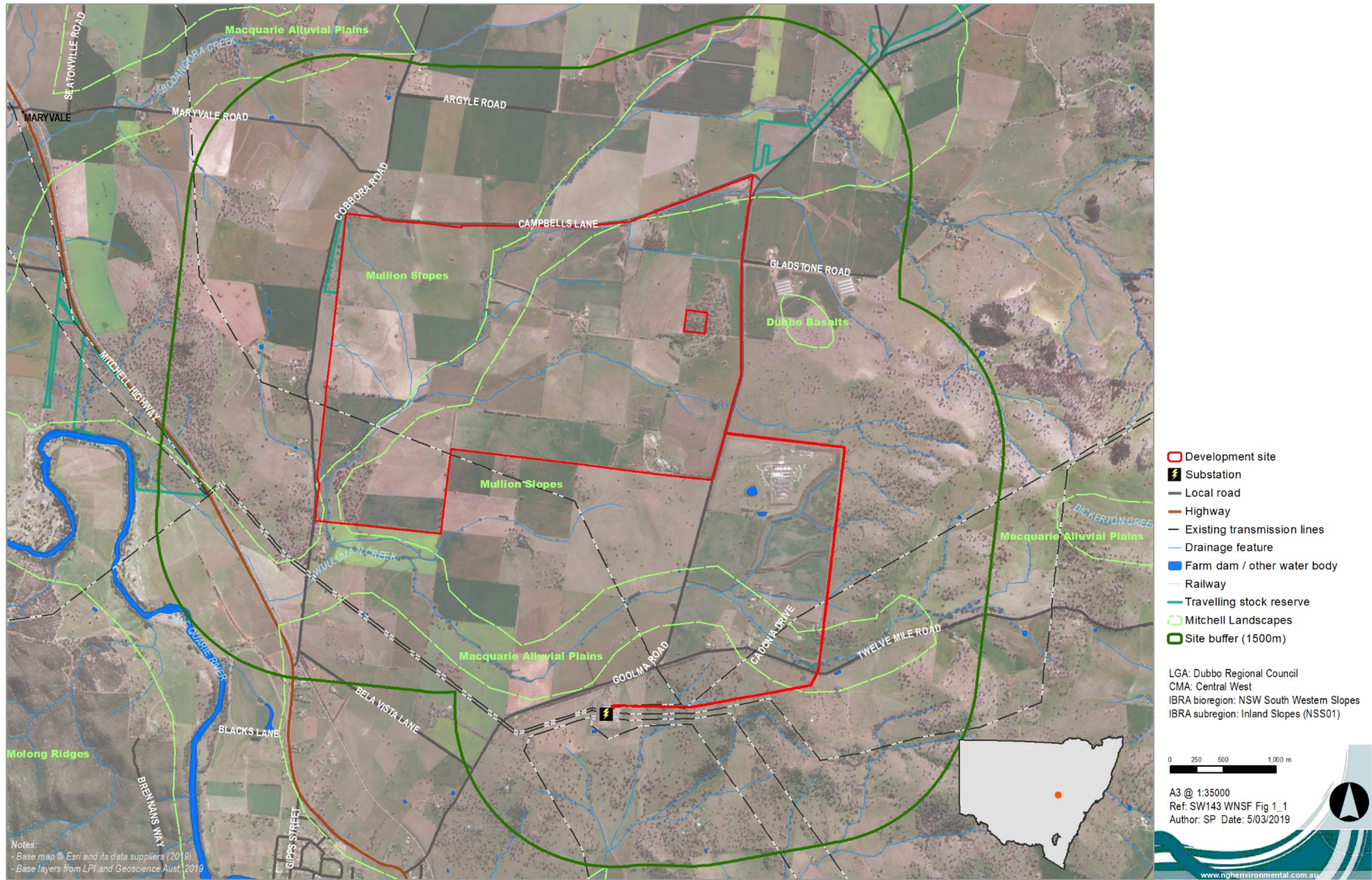


Figure 3-1 Updated Proposal location.

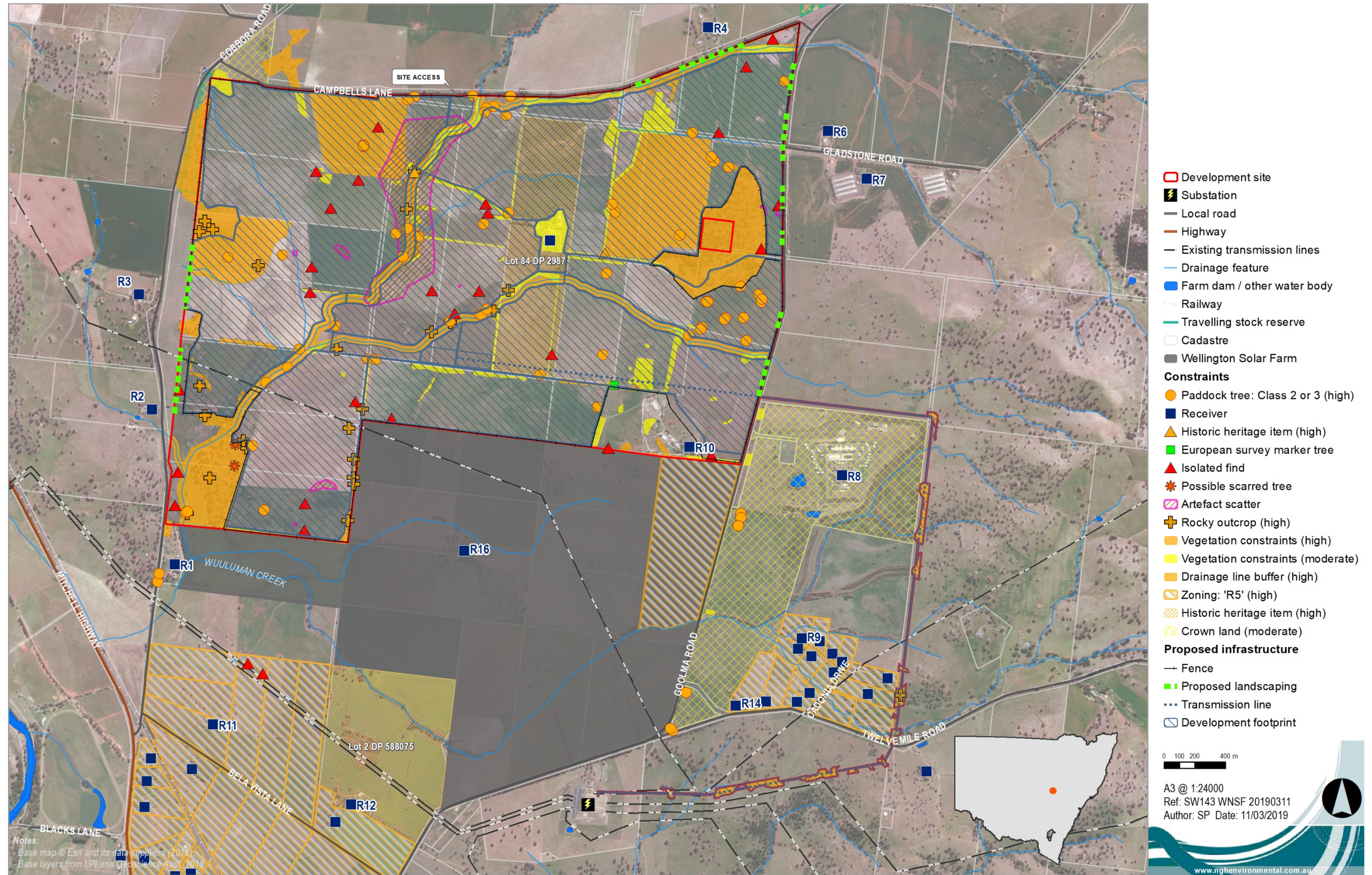


Figure 3-2 Updated constraints mapping reflecting the proposal changes, showing the approved Wellington Solar Farm (First Solar) to the south of the site.

4 CONSIDERATION OF SUBMISSIONS

4.1 EXHIBITION AND LOCATION

The Wellington North Solar Plant EIS, SSD 8895, was on public exhibition from 22 August 2018 until the 19 September 2018. Printed copies of the EIS were available at the following locations during the exhibition period:

- Dubbo Regional Council:
 - Corner of Nanima Crescent and Warne Street, Wellington.
 - Corner of Church and Darling streets, Dubbo.
- Nature Conservation Council, 14/338 Pitt Street, Sydney.

The EIS was also available online at the Major Projects section of the DPE website:

http://majorprojects.planning.nsw.gov.au/index.pl?action=view_job&job_id=8895

DPE mailed all the adjoining residents directly to notify them of the EIS submission and exhibition period.

4.2 SUBMISSIONS RECEIVED

DPE received a total of 13 submissions during the exhibition period.

- Four submissions were received from members of the public.
- Nine submissions were received from government agencies.
- No submissions were received from special interest groups.

The issues raised in each submission received are summarised in this document; Sections 4 (public submission) and 5 (agency submissions). The full submissions can be found on the Major Projects website:

Table 4-1 Responses received.

| Category | Number of responses received |
|---|------------------------------|
| Individual members of the public: | |
| • Objection | 2 |
| • Support | 2 |
| Government agency submissions | 9 |
| 1. NSW DPE, Division of Resources and Geoscience | |
| 2. NSW EPA | |
| 3. NSW Office of Environment and Heritage (OEH) | |
| 4. NSW Rural Fire Service | |
| 5. NSW Transport, Roads and Maritime Services (RMS) | |
| 6. Department of Industry (Dol) | |
| 7. Heritage Council of NSW | |
| 8. Dubbo Regional Council | |
| 9. NSW Fire and Rescue | |
| Total | 13 |

4.3 ADDITIONAL CONSULTATION

4.3.1 General community

A community and stakeholder engagement plan is in place for the Wellington North Solar Plant proposal. The proponent has undertaken consultation with the local community in developing the proposal, in line with the plan and Australian Renewable Energy Agency's (ARENA's) *Establishing the social licence to operate large scale solar facilities in Australia: insights from social research for industry* (ARENA n.d.).

Following the lodgement of the EIS with DPE, the proponent undertook the following activities:

- **Letterbox drop** to the entire Wellington community with a community update that included information about upcoming community drop-in sessions;
- **Emails** sent to the database of over fifty email addresses, linking community members to the EIS, providing information on what was included in the EIS and providing details of the community drop-in sessions;
- Placed **advertisements** in the Dubbo Daily Liberal and Wellington Times, regarding public exhibition timing and upcoming community drop-in sessions; and
- Held two community **drop-in sessions** at the Wellington Civic Centre on 5 September 2018 with over twenty local community members in attendance in total.

4.3.2 Aboriginal community representatives

Concurrently with EIS public exhibition, the draft Aboriginal Cultural Heritage Assessment Report (ACHAR) was forwarded to the Registered Aboriginal Parties (RAPs) for comment, in accordance with clause 80C of the *National Parks and Wildlife Amendment (Aboriginal Objects and Aboriginal Places) Regulation 2010*. Consultation followed steps outlined in the *Aboriginal cultural heritage consultation requirements for proponents 2010* guide provided by OEH.

The final ACHAR addressing the RAPs comments is provided in Appendix B.

5 PROPONENTS RESPONSE TO COMMUNITY SUBMISSIONS

Four community submissions were received. These included two objections and two letters of support for the project. The issues raised by the submissions related to:

- Support for the project and renewable energy projects.
- Agricultural land.
- Site location
- Visual impacts.
- Land value impact.
- Noise impacts.
- Dust impacts.
- Traffic impacts.
- Potential health effects.
- Decommissioning
- Operational jobs.

A response to each issue raised (rather than each submission received) is provided in the table below.

Table 5-1 Proponents response to issues raised by the community.

| Issue | Submissions no. | Detail of issue | Proponent Response |
|----------------|------------------|--|--|
| Support | 279676 281295 | <p>The two letters of support generally outlined the following reasons for support:</p> <ul style="list-style-type: none"> • The development would provide environmentally friendly energy and would not adversely impact the area. • Help Australia's effort to halt global warming by reducing greenhouse gas emissions. | No changes to the proposal or mitigation measures are proposed in response to this issue. |

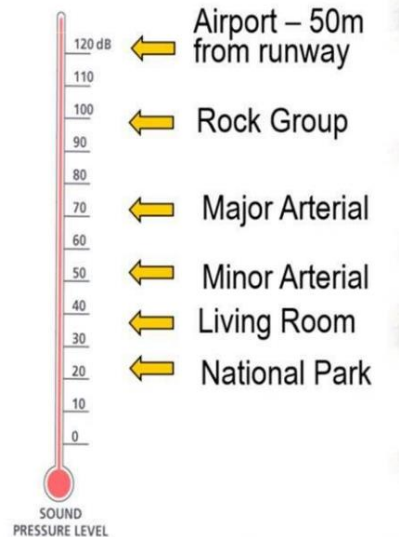
| Issue | Submissions no. | Detail of issue | Proponent Response |
|--------------------------|------------------|---|---|
| | | <ul style="list-style-type: none"> Renewable energy projects such as these are good for the environment and will also benefit the local economy during the construction phase. | |
| Agricultural land | 297676 280603 | Two respondents raised concerns about the proposal being constructed on agricultural land that is fertile and valuable, noting the proposal could impact agricultural production. | <p>Section 7.5 of the EIS assessed the Proposal's impact on agricultural land and production. It found that no land use conflicts are anticipated for existing adjacent agricultural land uses or future agricultural land uses on the Proposal site or adjacent lands.</p> <p>The Proposal would displace approximately 816ha of agricultural land at the site for the life of the solar plant (approximately 30 years). The transmission easement is mostly situated adjacent to existing transmission lines and easements associated with the Wellington Substation, so no significant change in land use would result from this infrastructure component.</p> <p>The sterilisation of the 816ha (the development footprint) during the solar farm's operational life from agricultural productivity in the region is considered insignificant in relation to the extent of productive land in the South Western Slopes of New South Wales. Sheep grazing represents 46.5% (meat and wool) of agricultural commodities from the former Wellington Council LGA (DPI, 2011). This is equal to 4.65% of the sheep (meat and wool) agricultural commodities for NSW. The census (2011) recorded 594,694 sheep in the former Wellington Council LGA. The Proposal site's sheep carrying capacity is less than 1% of this total. The current agricultural production on site is grazing, no sustained cropping is undertaken on site. Further it is noted that some grazing between the solar arrays can be undertaken to control grass and weed growth, although this must be managed carefully to ensure a stable ground cover remains to guard against erosion.</p> <p>Nearly all the 816ha is mapped as Biophysical Strategic Agricultural Land (BSAL). This equates to less than 1% of the mapped BSAL within the Dubbo Regional Council LGA; there is approximately 98,903ha of mapped BSAL within the Dubbo Regional Council LGA. Based on the survey results and historic use, the land does not align with 'high capability' land. Soil surveys (McMahon, 2018) of the site found the soil surface structure has potential to deteriorate following prolonged cultivation / handling to produce a hard-setting surface. The soils were found to be susceptible to rill and sheet erosion. The soil surveys noted the land could not sustain high levels of productivity. As such, the proposal would not impact high yielding land. The agricultural resting period is likely to improve soil biota, as ground cover will be maintained during operation.</p> |

| Issue | Submissions no. | Detail of issue | Proponent Response |
|---------------|------------------|--|--|
| | | | <p>No impacts on adjacent properties or their land use practices would occur. Further, the project would be highly reversible, committing to return the land to its current land capability post decommissioning, for continued grazing and cropping or some alternative land use.</p> <p>It is anticipated the solar plant will employ 2-4 full time staff and will draw on local suppliers for the following services which we believe will provide similar employment opportunities to those currently utilised at the site as well as protect the site's natural resources:</p> <ul style="list-style-type: none"> • Groundcover management • Weed management • Fire safety compliance • Pest and vermin control • Cleaning services • Equipment rental • Vehicle and equipment servicing <p>Finally, the EIS includes a commitment of preparing a Rehabilitation Plan after decommissioning of the plant. The plan would ensure the array site is returned to its pre-solar plant land capability. The plan would be developed with reference to the base line soil testing and with input from an agronomist to ensure the site is left stabilised, under a cover crop or other suitable ground cover. The plan would reference:</p> <ul style="list-style-type: none"> • <i>Australian Soil and Land Survey Handbook</i> (CSIRO, 2009). • <i>Guidelines for Surveying Soil and Land Resources</i> (CSIRO, 2008). • <i>The land and soil capability assessment scheme: second approximation</i> (OEH, 2012). <p>No changes to the proposal or mitigation measures are proposed in response to this issue.</p> |
| Site location | 297676 280603 | <p>Two respondents raised concerns about the proposal's location.</p> <p>One respondent questioned the proposal location, when it could be located on flat and less expensive land in the west of the state, such as AGL's existing solar plant at Nyngan. The respondent would also like to</p> | <p>The EIS outlines how the Proposal site was selected. During the initial site investigations, AGL included the following considerations:</p> <ul style="list-style-type: none"> • <i>Access to and capacity of the electrical transmission network</i>; a location close to the Wellington Substation is an important factor for this proposal. The Wellington substation is one of the most westerly points on the transmission network. The electrical infrastructure to the west of Wellington is "distribution" network with higher losses and more limited electrical capacity. • <i>Availability of an abundant solar resource</i>; this region has a high solar yield. |

| Issue | Submissions no. | Detail of issue | Proponent Response |
|-----------------------|------------------|---|--|
| | | <p>know why the solar plant needs to be constructed close to the Wellington Substation.</p> <p>A second respondent suggested that renewable energy power plants should be located near higher population areas. They contend that this would provide a larger area for power production using existing infrastructure with less impact on food production regions and have better environmental outcomes.</p> | <ul style="list-style-type: none"> <i>Availability of appropriate land i.e. topography, aspect, presence of native vegetation</i>; the site is sufficiently flat to accommodate the arrays with minimal land forming required. It has also been mostly cleared of native tree cover. <i>Suitability in terms of the interests of other stakeholders and the environment</i>; the layout responds to the environmental constraints found onsite (refer to constraints mapping Figure 3-2 and Figure 3-1 Updated Proposal location.) <p>Of these considerations, AGL put substantial weight on obtaining access to the 330kV transmission network. This is important because it provides long term network stability, lower losses and the ability to connect a higher capacity plant (200MW+), which supports lower cost and greater diversification in the energy supply. With the selection of any site for electricity generation, there are significant trade-offs to be considered between each of the factors identified above. For example, solar resource improves as you move west in NSW, however the strength of the grid can diminish quickly. Wellington is one of the most westerly points on the 330kV transmission network in NSW and is forecast to remain a strong point of connection over the life of the project; hence it is a very appropriate location for connection of a large scale solar plant. The existing Wellington Substation has also been identified by TransGrid as a key connection opportunity in reference to current network capacity availability.</p> <p>No changes to the proposal or mitigation measures are proposed in response to this issue.</p> |
| Visual impacts | 280599 280603 | Two respondents raised concerns about the visual impacts of the proposal. The concerns related to turning the Wellington Valley into an industrial zone and affecting the rural views. | <p>A Visual Impact Assessment (VIA) was prepared to consider this issue, summarised in Section 7.4 of the EIS. The VIA and EIS acknowledge that, considered on its own, Wellington North Solar Plant would be a new type of infrastructure in the area and would change the character of the site from the extensive agriculture dominant in the region, to electricity generation. Although the construction of the solar plant would add a new element to the existing landscape, the surrounding area has undergone significant transformation over recent decades due to the construction and recent expansion of the Wellington Correctional Facilities, electricity substation and associated infrastructure, and the Bodangora Wind Farm which is currently nearing completion. The site is also relatively close to the outskirts of Wellington and could be considered a transition zone between the density of the town and the broader rural landscape beyond.</p> <p>The visual impacts associated with the Proposal will vary depending on the viewing location. The solar panel arrays are relatively low lying, below 4m in height. The solar plant would be constructed as an array of panels arranged in a north south direction, tracking east to west on a single axis. The</p> |

| Issue | Submissions no. | Detail of issue | Proponent Response |
|-------------|------------------|---|---|
| | | | <p>highest visual effect of the PV panels is likely to be seen from the east and west, where the most surface area is visible. Visibility of the solar plant from the north and south would be significantly lower. The most significant visual impact when viewed from the public domain is from locations along Goolma Road and Cobbora Road where the proposal is in close proximity to the boundary and where there is no existing vegetation of a sufficient scale to screen or fragment views.</p> <p>AGL have been directly consulting with the nearby neighbours who would have substantive views of the arrays. Photomontages were provided to individual neighbours with potential visual impacts, demonstrating the possible view of the solar plant from their property.</p> <p>It is noted that the cumulative impact of the approved Wellington South Solar Farm to the south of the site increases the significance of visual impacts. This was considered in the VIA.</p> <p>The EIS includes measures to address potential visual impacts including:</p> <ul style="list-style-type: none"> • Landscaping, which would include an intermittent band of screen planting of varying height positioned between the property boundary and the solar arrays in locations along Goolma Road and Cobbora Road. It will be located where there is no existing vegetation and where the arrays are immediately adjacent to the boundary. Additionally, intermittent screen planting will also be located along the Campbells Lane boundary to mitigate impacts on properties on the northern side of Campbells Lane. To ensure that the screen planting integrates into the existing landscape character, the bands would be planted with a mix of endemic tree and shrub species to ensure a naturalistic effect whilst also providing habitat and movement corridors for native fauna. • Materials would be nonreflective and would be painted in neutral colours that are sensitive to the surrounding landscape. <p>On balance, as areas where the changes would present most visual contrast would be mitigated, the residual impacts are considered acceptable.</p> <p>No changes to the proposal or mitigation measures are proposed in response to this issue.</p> |
| Land values | 280599 280603 | Two respondents noted concern over the potential devaluation of adjoining properties once the solar plant had been constructed. | Section 8.2 of the EIS considers this issue by investigating the key land value drivers and the likely impacts on this. For the Wellington locality, the key driver of land value is and has been historically, |

| Issue | Submissions no. | Detail of issue | Proponent Response |
|---------------|-----------------|---|---|
| | | | <p>the agricultural productivity of the area. Amenity values, such as views, rural lifestyle and proximity to Wellington, could also be considered to enhance land value.</p> <p>No land value study has been undertaken specific to this solar plant development. Existing studies in relation to wind farms (which are generally larger renewable energy developments, with taller structures which are generally more visually intrusive on the landscape than a solar plant, but which have the same reversible impacts on agricultural productivity during decommissioning), have found no conclusive evidence to support the claim that wind farms devalue nearby property on the basis of visual impacts (e.g. refer Henderson & Horning Pty Ltd 2006 <i>Land Value Impact of Wind Farm Development - Crookwell New South Wales</i> and OEH 2016 <i>Review of the Impact of Wind Farms on Property Values</i>). It is acknowledged however, that renewable energy can be a polarising and subjective issue. This may affect decisions made by individuals to purchase property.</p> <p>Regarding the sites agricultural value, the EIS notes that the proposed solar plant is a highly reversible development, involving relatively small areas of excavation for driven pile mounts (for the solar panels) perimeter access track and footings for inverters. After the operational life of the project (expected to be around 30 years), the site can be returned to its existing agricultural capacity or alternative land use. Project commitments include a Rehabilitation Plan, based on onsite soil testing, which will ensure the site is returned to pre solar plant land capability.</p> <p>The proposed solar plant has potential to create an economic stimulus for the local economy. Economic benefits include income for the area (accommodation and retail), job creation and alternative income stream for the area. Given the high degree of confidence in mitigating impacts to agricultural and visual impacts and the potential for positive impacts on access and tourism, no compensation is proposed for any properties.</p> <p>No changes to the proposal or mitigation measures are proposed in response to this issue.</p> |
| Noise impacts | 297676 | One respondent raised concerns regarding noise during construction, specifically the cumulative noise of 10 pile drivers (114 dBA) at R3. | <p>Noise logging, modelling and assessment against relevant construction criteria were undertaken specific to the proposal within the EIS; Construction Noise Assessment Appendix G. Noise emissions were determined by modelling the noise sources, receiver locations, topographical features of the intervening area, and possible noise control treatments surrounding the study area. The modelling is not just based on the sound power levels of a single piece of equipment. It also should be noted that the 10 piles drivers are not likely to be used at the same time and would spread across the</p> |

| Issue | Submissions no. | Detail of issue | Proponent Response |
|-------|-----------------|-----------------|--|
| | | | <p>816ha development footprint. The noise modelling calculates the contribution of each noise source at each specified receptor point and allows for the prediction of the total noise from a site.</p> <p>The predicted noise levels are also considered a worst-case scenario with up to three noisiest plants operating concurrently at the closest proximity to each receiver. Construction works would take approximately 24 months to complete and would occur across the property, hence dispersing the noise impacts between receivers over the construction period and not focussing in one location only.</p> <p>For R3, the predicted construction noise levels were between 20-45dB(A) for the construction works within the solar plant site. The predicted noise levels are below the criteria of 45dB(A), which is based on NSW <i>Interim Construction Noise Guideline</i> (ICNG) (DECC, 2009). The noise levels are also well below the highly noise affected level of 75dB(A). The figure below outlines examples of decibel readings of every day sounds. The predicted noise levels during construction at R3 would be on equivalent with the background noise level of a typical living room.</p> <div style="text-align: center;"> <h3>What are Decibels?</h3> <p>Decibels [dB] - Sound (or noise) is measured in units of decibels. The dB scale is logarithmic. The following are examples of the decibel readings of every day sounds.</p>  </div> |

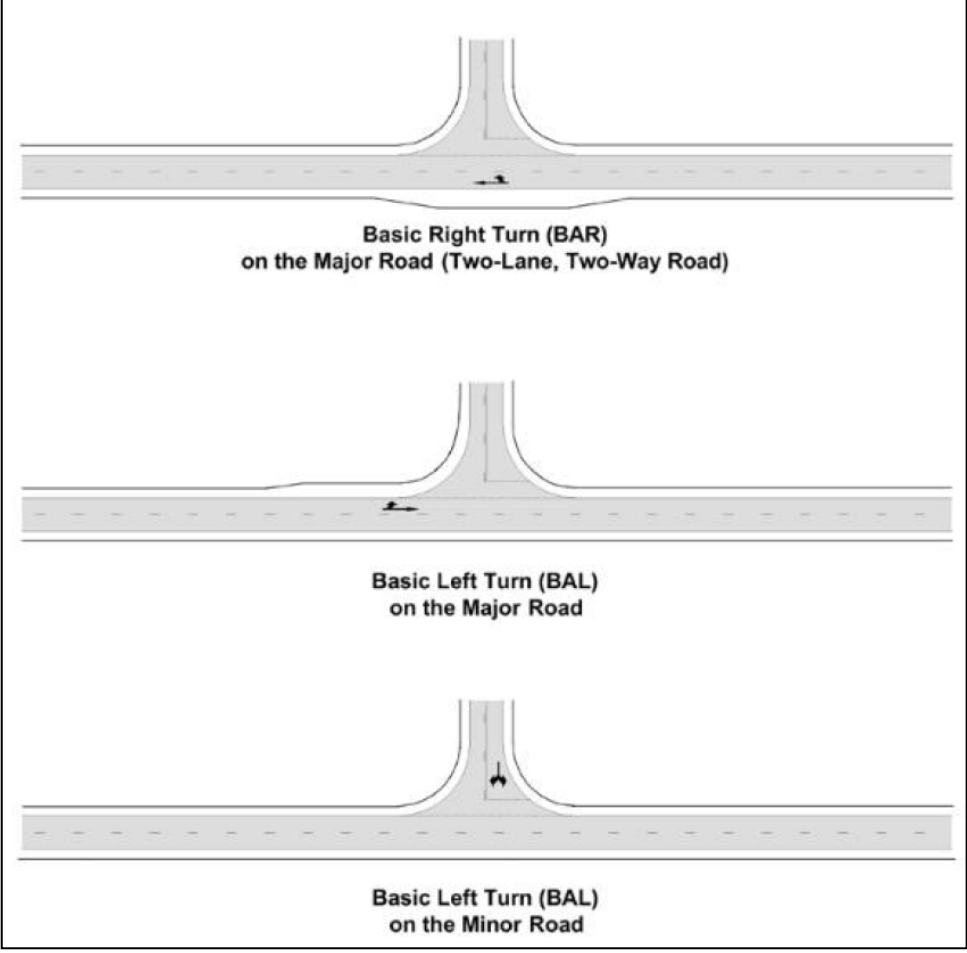
| Issue | Submissions no. | Detail of issue | Proponent Response |
|---------------------|-----------------|--|---|
| | | | <p>The EIS includes mitigation strategies to reduce the potential noise during construction, including:</p> <ul style="list-style-type: none"> • The implementation noise control measures such as those suggested in Australian Standard 2436-2010 “Guide to Noise Control on Construction, Demolition and Maintenance Sites”. • The development of a Noise Management Plan that includes <ul style="list-style-type: none"> ○ Use of less noisy plant and equipment where feasible and reasonable. ○ Use of properly maintained plant and equipment. . ○ Providing special attention to the use and maintenance of ‘noise control’ or ‘silencing’ kits fitted to machines to ensure they perform as intended. ○ Strategically positioning plants on site to reduce the emission of noise to the surrounding neighbourhood and to site personnel. ○ Avoiding any unnecessary noise when carrying out manual operations and when operating plant. ○ Switching off any equipment not in use for extended periods during construction work. ○ A Complaints procedure. Each complaint would need to be investigated and appropriate noise amelioration measures put in place to mitigate future occurrences, where the noise in question is in excess of allowable limits. <p>No changes to the proposal or mitigation measures are proposed in response to this issue.</p> |
| Dust Impacts | 297676 | One respondent raised concerns regarding dust during construction. | <p>Section 8.5 of the EIS assesses the Proposal’s potential impacts on air quality. The EIS identifies that dust would be generated during construction but would be manageable due to the minor earthworks and implementation of mitigation measures. Dust generated by the proposal would include relatively limited area of excavation and other earthworks as well as the movement of trucks and work vehicles travelling along unsealed access roads during construction and decommissioning of the project. The limited earthworks associated with construction mostly involve trenching for cables, construction of access tracks and construction of footings for power conversion stations, substation and buildings. Piles for the module frames would be pile driven. The impact area for the piles would be less than 1% (approximately 8ha) of the site area. In comparison to dust generated</p> |

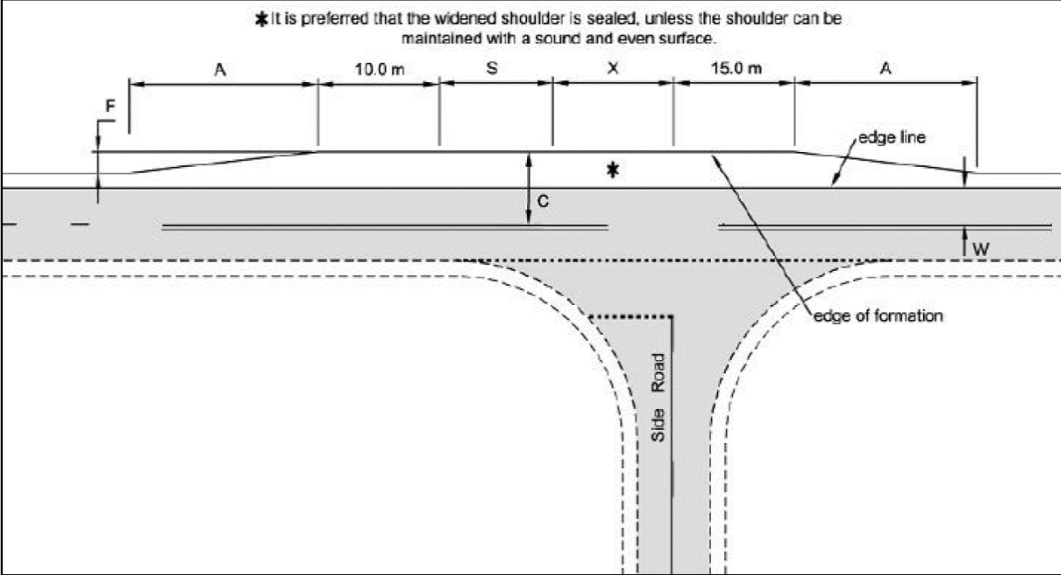
| Issue | Submissions no. | Detail of issue | Proponent Response | | | | | | | | | | | | | | | |
|-----------------|---|---|---|-----------------|---|--|---------------|-------|----|---------------|---|---|----------------|-------|----|-------|-------|----|
| | | | <p>during harvest and in windy conditions when soils are bare, the comparative impact of construction is not considered likely to be significant.</p> <p>The EIS includes mitigation strategies to reduce the potential dust impacts during construction, including:</p> <ul style="list-style-type: none">Dust generation by vehicles accessing the site and earthworks at the site would be suppressed using water applications or other means as required.Vehicle loads of material which may create dust would be covered while using the public road system. <p>Dust will be monitored during construction, this would be outlined in the Construction Environmental Management Plan. Generally the application of dust controls such as water application is applied when dust is visible.</p> <p>No changes to the proposal or mitigation measures are proposed in response to this issue.</p> | | | | | | | | | | | | | | | |
| Traffic impacts | 297676 | <p>One respondent raised concerns regarding increased traffic along Cobbora Road. The respondent outlines there has been significant increase in traffic in recent years, particularly large B Double trucks. Additionally, the road is quite narrow in places and these trucks pose a danger to local traffic including the school bus.</p> <p>The respondent states that Cobbora Road needs upgrading and widening from the Mitchell Highway to Maryvale Road to help cater for the large volume of construction traffic.</p> | <p>A Traffic Impact Assessment was prepared for the EIS, it is summarised in Section 7.9 of the EIS. The period of construction in the assessment was assumed to be 18 months to provide a worst case concentration of traffic impacts. The estimated total and maximum daily traffic movements during construction and peak construction are shown in the table below. The number of oversized vehicles (B Double or larger) required for the construction of the Wellington North Solar Plant is low. It is expected that up to four one-way movements of oversized vehicles would be required within the later months of the construction period (months 14 and 15).</p> <table><tr><th>Type of vehicle</th><th>Vehicles over construction duration (one way)</th><th>Peak maximum daily number of Trips (one-way)</th></tr><tr><td>Semi-Trailers</td><td>6,605</td><td>41</td></tr><tr><td>Oversize load</td><td>2</td><td>0</td></tr><tr><td>Light Vehicles</td><td>5,500</td><td>17</td></tr><tr><td>Buses</td><td>2,904</td><td>10</td></tr></table> | Type of vehicle | Vehicles over construction duration (one way) | Peak maximum daily number of Trips (one-way) | Semi-Trailers | 6,605 | 41 | Oversize load | 2 | 0 | Light Vehicles | 5,500 | 17 | Buses | 2,904 | 10 |
| Type of vehicle | Vehicles over construction duration (one way) | Peak maximum daily number of Trips (one-way) | | | | | | | | | | | | | | | | |
| Semi-Trailers | 6,605 | 41 | | | | | | | | | | | | | | | | |
| Oversize load | 2 | 0 | | | | | | | | | | | | | | | | |
| Light Vehicles | 5,500 | 17 | | | | | | | | | | | | | | | | |
| Buses | 2,904 | 10 | | | | | | | | | | | | | | | | |

| Issue | Submissions no. | Detail of issue | Proponent Response | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|-----------------------------|-------------------------------|--|------------------|----|--|--|----------|-----------------------------|-------------------------------|--------------------------|------------------|--------------|--|--|--|--|--|----|----|----|---|--|----|----|----|---|---------|--|--|--|--|--|----|----|----|---|--|----|----|----|---|
| | | | Single unit truck | 60 | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | Flatbed truck | 10 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | Total | 15,081 | 69 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | As part of the assessment, traffic counts were taken along Cobbora Road, 500m north of Bela Vista Lane. The results of the traffic count is in the table below. The breakdown of heavy vehicles was 25% on weekdays and 12% on weekends. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | The predicted additional traffic along Cobbora Road during construction can be seen in the table below. There would be an additional 10 vehicles coming from north and additional 35 vehicles coming from the south to the proposal site. This includes heavy vehicles. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | <table><tr><th>Location</th><th>Existing vehicles (two-way)</th><th>Additional vehicles (two-way)</th><th>Total vehicles (two-way)</th><th>Level of Service</th></tr><tr><td colspan="5">AM peak hour</td></tr><tr><td>Cobbora Road (North of Campbells Lane)</td><td>34</td><td>10</td><td>44</td><td>A</td></tr><tr><td>Cobbora Road (south of Campbells Lane)</td><td>34</td><td>35</td><td>69</td><td>A</td></tr><tr><td colspan="5">PM peak</td></tr><tr><td>Cobbora Road (North of Campbells Lane)</td><td>49</td><td>10</td><td>59</td><td>A</td></tr><tr><td>Cobbora Road (south of Campbells Lane)</td><td>49</td><td>35</td><td>84</td><td>A</td></tr></table> | | | | | Location | Existing vehicles (two-way) | Additional vehicles (two-way) | Total vehicles (two-way) | Level of Service | AM peak hour | | | | | Cobbora Road (North of Campbells Lane) | 34 | 10 | 44 | A | Cobbora Road (south of Campbells Lane) | 34 | 35 | 69 | A | PM peak | | | | | Cobbora Road (North of Campbells Lane) | 49 | 10 | 59 | A | Cobbora Road (south of Campbells Lane) | 49 | 35 | 84 | A |
| Location | Existing vehicles (two-way) | Additional vehicles (two-way) | Total vehicles (two-way) | Level of Service | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| AM peak hour | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Cobbora Road (North of Campbells Lane) | 34 | 10 | 44 | A | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Cobbora Road (south of Campbells Lane) | 34 | 35 | 69 | A | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| PM peak | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Cobbora Road (North of Campbells Lane) | 49 | 10 | 59 | A | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Cobbora Road (south of Campbells Lane) | 49 | 35 | 84 | A | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | The total vehicles (existing traffic and construction traffic) estimated to be on Cobbora Road during construction was reviewed against the Roads and Maritime Guide to Generating Developments (2002). The guide outlines how to assess the developments effect on traffic efficiency. It takes into consideration speed, volume of traffic, geometric features, traffic interruptions delays and freedom | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

| Issue | Submissions no. | Detail of issue | Proponent Response |
|------------------------|-----------------|---|---|
| | | | <p>to manoeuvre. There are six levels of service. The Traffic Impact Assessment found that the total traffic estimated along Cobbora Road during the construction of the solar plant would have a Level of Service A. This is the top level, it is a condition of free flow in which individual drivers are virtually unaffected by the presence of others in the traffic stream. Freedom to select desired speeds and to manoeuvre within the traffic stream is extremely high, and the general level of comfort and convenience provided is excellent.</p> <p>Based on this assessment, upgrades and widening of Cobbora Road is not considered warranted.</p> <p>AGL are committed to developing and implementing a Haulage Plan and Traffic Management Plan for the Proposal. Both plans would address safety risks through traffic controls and scheduling deliveries.</p> <p>No changes to the proposal or mitigation measures are proposed in response to this issue.</p> |
| Traffic impacts | 297676 | One respondent has stated that Campbells Lane should be sealed to the east of the proposed main entrance as well as the western end, as there will be construction traffic entering from both directions. | <p>As outlined in the EIS, construction traffic for the proposal would access the site from the west of Campbells Lane via Cobbora Road. No construction traffic is proposed to enter Campbells Lane via Goolma Road. Therefore the sealing of Campbells Lane to the east of the proposal site access is not considered necessary. Further, consultation has occurred with the resident along Campbells Lane who has a preference that the whole of the road is not sealed.</p> <p>The EIS includes the current mitigation measure:</p> <ul style="list-style-type: none"> • A pavement review would be undertaken and bituminous surface be applied to Campbells Lane to reduce pavement degradation and improve driver safety. <p>No changes to the proposal or mitigation measures are proposed in response to this issue.</p> |
| Traffic impacts | 297676 | One respondent has raised concerns of the proposed construction of a turning lane at Cobbora Road and Campbells Lane junction as there is little space on the western verge. The respondent suggests that the intersection needs upgrading or alternatively, there should be no use | <p>The Traffic Impact Assessment included an assessment on the intersections and determined what type of treatments were required in accordance with <i>The Austroads Guide to Road Design Part 4A: Unsignalised and Signalised Intersections</i>. This guide provides warrants that apply to major road turn treatments with respect to the provision of basic, auxiliary and channelised lanes along the major road.</p> <p>A review was undertaken for the intersection of Cobbora Road and Campbells Lane based upon the existing and future traffic volumes, notably for the right turn movement on the major road</p> |

| Issue | Submissions no. | Detail of issue | Proponent Response |
|-------|-----------------|--|---|
| | | of Maryvale Road for construction traffic. | <p>(considered as the worst turn movement). Based on this analysis, it is considered that a Basic Right and Left Turn Treatment (BAR/BAL) is suitable for the Cobbora Road and Campbells Lane intersection. Currently, the intersection doesn't provide this type of treatment, with no shoulder or road widening provided on the major road. Shoulder widening will be provided on the western and eastern road alignment on Cobbora Road at Campbells Lane and the intersection constructed in line with a BAR/BAL treatment.</p> <p>The turn treatment will be designed to accommodate articulated vehicles up to 19m in length. Larger vehicles will require special permit and traffic management when required.</p> |

| Issue | Submissions no. | Detail of issue | Proponent Response |
|-------|-----------------|-----------------|--|
| | | |  <p>The diagrams illustrate three types of turning movements at a T-junction where a minor road meets a major road:</p> <ul style="list-style-type: none"> Basic Right Turn (BAR) on the Major Road (Two-Lane, Two-Way Road): The top diagram shows a vehicle turning right from the minor road onto the major road. The vehicle is positioned in the right lane of the major road, and the turning path is indicated by a dashed line. Basic Left Turn (BAL) on the Major Road: The middle diagram shows a vehicle turning left from the minor road onto the major road. The vehicle is positioned in the left lane of the major road, and the turning path is indicated by a dashed line. Basic Left Turn (BAL) on the Minor Road: The bottom diagram shows a vehicle turning left from the minor road onto the major road. The vehicle is positioned in the left lane of the minor road, and the turning path is indicated by a dashed line. |

| Issue | Submissions no. | Detail of issue | Proponent Response |
|--------------------|-----------------|--|---|
| | | |  <p>The road reserve at this intersection is 30m wide with the existing road approximately 6m wide. AGL has considered the available space on the western road verge and determined that there is sufficient space to accommodate the proposed BAR/BAL treatment.</p> <p>It is considered unnecessary that the proposal construction traffic would use Maryvale Road. AGL are committed to preparing a detailed Traffic Management Plan prior to construction, which would outline the designated construction traffic routes. Construction staff would be required to use only these routes.</p> <p>No changes to the proposal or mitigation measures are proposed in response to this issue.</p> |
| Heat island effect | 297676 | One respondent has raised concerns that the installation of one million solar panels would increase the temperature for nearby neighbours. | <p>The Section 8.5 of the EIS addresses this concern regarding the possibility of the heat created from solar arrays resulting in a 'heat island' effect. A 'heat island' is defined as an area having higher average temperature than its surroundings owing to the greater absorption, retention and</p> |

| Issue | Submissions no. | Detail of issue | Proponent Response |
|-------|-----------------|-----------------|---|
| | | | <p>generation of heat by buildings, pavements and activities. This is usually used in reference to the impact of an urban area on its rural surroundings.</p> <p>A number of studies have shown that Photovoltaic (PV) panels convert incident solar radiation into heat and this can alter the air-flow and temperature profiles within and adjacent to the panels. This is referred to as the Photovoltaic Heat Island (PVHI) effect. Whether such changes may subsequently affect the thermal environment of near-by populations of humans and other species have been questioned (Fthenakis & Yu, 2013). To date there are limited empirical studies on the potential for a heat island effect in utility scale solar plants.</p> <p>The issue has also been subject to recent consideration by a Victorian Planning Panel for solar farms proposed in Greater Shepparton for solar farms proposed by Neoen and X-Elio. This is detailed in the <i>Panel Report for the Greater Shepparton Solar Energy Facility Planning permit Application 2017-162, 2017-274, 2017-301 and 2017-344</i> (Panel Report 2018). Neoen, in preparation of a response to key issues raised in objecting submissions, a <i>Statement of Evidence by Greg Barron-Gafford</i> from the Research Group Biography, Ecosystem Science (University of Arizona; Barron-Gafford, 2018).</p> <p>Studies completed show results that can be seen as contradictory, as they are so site and project specific. Some studies suggest that PV systems can actually cause a cooling effect on the local environment, depending on the efficiency and placement of the PV panels while others demonstrate a warming effect (Barron-Gafford, Minor, Allen, Cronin, Brooks, & Pavao-Zuckerman, 2016). Other studies conclude that whilst air temperatures may increase within the solar plant itself, they rapidly decrease to the ambient temperature beyond the perimeter of the solar plant (Fthenakis & Yu, 2013).</p> <p>Armstrong <i>et al</i> (2016) focussed on microclimate and ecosystem processes directly under the panels. They found:</p> <ul style="list-style-type: none"> • PV arrays caused seasonal and diurnal variation in air and soil microclimate. These varied between summer (cooling of up to 5.2°C) and winter (cooling up to 1.7°C). • Drying occurred under the PV arrays compared with gap and control areas. • Differences in the above ground plant biomass and species diversity, with both lower under the PV array. • Photosynthesis and net ecosystem exchange in spring and winter were also lower under the PV array. |

| Issue | Submissions no. | Detail of issue | Proponent Response |
|-------|-----------------|-----------------|---|
| | | | <p>Xiaoqing Gao <i>et al.</i> (2017) looked at air and soil temperature within a solar farm and at a control site without PV. This found that at a height of 2m in the two sites studied, the daytime temperature was essentially the same during winter, while during the other seasons, the daytime air temperature in the PV array is higher than that in the control without PV, with the maximum difference appearing in summer. At a height of 2m, the night-time air temperatures during the four seasons in the solar farm are higher than the control outside of the PV array. It also found that the annual range of soil temperatures at depths of 5–20 cm in the solar farm is higher than that in the region without PV. But with no apparent effect on soil temperature at depths of 40-180cm.</p> <p>Fthenakis and Yu (2013) undertook an analysis of the potential for large solar plants to generate a PVHI effect and increase air temperature within the solar plant area. The study found at the centre of the solar plant, the annual average air temperature at a height of 2.5m increased by up to 1.9°C. However, this increase in temperature dissipated at a height of 5m. Additionally, the solar plant completely cooled overnight, so the effect was limited in duration.</p> <p>Barron-Gafford (2018) in his Statement of Evidence (SoE) to the Victorian Planning Panel included results on the radius of the measured heat effects. This identified that the PVHI effect was indistinguishable from air temperatures over native vegetation when measured at a distance of 30 metres from the edge of the PV array (viz figure below). In his SoE he states that <i>‘this pattern held true for both daytime and night-time conditions. Because the PV panels themselves trap the energy from diffuse sunlight that was able to reach the ground underneath them, air temperatures remain elevated within a PV array. As you leave this “overstory” of PV panels, energy is able to radiate back towards the atmosphere, as it does in a natural setting, and the PVHI quickly dissipates’</i>.</p> |

| Issue | Submissions no. | Detail of issue | Proponent Response |
|-------|-----------------|-----------------|--|
| | | | <p>Figure 5-1 Measures of air temperature within and outside of the PV array (source:- Barron-Gafford, 2018).</p> <p>In conclusion of the Victorian Planning Panel Report (Panel Report 2018), the panel accepted that solar arrays will affect air and soil temperatures within the solar array perimeter, and that in relation to outside of the solar array perimeter that a heat island effect is unlikely to occur. It identified that any temperature increase within the solar array will be marginal and recommended a 30 metre setback from any neighbouring property boundary.</p> <p>The research indicates a small potential effect on climate within the solar plant site. This effect may actually enhance retention of ground cover in very cold or hot conditions onsite. Negligible impacts on adjacent properties and agricultural activities such as plant growth and health of cattle would occur. Where sensitive land use occurs adjacent to solar panels, consideration to maintaining a 30 metre buffer could be considered.</p> |

| Issue | Submissions no. | Detail of issue | Proponent Response |
|------------------------|-----------------|---|---|
| | | | <p>The Wellington North Solar Plant only abuts other properties along the southern and western boundaries. The northern and eastern boundaries are adjacent to roads. A buffer between the panels and boundary is already proposed along the southern and western boundaries as part of the project. The buffer is occupied by internal tracks and vegetation screening in some locations. The proposed buffer is approximately 10m wide. A 30m wide buffer for this project is not considered warranted due to the adjacent land uses. The southern and western properties are currently used for grazing and are not likely to be used for sustained cropping. Additionally the Wellington Solar Farm by First Solar is proposed on the southern property.</p> <p>No changes to the proposal or mitigation measures are proposed in response to this issue.</p> |
| Health impacts | 280603 | One respondent raised concerns regarding the possible health effects on nearby residents. | <p>AGL assumes the respondent is referring to the health concerns of electromagnetic fields. Section 8.4 of the EIS assesses the potential impact of electromagnetic fields (EMFs) on human health. It was identified that the proposal includes five components that could generate EMFs:</p> <ol style="list-style-type: none"> 1. Solar arrays (up to 1.5 kV DC). 2. Power Conversion Stations (up to 8 MW capacity). 3. Underground cables. 4. 132 kV or 330 kV overhead or underground transmission lines. 5. 132 kV to 330 kV solar substation. <p>It was found that all components would produce electric and magnetic fields that are below the recommended reference guidelines in accordance with <i>Guidelines for limiting exposure to time-varying electric, magnetic and electromagnetic fields (up to 300GHz)</i> in 1998 published by The International Commission on Non-Ionizing Radiation Protection (ICNPR). Further, transmission line easements are sized in accordance with Transgrid Transmission Line Design Standards which are designed to limit the EMF level at the edge of an easement to that found around the use of common household items.</p> <p>No changes to the proposal or mitigation measures are proposed in response to this issue.</p> |
| Decommissioning | 297676 | One respondent asked if the 26,000 cubic metres of gravel used for road base will be recovered/removed when the site is decommissioned. | <p>The removal of the roads and gravel at decommissioning would be considered in consultation with the new landowner. It is likely the removal of roads would depend on their location; roads on the perimeter may remain useful. Roads through paddocks are likely to be removed to assist in returning the site to pre solar farm agricultural land capability.</p> |

| Issue | Submissions no. | Detail of issue | Proponent Response |
|---|-----------------|--|---|
| | | | No changes to the proposal or mitigation measures are proposed in response to this issue. |
| Cumulative renewable energy projects | 280599 | One respondent commented there is an overload of renewable energy projects in the small rural community. | <p>For the reasons cited above, under 'Site location', the locality provides a good setting for renewable energy developments. This can lead to adverse cumulative impacts for small rural communities, such as influx of workers, traffic and ongoing visual impacts. Due to the competitive nature of the energy market, not all projects commence construction immediately after getting a planning permit. The likelihood of all projects in the Wellington area becoming operational is driven by a number of commercial factors beyond obtaining a planning permit. These factors include the physical capacity of the electricity grid to cater for all proposed projects and the broader requirements of the energy market.</p> <p>Section 8.7 of the EIS assessed the potential cumulative impacts of the proposal in regards to other proposed developments in the locality and region. The EIS outlines there is potential that the construction of the proposal would occur concurrent with other renewable energy projects and this increases pressure on local community services including accommodation. However, there is also potential for positive cumulative economic effects from the construction of multiple developments in the area. The construction of the Wellington North Solar Plant is likely to commence once Bodangora Wind Farm is operational, therefore the socio-economic benefits in relation to both these projects would be a continuous ongoing benefit for the community. The increased creation of jobs and economic input into local businesses would provide a benefit to local communities.</p> <p>Assessments concluded that the Proposal would not result in significant impacts to local businesses, residents and road users, subject to the range of identified mitigation measures outlined in the EIS. Due to the number of local communities in the area, any cumulative impacts on local services are likely to be spread between communities including employment and economic inputs. There is considered to be sufficient residual capacity within the existing communities. It is unlikely that there would be negative cumulative impacts to local facilities, goods and services.</p> <p>No changes to the proposal or mitigation measures are proposed in response to this issue.</p> |
| Long term jobs | 280603 | One respondent commented that the project would provide very few long term jobs. | The overwhelming employment stimulus for a solar farm is construction. This is true for most large scale infrastructure developments. The solar plant would be monitored and operated remotely and would require a small number of maintenance personnel (approximately 2-4 full time equivalent |

| Issue | Submissions no. | Detail of issue | Proponent Response |
|-------|-----------------|-----------------|--|
| | | | <p>staff) to be based at the site. This would be an increase of current workers onsite, which is currently just the landowner and one assistant.</p> <p>It is expected that in addition to the full-time staff, there would be a range of opportunities for local suppliers in general trade and support services, such as:</p> <ul style="list-style-type: none"> • Vegetation management; clearing, mulching, rehabilitation. • Fencing services. • Electrical work. • General civil services, such as grader, dozer and excavator operators. • Water services. • Security services. • Traffic management. • General construction services. • Meals and accommodation services. <p>Additionally there would be some occasions, such as during a major substation maintenance shut down, where additional maintenance staff may be required on site.</p> <p>No changes to the proposal or mitigation measures are proposed in response to this issue.</p> |

6 PROPONENTS RESPONSE TO GOVERNMENT AGENCY SUBMISSIONS

This section considers all issues raised in the government agency submissions. For each submission, the issues are summarised in the left-hand columns and the Proponent's response is provided in the right-hand column.

Table 6-1 Agency submissions and proponent's response

| Issue | Detail of issue | Proponent response |
|--|---|---|
| 6.1 NSW DPE, DIVISION OF RESOURCES AND GEOSCIENCE | | |
| Mineral resources | Provide evidence of successful contact and consultation with Drummond West Pty Ltd (EP8505). | Evidence of consultation with Drummond West Pty Ltd (EP8505) is provided in Appendix E. |
| Offsets | It is noted that the Division's preference that any potential offsets will be located onsite, if possible. This is to avoid loss of access for exploration and possible future extraction of resources in other areas of this highly prospective region of the State. | It is likely that AGL would use the retained native vegetation areas onsite as offset sites. This is generally considered to be a preferable way to meet the offset obligation, in terms of offsetting 'like for like' and reducing the cost of procuring offsite lands or credits. |
| 6.2 NSW EPA | | |
| Environment Protection Licence | The project is not a scheduled activity in accordance with Schedule 1 of the <i>Protection of the Environment Operations Act 1997</i> . Therefore an Environment Protection licence is not required for the project. | Noted. |
| Waste Management | The EIS doesn't incorporate options and strategies for waste minimisation, reuse and recycling. The EIS refers to a Waste Management Plan (WMP) to be developed. The development of the WMP is required prior to commencement of construction. | Section 8.6 of the EIS addresses waste management. As mentioned, the EIS commits AGL to developing and implementing a Waste Management Plan (WMP). The WMP will be developed preconstruction as part of the Construction Environmental Management Plan to be |

| Issue | Detail of issue | Proponent response |
|-------|---|--|
| | Similar projects in the region have experienced issues in managing the large volume of waste that is generated during construction. Examples of problematic wastes include large quantities of packing materials such as wooden pallets, metals and plastics. | <p>submitted to DPE. The WMP would include the identification of opportunities to avoid, reuse and recycle, in accordance with the waste hierarchy.</p> <p>The EIS outlines what wastes would be produced during to construction, and how the waste would be managed:</p> <ul style="list-style-type: none"> • Spoil from trenching – reused onsite. • Packaging materials – taken offsite to an appropriate approved facility either a recycling centre or waste facility. • Excess building materials – taken off-site to a recycling centre or crushed for reuse onsite (i.e. road base). • Scrap metal and cabling materials – taken off-site to a recycling centre. • Plastic and masonry products, including concrete wash – off-site recycling centre or crushed for reuse onsite (i.e. road base). • Excavation of topsoils and vegetation clearing (expected to be minimal) – reused onsite, vegetation would be mulched and used for rehabilitation. • Bio wastes, from onsite septic systems - taken offsite to an approved facility. <p>AGL has experience in constructing large renewable energy projects including the Nyngan Solar Plant and is comfortable that the wastes can be appropriately managed.</p> <p>No changes to the EIS mitigation measures are considered to be required.</p> |

6.3 NSW OFFICE OF ENVIRONMENT AND HERITAGE

| | | |
|----------------------------------|---|--|
| Aboriginal heritage | The Aboriginal Cultural Heritage (ACH) assessment has adequately investigated and reported on the Aboriginal cultural heritage values for the proposed Wellington North Solar Farm. OEH supports the ACH assessment findings and proposed recommendations to avoid and mitigate harm to Aboriginal objects. | Noted. |
| Transmission line Box Gum | Two potential routes for the transmission line are presented. The BDAR does not provide any discussion regarding the potential to further avoid | AGL now propose to construct a new eastern transmission line option. This option has been assessed within the Amendment Report (NGH Environmental, 2019). The BDAR and |

| Issue | Detail of issue | Proponent response |
|---|---|--|
| Woodland avoidance | impact to Box Gum Woodland by exploring the potential for the western route to be underground. OEH recommends that further avoidance of Box Gum Woodland be investigated when considering the final transmission line route through exploring the potential for the western route to be underground. | <p>offset requirement have now been updated to reflect this change Appendix C of this report. It is noted in the revised BDAR that the new transmission route will also be an overhead line and will impact native vegetation. Underground powerline routes were considered for this proposal however due the high voltage (330kV), it was considered technically and economically infeasible to connect the project via underground cable.</p> <p>The following mitigation measure was deleted:</p> <ul style="list-style-type: none"> • Where feasible, underground rather than overhead power lines would be considered. |
| The required minimum number of plots and transects required per zone area surveyed | The required minimum number of plots and transects required per zone area were not completed for all vegetation zone areas. OEH notes that fewer than the required number of plots were sampled in Zones 4, 7, 12 and 13. This was also the case in Zones 6, 8 and 9, although impact in these zones have been avoided, as well as Zones 10 and 11. Vegetation in these last two zones are either exotic or planted non-local vegetation and do not require assessment. The minimum number of plots for each vegetation zone for which impact is planned must be sampled. | <p>Revision of the development footprint has resulted in a need to update the BDAR. The vegetation zone impact area, minimum plot number required and number of plots undertaken is provided in the updated BDAR. In summary the number of plots for each zone was based on the area of each zone and the minimum number of plots and transects required per zone area as specified by the BAM.</p> <p>Further vegetation integrity plots were undertaken on the 14th Feb 2018 to cover additional areas to be impacted by the proposal and on the 5th December 2018 to survey the transmission line route.</p> |
| A Koala population occurs in the area and additional surveys are required | Koala was regarded as not present on the site. Koalas are known to occur in low densities in the general study area. Additional targeted surveys for Koalas, including surveys for scratches and scats, should be undertaken to confirm presence or absence on the site. | Additional surveys have now been completed; summarised within the updated BDAR. In summary targeted surveys for the solar array development site were undertaken on the 16 th and 17 th October 2018. Further targeted surveys were undertaken on the 15 th –18 th January 2019 to survey the transmission line easement. Trees were surveyed for koala scats using the Spot Assessment Technique (SAT). In woodland areas, one centre tree was selected that provided a food source for Koalas and the nearest 29 trees were surveyed for Koala Scats. No Koalas were detected over the duration of the surveys. No Koala scats |

| Issue | Detail of issue | Proponent response |
|-----------------------------------|--|--|
| | | were detected at the base of the trees surveyed. An assessment of significant impact is not required for the Koala. |
| 6.4 NSW RURAL FIRE SERVICE | | |
| Conditions of consent | <p>A Bush Fire Management Plan (BFMP) shall be prepared in consultation with NSW RFS District Fire Control Centre. The BFMP shall include:</p> <ul style="list-style-type: none"> • 24/7 contact details including alternative telephone contact; • Site infrastructure plan; • Fire fighting water supply plan; • Site access and internal road plan; • Construction of asset protection zones and their continued maintenance; • Location of hazards (Physical, Chemical and Electrical) that will impact on fire fighting operations and procedures to manage identified hazards during fire fighting operations; • Such additional matters as required by the NSW RFS District Office (Plan review and update). | <p>An existing mitigation measure is already proposed regarding the Bush Fire Management Plan:</p> <ul style="list-style-type: none"> ○ <i>Develop a Bush Fire Management Plan to include but not be limited to:</i> <ul style="list-style-type: none"> ○ <i>Specific management of activities with a risk of fire ignition (hot works, vehicle use, smoking, use of flammable materials, blasting)</i> ○ <i>Incorporation of fire safety and response in staff and contractor induction, training, OHS procedures and Work Method Statements</i> ○ <i>Designation of a staff safety officer tasked with ensuring implementation of the plan and regular liaison with firefighting agencies</i> ○ <i>Document all firefighting resources maintained at the site with an inspection and maintenance schedule</i> ○ <i>Monitoring and management of vegetation fuel loads</i> ○ <i>A communications strategy incorporating use of mobile phones, radio use (type, channels and call-signs), Fire Danger Warning signs located at the entrance to the site compounds, emergency services agency contacts</i> ○ <i>In developing the Bush Fire Management Plan, NSW RFS would be consulted on the volume and location of water supplies, fire-fighting equipment maintained on-site, fire truck connectivity requirements, proposed APZ and access arrangements, communications, vegetation fuel levels and hazard reduction measures.</i> <p>It is proposed to update this measure based on NSW Rural Fire Service detailed submission. The measure has now been updated as follows:</p> <ul style="list-style-type: none"> • Develop a Bush Fire Management Plan (BFMP) in consultation with NSW RFS District Fire Control Centre. The BFMP will include but not be limited to: <ul style="list-style-type: none"> ○ Specific management of activities with a risk of fire ignition (hot works, vehicle use, smoking, use of flammable materials, blasting). |

| Issue | Detail of issue | Proponent response |
|-------|---|---|
| | | <ul style="list-style-type: none"> ○ Document the location of hazards (Physical, Chemical and Electrical) that will impact on fire fighting operations and procedures to manage identified hazards during fire fighting operations. ○ Describe the construction of asset protection zones and their continued maintenance. ○ Incorporation of fire safety and response in staff and contractor induction, training, OHS procedures and Work Method Statements. ○ Designation of a staff safety officer tasked with ensuring implementation of the plan and regular liaison with firefighting agencies. ○ Document all firefighting resources maintained at the site with an inspection and maintenance schedule. ○ Monitoring and management of vegetation fuel loads. ○ 24/7 contact details including alternative telephone contact. ○ A communications strategy incorporating use of mobile phones, radio use (type, channels and call-signs), Fire Danger Warning signs located at the entrance to the site compounds, emergency services agency contacts. ○ Specific plans outlining: <ul style="list-style-type: none"> ▪ Site infrastructure. ▪ Fire fighting water supplies. ▪ Site access and internal roads. ○ Any additional matters as required by the NSW RFS District Office (Plan review and update). ● In developing the Bush Fire Management Plan, NSW RFS would be consulted on the volume and location of water supplies, fire-fighting equipment maintained on-site, fire truck connectivity requirements, proposed APZ and access arrangements, communications, vegetation fuel levels and hazard reduction measures. |
| | <p>Asset Protection Zone with a minimum width of 10 metres shall be maintained around all solar plant equipment and associated buildings as outlined within section 4.1.3 and Appendix 5 of 'Planning for Bush Fire Protection 2006' and the NSW Rural Fire</p> | <p>An existing mitigation measure has been included regarding Asset Protection Zones (APZ):</p> <ul style="list-style-type: none"> ● <i>An APZ of minimum 10 metres would be maintained between remnant or planted woody vegetation and solar plant infrastructure. The APZ around the perimeter of the site would incorporate a 4 metre wide gravel access track.</i> |


| Issue | Detail of issue | Proponent response |
|-------|--|--|
| | Service's document 'Standards for asset protection zones'. | <p>It is proposed to update this measure based on NSW Rural Fire Service detailed submission, as follows:</p> <ul style="list-style-type: none"> An APZ of minimum 10 metres would be maintained between remnant or planted woody vegetation and solar plant infrastructure. The APZ around the perimeter of the site would incorporate a 4 metre wide gravel access track. The APZs will be in accordance with section 4.1.3 and Appendix 5 of 'Planning for Bush Fire Protection 2006' and the NSW Rural Fire Service's document 'Standards for asset protection zones'. |
| | A 20,000 litre water supply (tank) fitted with a 65mm storz fitting shall be suitably located along a property access road to the development within the APZ. | <p>It is proposed to include this as a new mitigation measure:</p> <ul style="list-style-type: none"> A 20,000 litre water supply (tank) fitted with a 65mm storz fitting shall be suitably located along a property access road to the development within the APZ. |
| | To allow for emergency service personnel to undertake property protection activities the proposed perimeter access track shall comply with the requirements for fire trails in accordance with Section 4.1.3(3) of <i>Planning for Bush Fire Protection 2006</i> . | <p>An existing mitigation measure has been included regarding access:</p> <ul style="list-style-type: none"> <i>The perimeter access track would comply with the requirements for Fire Trails in the PBP guidelines. All access and egress tracks on the site would be maintained and kept free of parked vehicles to enable rapid response for firefighting crews and to avoid entrapment of staff in the case of bush fire emergencies. Access tracks would be constructed as through roads as far as practicable. Dead end tracks would be signposted and include provision for turning firetrucks.</i> <p>It is proposed to update this measure based on NSW Rural Fire Service detailed submission, as follows:</p> <ul style="list-style-type: none"> The perimeter access track would comply with the requirements for Fire Trails in accordance with Section 4.1.3(3) of <i>Planning for Bush Fire Protection 2006</i>. All access and egress tracks on the site would be maintained and kept free of parked vehicles to enable rapid response for firefighting crews and to avoid entrapment of staff in the case of bush fire emergencies. Access tracks would be constructed as through roads as far as practicable. Dead end tracks would be signposted and include provision for turning firetrucks. |

| Issue | Detail of issue | Proponent response |
|---|---|--|
| 6.5 NSW TRANSPORT, ROADS AND MARITIME SERVICES (RMS) | | |
| Access | Clarification as to whether a vehicular access is or is not required to the site from Goolma Road. If an access is required from Goolma Road, pursuant to section 101 of <i>State Environmental Planning Policy (Infrastructure) 2007</i> , the applicant is to explain why all vehicular access to the site cannot be practicably obtained from Campbells Lane. | All construction vehicles will access the site by Campbells Lane via Cobbora Road. It is now proposed that the proposal site would not be accessed off Goolma Road during construction. No changes to the EIS mitigation measures are considered to be required. |
| Number of Construction staff | The EIS states 200 or more of the 250 construction staff 'may' be transported to and from the site each day. However, the traffic assessment provided assumes 200 or more staff 'will' be transported to and from the site each day. No details of where the shuttle bus will transport staff from or staffing accommodation location(s) have been provided. Further information is required either committing to a minimum number of staff being transported to and from the site by bus each day, including details of how this commitment will be fulfilled, or alternatively, the traffic assessment is to be modified to assess a worst case scenario (i.e. each construction staff member drives to and from the site). | <p>The Traffic Impact Assessment report provides analysis of traffic volumes and turn treatments based on the assumption of 200 staff being transported to and from the site each day by bus. This is representative of the peak number of staff required at any given time during the construction period and will vary according to the actual work being undertaken at any given time. Further, the location of staff will be highly dependent on a range of factors, including:</p> <ul style="list-style-type: none"> • The number of local contractors suitable to conduct the work, and • The availability of local accommodation for construction workers (influenced by the timing of construction relative to other projects and events in the region) <p>The Austroads Guide to Road Design Part 4A is used as "<i>a reference for intervention levels when upgrading existing intersection turn treatments</i>". The analysis provided in the Traffic Impact Assessment assesses the BAR/BAL turn treatments against the warrants discussed in the Austroads Guide. The analysis currently shows considerable "headroom" when assessed against these warrants and hence some flexibility is expected with respect to the number of staff who are transported to and from the site by bus.</p> <p>AGL remains committed to ensuring that these warrants are maintained through the provision of a detailed Traffic Management Plan as part of the CEMP and DEMP, in consultation with the Dubbo Regional Council and Roads and Maritime Services (RMS). The plan would be produced prior to construction and would include, but not be limited to:</p> <ul style="list-style-type: none"> • The designated routes of construction traffic to the site. • Carpooling/shuttle bus arrangements to minimise vehicle numbers during construction and ensure that warrants provided in the Austroads Guide to |

| Issue | Detail of issue | Proponent response |
|--|---|---|
| | | <p>Road Design Part 4A: Unsignalised and Signalised Intersections that apply to major road turn treatments are maintained within the limits of the proposed BAR / BAL turn treatments.</p> <ul style="list-style-type: none"> • Identify specific road hazards associated with the area including not limited to fog, wet weather, frost and wildlife. • Pedestrian management - Site access is to be restricted to authorised personnel only and existing employees on site. Pedestrian access to and around the site is to be maintained at all times. Within the site pedestrian travel paths are to be maintained to key areas such as building entrances and be free from trip hazards. • Scheduling of deliveries. • Community consultation regarding traffic impacts for nearby residents and school bus operators. • Consideration of impacts to the railway. • Traffic control plans (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. <p>Updates to the existing mitigation measure based on the RMS submission are provided in bold above.</p> |
| <p>Campbells Lane/Goolma Road intersection access</p> | <p>The EIS assumes all vehicular access from Campbells Lane will be via Cobbora Road. Details of how vehicular access to the site will be obtained from Campbells Lane via Cobbora Road (MR353) only and not also from Campbells Lane via Goolma Road is required. Should the applicant not be able to demonstrate how vehicular access from Campbells Lane will be via Cobbora Road only, an assessment of the traffic impacts at the Campbells Lane/Goolma Road intersection is required.</p> | <p>All construction vehicles will access the site by Campbells Lane via Cobbora Road. It is now proposed that the proposal site would not be accessed off Goolma Road during construction.</p> <p>No changes to the EIS mitigation measures are considered to be required.</p> |

| Issue | Detail of issue | Proponent response |
|---|--|--|
| <h2>6.6 DEPARTMENT OF INDUSTRY</h2> | | |
| <p>Water sources during construction and operation</p> | <p>The proponent should provide confirmation that a source of water has been secured for the construction and operation requirements of the proposed development.</p> <p>The proponent has indicated that potential sources of water during construction of the proposed development are groundwater and/or a local council water station. Groundwater would be sourced from on-site bores, though the proponent has yet to obtain a water access licence. In addition, the proponent has indicated that no groundwater will be extracted.</p> | <p>Water use during construction and operation is outlined in Section 8.1 of the EIS.</p> <p>During the construction phase, water would be sourced from onsite bores and local council water station, in consultation with Council. This water requirement is likely to vary depending on weather conditions such as rainfall and wind and is estimated to be up to 55ML per annum.</p> <p>To use water from bores onsite, a Water Access Licence (WAL) would need to be obtained. The number of Aquifer WAL's available for the Lachlan Fold Belt MDB Groundwater source as of 16 May 2018 was 1,004. The water available under these Aquifer WAL's was 66,840.7ML for the 2016/17 financial year. Of this volume 3,744.8ML was used or about 5.6% of the water available. The water required for construction represents 0.08% of the volume available and 0.08% of the water not used but available (94%) for that financial year. The impact of drawing the 55ML per annum would be negligible because ample remaining water is available in the system based on previous year's figures.</p> <p>Dubbo Regional Council have a water filling station with a key for which an application can be made and for which the Council would invoice, based on volume sourced. There is no limit on the amount of water that can be accessed in this manner, according to Council. If this water is required, water can then be trucked to site. Under this arrangement, water is purchased from Council's allocation and no WAL is required by the proponent.</p> <p>The local water utility available for the 2016/2017 year was 18,805ML with 9 WALs. The water required for the Proposal (55ML per annum) is 0.29% of the local water utility available this past year. For the 2016/2017 period only 11,512.1ML of the allocation was used. Taking the construction water from the local water utility supply for construction in a similar year would have a negligible impact on the available supply. The Proposal's construction water requirement would result in a temporary and short term impact on the local water resource. A water access licence (WAL) and/or access to the Dubbo Regional Council water facility would be arranged prior to the construction phase of the project.</p> <p>Potable water requirements for staff during construction would be approximately 9,125kL per annum. The non-potable water would be trucked to the site on as needs basis and stored within temporary water tanks at the staff amenities area.</p> |

| Issue | Detail of issue | Proponent response |
|---------------------|---|---|
| | | <p>During operation, rain water would be gathered from the O&M building roof and stored within onsite tanks. In cases of prolonged drought water would be trucked to site as required. If onsite requirements are not sufficient, water would be purchased from Council. Due to reasonably regular rainfall solar photovoltaic modules generally do not require cleaning anywhere along the east coast of Australia, therefore water use during operation would be minimal and limited to staff amenities. Hence, no groundwater would be required during the operation phase of the project.</p> <p>No changes to the proposal or mitigation measures are proposed in response to this issue.</p> |
| Watercourses | <p>A number of mapped watercourses exist on site, including a mapped 4th order watercourse that crosses from the north to the south western corner of the development.</p> <p>The proponent has identified this watercourse as a 3rd order stream and has stated that they will maintain a 30 m buffer. This is not consistent with the Guidelines for Controlled Activities on Waterfront Land (Natural Resources Access Regulator) for a 4th order watercourse.</p> | <p>A hydrologist was engaged to prepare the Hydrological and Hydraulic Analysis Report as well as provide input into the proposal's impact on waterways and mitigation of impacts.</p> <p>Figure 10 of the Hydrological and Hydraulic Analysis Report and Figure 8-1 of the EIS (as seen below) show the classification of watercourses both across the site and from the contributing catchment based on the Strahler system in accordance with the Guidelines for Riparian Corridors on Waterfront Land (DPI Water, 2012). Our classification shows that the highest order stream present on the Proposal site is a 3rd order stream. The waterway cannot be a 4th order stream order as a 4th order classification can only occur upon the confluence of two 3rd order stream orders as per the Strahler system. The 30m buffer is appropriate to 3rd order streams as per the Guidelines for Controlled Activities on Waterfront Land (DPI Water, 2012).</p> <p>No changes to the proposal or mitigation measures are proposed in response to this issue.</p> |

| Issue | Detail of issue | Proponent response |
|---|---|---|
| |  | |
| Water crossings | <p>The proponent should construct proposed road crossings over 1st and 2nd order streams in accordance with the Guidelines for Watercourse Crossings in Waterfront Land (Department of Industry).</p> | <p>The EIS outlines the following in the description of the Proposal (Section 4.3.6) and additionally is a mitigation measure in Section 8.1:</p> <ul style="list-style-type: none"> Design waterway crossings and services crossing in accordance with the publications: <ul style="list-style-type: none"> <i>Guidelines for Watercourse Crossings on Waterfront Land (NSW DPI, 2012).</i> <p>No changes to the proposal or mitigation measures are proposed in response to this issue.</p> |
| Groundwater Dependent Ecosystems | <p>The proponent has identified that a number of low to moderate potential Groundwater Dependent Ecosystems (GDEs) may exist on site, and that these</p> | <p>Section 8.1 of the EIS outlines there are a number of low and moderate potential terrestrial vegetation GDEs mapped within the solar plant site. The EIS also found the groundwater was</p> |

| Issue | Detail of issue | Proponent response |
|-----------------------------|---|---|
| | will not be affected by changes to groundwater levels as no groundwater is to be intercepted or extracted. Potential GDEs will be directly impacted through vegetation removal. | <p>approximately 12.2 to 17.4m deep. Therefore the installation of infrastructure, that would be up to 2.4m deep, is unlikely to impact groundwater sources.</p> <p>Additionally the clearing of trees on site would unlikely have an impact on the groundwater level due to the minimal vegetation clearing and groundwater depths.</p> <p>During construction, water would be extracted from onsite bores. However, the onsite bores are currently used for agricultural purposes. The landowner currently uses approximately 100,000 L/day on average, which equates to approximately 36.5ML per year. The Wellington North Solar Plant estimates it would use approximately 55ML per year, which is 18.5ML more than currently used by the landowner. The proposals' water use is not considered significant compared to the total groundwater storage available of the region. There was 66,840ML of water available for WALs in the 2016/17 financial year. The water required for the proposal would equate to 0.29% of the local water utility available in that year. Therefore, the use of groundwater sources is unlikely to impact on Terrestrial GDEs. No changes to the proposal or mitigation measures are proposed in response to this issue.</p> |
| Condition of consent | The proponent should prepare a Soil and Water Management Plan and Erosion and Sediment Control Plan in consultation with DoI – Lands and Water. | <p>An existing mitigation measure has been included regarding the preparation of the Soil and Water Management Plan with erosion and sediment control plans.</p> <ul style="list-style-type: none"> • <i>As part of the CEMP, a Soil and Water Management Plan (SWMP) (with erosion and sediment control plans) would be prepared, implemented and monitored during the Proposal, in accordance with Landcom (2004), to minimise soil (and water) impacts. These plans would include provisions to:</i> <ul style="list-style-type: none"> ○ <i>Implement management responses outlined in the Soil Survey Report (McMahon, 2018).</i> ○ <i>Install, monitor and maintain erosion controls.</i> ○ <i>Ensure that machinery leaves the site in a clean condition to avoid tracking of sediment onto public roads which may cause risks to other road users through reduced road stability.</i> ○ <i>Manage topsoil in all excavation activities, separate subsoils and topsoils and ensure that they are replaced in their natural configuration to assist revegetation. Stockpile topsoil appropriately so as to minimise weed infestation, maintain soil organic matter, maintain soil structure and microbial activity.</i> |

| Issue | Detail of issue | Proponent response |
|-------|-----------------|--|
| | | <ul style="list-style-type: none"> ○ <i>Minimise the area of disturbance from excavation and compaction; rationalise vehicle movements and restrict the location of activities that compact and erode the soils as much as practical. Any compaction caused during construction would be treated such that revegetation would not be impaired.</i> ○ <i>Manage works in consideration of heavy rainfall events; if a heavy rainfall event is predicted, the site should be stabilised, and work ceased until the wet period had passed.</i> <p>It is proposed to update this measure based on DoI submission, as follows:</p> <ul style="list-style-type: none"> • As part of the CEMP, a Soil and Water Management Plan (SWMP) (with erosion and sediment control plans) would be prepared, implemented and monitored during the Proposal, in accordance with Landcom (2004), to minimise soil (and water) impacts. These plans would include provisions to: <ul style="list-style-type: none"> ○ Prepare SWMP in consultation with DoI – Lands and Water. ○ Implement management responses outlined in the Soil Survey Report (McMahon, 2018). ○ Install, monitor and maintain erosion controls. ○ Ensure that machinery leaves the site in a clean condition to avoid tracking of sediment onto public roads which may cause risks to other road users through reduced road stability. ○ Manage topsoil in all excavation activities, separate subsoils and topsoils and ensure that they are replaced in their natural configuration to assist revegetation. Stockpile topsoil appropriately so as to minimise weed infestation, maintain soil organic matter, maintain soil structure and microbial activity. ○ Minimise the area of disturbance from excavation and compaction; rationalise vehicle movements and restrict the location of activities that compact and erode the soils as much as practical. Any compaction caused during construction would be treated such that revegetation would not be impaired. |

| Issue | Detail of issue | Proponent response |
|---|---|---|
| | | <ul style="list-style-type: none"> ○ Manage works in consideration of heavy rainfall events; if a heavy rainfall event is predicted, the site should be stabilised, and work ceased until the wet period had passed. |
| Agriculture | <p>A baseline data set for current agricultural productivity should form part of the criteria for land rehabilitation outcomes to be achieved especially for agricultural purposes. For example, as a baseline data set, crop yields and stocking rates over a minimum of the last 3 years could be used. Other criteria to be considered includes physical aspects (depth of topsoil, drainage), as well as chemical aspects (pH, cation exchange capacity, other fertility aspects) that form would be part of the decommissioning and rehabilitation plan.</p> | <p>An existing mitigation measure has been included regarding the rehabilitation plan:</p> <ul style="list-style-type: none"> • <i>A Rehabilitation Plan would be prepared to ensure the array site is returned to its pre-solar Plant land capability. The plan would be developed with reference to the base line soil testing and with input from an agronomist to ensure the site is left stabilised, under a cover crop or other suitable ground cover. The plan would reference:</i> <ul style="list-style-type: none"> ○ <i>Australian Soil and Land Survey Handbook (CSIRO, 2009)</i> ○ <i>Guidelines for Surveying Soil and Land Resources (CSIRO, 2008)</i> ○ <i>The land and soil capability assessment scheme: second approximation (OEI, 2012)</i> <p>It is proposed to update this measure based on DoI submission, as follows:</p> <ul style="list-style-type: none"> • A Rehabilitation Plan would be prepared to ensure the array site is returned to its pre-solar Plant land capability. The plan would be developed with reference to the base line soil testing, baseline agricultural productivity (i.e crop yields and stocking rates over the last 3 years) and with input from an agronomist to ensure the site is left stabilised, under a cover crop or other suitable ground cover. The plan would reference: <ul style="list-style-type: none"> ○ <i>Australian Soil and Land Survey Handbook (CSIRO, 2009).</i> ○ <i>Guidelines for Surveying Soil and Land Resources (CSIRO, 2008).</i> ○ <i>The land and soil capability assessment scheme: second approximation (OEI, 2012).</i> |
| Decommissioning and rehabilitation | <p>Other decommissioning and rehabilitation factors to consider are:</p> <ul style="list-style-type: none"> • All infrastructure (both above and below ground) being removed at the decommissioning stage. This is not clearly stated in the assessment. • Any stockpiled soil is managed to ensure its long term viability through active management i.e. storage and vegetative | <p>Section 4.7 of the EIS outlines that all solar plant infrastructure would be removed during decommissioning. Key elements of the Proposal decommissioning would include:</p> <ul style="list-style-type: none"> • The solar arrays would be removed, including the foundation posts. Materials would be sorted and packaged for removal from the site for recycling or reuse. Much of the solar array panels would be recyclable. • All site amenities and equipment would be removed, and materials recycled or reused, wherever practicable. |

| Issue | Detail of issue | Proponent response |
|-------|--|--|
| | <p>protocols, along with appropriate nutrient and weed management.</p> <ul style="list-style-type: none"> The appropriate pasture species for revegetation and production purposes being assessed by local agronomic experts, and monitored for their persistence as part of the operational aspects of the solar farm's operation. | <ul style="list-style-type: none"> Posts and cabling installed would be removed and recycled, equipment below this depth would be left in situ. Fencing would be removed including small concrete footings. <p>Stockpile management would be addressed in the Soil and Water Management Plan (SWMP), which is a commitment of the EIS (Section 7.5). Specifically the SWMP would include:</p> <ul style="list-style-type: none"> Manage topsoil in all excavation activities, separate subsoils and topsoils and ensure that they are replaced in their natural configuration to assist revegetation. Stockpile topsoil appropriately so as to minimise weed infestation, maintain soil organic matter, maintain soil structure and microbial activity. <p>A commitment of the EIS (Section 7.5) is to develop a Groundcover Management Plan:</p> <ul style="list-style-type: none"> A Groundcover Management Plan would be developed in consultation with an agronomist and taking account of soil survey results to ensure perennial grass cover is established across the site as soon as practicable after construction and maintained throughout the operation phase. The plan would cover: <ul style="list-style-type: none"> Soil restoration and preparation requirements. Species election. Soil preparation. Establishment techniques. Maintenance requirements. Perennial groundcover targets, indicators, condition monitoring, reporting and evaluation arrangements – i.e. Live grass cover would be maintained at or above 70% at all times to protect soils, landscape function and water quality. Any grazing stock would be removed from the site when cover falls below this level. Grass cover would be monitored on a fortnightly basis using an accepted methodology. Contingency measures to respond to declining soil or groundcover condition. Identification of baseline conditions for rehabilitation following decommissioning. <p>No changes to the proposal or mitigation measures are proposed in response to this issue.</p> |

| Issue | Detail of issue | Proponent response |
|------------------------------------|--|--|
| 6.7 HERITAGE COUNCIL OF NSW | | |
| Historic heritage | <p>The EIS doesn't include a historical archaeological assessment, impact of the proposed development on potential archaeological relics and their significance cannot be ascertained. There if the development proposal is approved, the following condition is recommended to be included in the conditions of consent:</p> <p>Prior to any ground disturbance works occurring onsite, a suitably qualified historical archaeologist should be engaged to undertake a historical archaeological assessment of the site. The Assessment shall comply with Heritage Council of NSW guidelines including Assessing significance of Historical Archaeological sites and Relics 2009 and Archaeological Assessment 1996. This assessment should identify what relics if any are likely to be present, assess their significance and consider the impacts from the proposal on this potential resource. Where harm is likely to occur, it is recommended that the significance of the deposits or relics be considered in determining an appropriate mitigation strategy. If harm cannot be avoided in whole or in part, an appropriate Research Design and Excavation Methodology should also be prepared prior to any excavation occurring to guide any proposed excavations. The archaeological mitigation program should be directed by a person that satisfies the Heritage Council of NSW Excavation Director criteria</p> | <p>A Historical Archaeological Assessment has been prepared for the proposal and provided in Appendix D,</p> <p>The assessment determined that there is no potential for archaeological subsurface deposits of an historical nature to occur within the proposal area (except for the excluded Noonee Nyrang Homestead property and Soil Conservation Centre Facility), and thus no impact to any identified historic heritage has been determined. Evidence of the settlement patterns and land use across the proposal area is indicative that, in the event of unexpected subsurface discovery, it would likely not remain in situ and present little scientific value. Our recommendation is for work to continue as planned, maintaining the exclusion zone around the locally listed Noonee Nyrang Homestead and its surrounding outbuildings and gardens.</p> <p>No changes to the proposal or mitigation measures are proposed in response to this issue.</p> |

| Issue | Detail of issue | Proponent response |
|-------------------------------------|--|---|
| | commensurate with the activity and significance level identified. | |
| 6.8 DUBBO REGIONAL COUNCIL | | |
| Voluntary Planning Agreement | Council would be prepared to consider a Voluntary Planning Agreement to offset potential impacts. During the construction period Council outline potential impacts to Council's road network and other public amenities and services. Additionally, the removal of agricultural land resulting in a loss of productive rural land and a decreased local population which can impact upon local services (schools, police, health) due to the potentially reduced population numbers. | <p>On 29 August 2018, AGL sent a letter to Mr Steven Jennings, Manager Strategic Planning Services at the Dubbo Regional Council (DRC). On the 18th January 2019, following further consultation with DRC, AGL sent another letter to further clarify the proposed community benefit sharing program.</p> <p>These letters outlined AGL's proposed benefit sharing program with the Wellington community, which includes:</p> <ul style="list-style-type: none"> • \$60,000 construction community investment program to be distributed to local community groups during the construction of the Wellington North Solar Plant. • Energy discounts for locals in Wellington and surrounds. • Rooftop solar for the most impacted neighbours to the site. • An apprenticeship program during the operation of the solar plant. <p>Based on AGL's extensive consultation to date, AGL is confident that these programs match community expectations regarding the proposed solar plant. However, should the community needs or priorities change during the construction or operation of the solar plant AGL will remain flexible and distribute community funding in consultation with the Dubbo Regional Council and the local community.</p> <p>AGL anticipates the Community Dialogue Group (once formed) will be the vehicle responsible for directing the funding to the most appropriate area, of which the Dubbo Regional Council will be a part of.</p> <p>As such, AGL are confident that a Voluntary Planning Agreement is not necessary for this Project.</p> <p>No changes to the proposal or mitigation measures are proposed in response to this issue.</p> |
| Housing Availability for | Whilst the construction period associated with the development of a solar farm is relatively short, | AGL are experienced in developing and managing the construction of renewable energy developments in rural and regional New South Wales. For example, AGL (with the Powering |

| Issue | Detail of issue | Proponent response |
|---|--|---|
| Construction Workers | <p>Council is concerned that the cumulative impact of the construction of six (6) solar farms on the Wellington community is not being adequately considered by the Department of Planning and Environment and development proponents.</p> <p>To assist Council in understanding the impacts of large infrastructure and other development projects, Council in conjunction with consultants REMPLAN developed the Dubbo Infrastructure Services Impacts Model. Council's model shows that during this period, some 345 additional dwellings (or serviced accommodation) would be required to house this workforce over time.</p> <p>Council as part of a Planning Agreement process needs to ensure appropriate strategies are in place to guide such infrastructure projects in the future whilst minimising impacts on permanent and holiday accommodation and the integrity of rural lands and farming enterprises.</p> <p>It is requested that as part of any development consent issued for the project that the proponent be required to negotiate and enter into a Planning Agreement with Dubbo Regional Council.</p> | <p>Australian Renewables Fund) is constructing the Silverton Wind Farm in Silverton, a town of approximately 30 residents.</p> <p>Should the Wellington North Solar Plant development be approved and progress to construction, AGL will continue to work with the Dubbo Regional Council and the construction contractor to assist with the management of community impacts.</p> <p>No changes to the proposal or mitigation measures are proposed in response to this issue.</p> |
| Cumulative impact on agricultural land | <p>Dubbo Regional Council raises concerns with the cumulative impact these developments may have on the agricultural productivity and economy of the region. There is the potential for significant tracts of productive agricultural land to be sterilised by a number of large scale solar farm developments. Council is concerned that the cumulative impact of the construction of six (6) solar farms on the Wellington community is not being adequately</p> | <p>Section 7.5 of the EIS assessed the Proposal's impact on agricultural land and production. It found that no land use conflicts are anticipated for existing adjacent agricultural land uses or future agricultural land uses on the Proposal site or adjacent lands.</p> <p>The Proposal would displace approximately 816ha of agricultural land at the site for the life of the solar plant (approximately 30 years). The transmission easement is mostly situated adjacent to existing transmission lines and easements associated with the Wellington Substation, so no significant change in land use would result from this infrastructure component.</p> |

| Issue | Detail of issue | Proponent response |
|-------|--|---|
| | <p>considered by the Department of Planning and Environment and development proponents. Removing a number of significant agricultural holdings has the potential to impact on the local Wellington economy which is largely supported by primary production.</p> | <p>The sterilisation of the 816ha (the development footprint) during the solar farm's operational life from agricultural productivity in the region is insignificant in relation to the extent of productive land in the South Western Slopes of New South Wales. Sheep grazing represents 46.5% (meat and wool) of agricultural commodities from the former Wellington Council LGA (DPI, 2011). This is equal to 4.65% of the sheep (meat and wool) agricultural commodities for NSW. The census (2011) recorded 594,694 sheep in the former Wellington Council LGA. The Proposal site's sheep carrying capacity is less than 1% of this total. The current agricultural production on site is grazing, no sustained cropping is undertaken on site. Further it is noted that some grazing between the solar arrays can be undertaken to control grass and weed growth, although this must be managed carefully to ensure a stable ground cover remains to guard against erosion.</p> <p>Nearly all of the 816ha is mapped as Biophysical Strategic Agricultural Land (BSAL). This equates to 1% of the mapped BSAL within the Dubbo Regional Council LGA; there is approximately 98,903ha of mapped BSAL within the Dubbo Regional Council LGA. Based on the survey results and historic use, the land does not align with 'high capability land. Soil surveys (McMahon, 2018) of the site found the soil surface structure has potential to deteriorate following prolonged cultivation/ handling to produce a hard-setting surface. The soils were found to be susceptible to rill and sheet erosion. The soil surveys noted the land could not sustain high levels of productivity. As such, the proposal would not impact high yielding land. The resting period is likely to improve soil biota, as ground cover will be maintained during operation.</p> <p>No impacts on adjacent properties or their land use practices would occur. Further the project would be highly reversible, committing to return the land to its current land capability post decommissioning, for continued grazing and cropping or some alternative land use.</p> <p>It is anticipated the solar plant will employ 2-4 full time staff and will draw on local suppliers for the following services which we believe will provide similar employment opportunities from the site as well as protect the natural resources onsite:</p> <ul style="list-style-type: none"> • Groundcover management • Weed management • Fire safety compliance • Pest and vermin control • Cleaning services • Equipment rental |

| Issue | Detail of issue | Proponent response |
|---|---|---|
| | | <ul style="list-style-type: none"> Vehicle and equipment servicing <p>Finally, the EIS includes a commitment of preparing a Rehabilitation Plan after decommissioning of the plant. The plan would ensure the array site is returned to its pre-solar plant land capability. The plan would be developed with reference to the base line soil testing and with input from an agronomist to ensure the site is left stabilised, under a cover crop or other suitable ground cover. The plan would reference:</p> <ul style="list-style-type: none"> <i>Australian Soil and Land Survey Handbook</i> (CSIRO, 2009). <i>Guidelines for Surveying Soil and Land Resources</i> (CSIRO, 2008) . <i>The land and soil capability assessment scheme: second approximation</i> (OEH, 2012). <p>AGL are unable to comment on behalf of the DPE or other developers.</p> <p>No changes to the proposal or mitigation measures are proposed in response to this issue.</p> |
| Setbacks | In regards to the site layout, it appears the photovoltaic arrays will extend to the property boundaries, however without a detailed plan this is difficult to determine. It is therefore suggested the arrays be suitably setback from property boundaries to ensure suitable vehicular access can occur to the perimeter fencing, landscaping and arrays for the maintenance and servicing of such. | <p>Section 8.3.3 of the EIS commits AGL to having a 4 metre wide gravel access track around the perimeter of the site as an APZ. The perimeter access track would comply with the requirements for Fire Trails in accordance with Section 4.1.3(3) of Planning for Bush Fire Protection 2006 in accordance with the requirements of the NSW Rural Fire Service. (Refer to response to RMS comments above)</p> <p>No changes to the proposal or mitigation measures are proposed in response to this issue.</p> |
| Controlled Activities and Integrated Development | It is noted that arrays, transmissions lines and roadway will cross waterways. Works within 40 metres of a water course generally requires a Controlled Activity Approval from the NSW Office of Water pursuant to Section 90 of the <i>Water Management Act 2000</i> . Such works would constitute Integrated Development and require concurrence from the Office of Water. The EIS | <p>Section 5 of the EIS outlines the planning context including exemptions of the project. Section 4.36 of the <i>Environmental Planning and Assessment Act 1979</i> provides that a development would be State Significant Development (SSD) if it is declared to be SSD by a State Environmental Planning Policy (SEPP). The <i>State Environmental Planning Policy (State and Regional Development) 2011</i> (NSW) (SRD SEPP) declares the Wellington North Solar Plant to be SSD, as it is development for the purpose of electricity generating works with a capital investment value of greater than \$30 million (Clause 20, Schedule 1).</p> <p>Under Section 4.41 of the EP&A Act, SSD authorised developments do not require the following authorisations:</p> |

| Issue | Detail of issue | Proponent response |
|-----------------|---|--|
| | makes no reference to any integrated approval processes or exemptions. | <p>(a) A water use approval under section 89, a water management work approval under section 90 or an activity approval (other than an aquifer interference approval) under section 91 of the <i>Water Management Act 2000</i> (NSW).</p> <p>Therefore, the development doesn't require a Controlled Activity Approval or concurrence from the NSW Office of Water.</p> <p>Additionally Section 4.46 (1) of the EP&A Act states 'Integrated development is development (not being State significant development or complying development)', therefore the Proposal is not integrated development.</p> <p>No changes to the proposal or mitigation measures are proposed in response to this issue.</p> |
| Heritage | Council notes a locally listed heritage item is located on the property, namely the Noonee Nyrang Homestead, located on Lot 84 DP 2987 (Schedule 5 <i>Wellington Local Environmental Plan 2012</i> - Item 11). Based on the submitted plans, Council considers there are suitable setbacks provided to ensure no adverse impact from the development, particularly the photovoltaic arrays, to the heritage item. Council requests these setbacks be maintained and not be breached by any aspect of the development. | <p>The EIS includes the following measures to protect the Noonee Nyrang Homestead and its associated infrastructure:</p> <ul style="list-style-type: none"> • The Noonee Nyrang Homestead would not be altered whilst in use as an Office and Maintenance building for the solar plant. • The existing outbuildings and stone shed around the Noonee Nyrang Homestead would be maintained and not altered. <p>The array locations presented in this Submissions Report (refer to Figure 3-1 and Figure 3-2) is the largest footprint based on the constraints identified onsite. AGL are committed to only placing infrastructure in the areas presented in their layouts.</p> <p>No changes to the proposal or mitigation measures are proposed in response to this issue.</p> |
| Heritage | Council notes the development will require the destruction of several older built features on the property including a number of stone water troughs and a stone culvert, as well as a survey tree. It is noted none of these are listed heritage items. As per correspondence from Dubbo Regional Council to NGH Environmental on 22 June 2018, Council does not consider these features of any heritage significance and thus objection is not raised to their destruction. | Noted. |

| Issue | Detail of issue | Proponent response |
|----------------------|---|--|
| Road upgrades | <p>Dubbo Regional Council requests the following road upgrades be undertaken:</p> <ul style="list-style-type: none"> Campbells Road from Cobbora Road to Site Access 1 shall be bitumen sealed to Dubbo Regional Council's rural road standard being a minimum of 7.5 metre wide bitumen sealed two-way carriageway; Intersection of Cobbora Road and Campbells Lane - Upgrade of the intersection to allow B-double vehicles to safely turn; Site Access 1 -Upgrades to this entry point shall be carried out in line with Council standards (STD1264) for B-double vehicles. The BAR and BAL upgrades as proposed in the Environmental Impact Statement would be required to allow sufficient space for the turning of B-Double vehicles; Site Access 2 and 3 - Upgrades to accommodate B-double vehicles in accordance with Council standards (STD1264); Goolma Road currently has high traffic volumes generated from the two (2) Wellington Correctional Centres. The impact of additional traffic volumes generated from the construction works shall be considered in the design of Site Accesses 2 and 3; Advisory signs shall be located adjacent to the Cobbora Road/Campbells Lane | <p>An existing mitigation measure has been included in the EIS regarding the sealing of Campbells Lane:</p> <ul style="list-style-type: none"> <i>A pavement review would be undertaken and bituminous surface be applied to Campbells Lane to reduce pavement degradation and improve driver safety.</i> <p>It is proposed to update this measure based on Dubbo Regional Council's submission:</p> <ul style="list-style-type: none"> A pavement review would be undertaken and bituminous surface be applied to Campbells Lane between Cobbora Road and the site access to reduce pavement degradation and improve driver safety. The bitumen surface would be in accordance with Dubbo Regional Council's rural road standard including being a minimum of 7.5 metre wide bitumen sealed two-way carriageway. <p>The EIS makes commitments to prepare a detailed Traffic Management Plan prior to the construction phase, and that:</p> <ul style="list-style-type: none"> The following intersections treatments would be undertaken in consultation with Dubbo Regional Council: <ul style="list-style-type: none"> The intersection of Cobbora Road / Campbells Lane would be upgraded to provide a BAR/BAL turn type treatment including shoulder widening on Cobbora Road (major road); The proposed site access on Campbells Lane would be designed to provide BAR/BAL turn type treatment; and Intersection treatments would be designed to accommodate articulated vehicles of up to 19 m in length. <p>The proposed intersection treatments allow for vehicles up to 19m long (semi-trailers). Vehicles greater than 19m long (eg b-doubles) would require special permits and traffic management. The proposal is not expected to extensively use b-double vehicles.</p> <p>Site access 2 and 3 off Goolma Road would no longer be used during construction.</p> <p>The EIS commits AGL to the preparation and implementation of a Traffic Management Plan which includes signage location.</p> <p>It is proposed to include this as a new mitigation measure:</p> |

| Issue | Detail of issue | Proponent response |
|----------------------|--|---|
| | <p>intersection, and Site Accesses 1, 2 and 3, indicating high volumes of turning heavy vehicles; and</p> <ul style="list-style-type: none"> All gates be setback a minimum of 26 metres from the property boundary to permit a B- Double vehicle to fully stand within the property boundary and not overhang onto the road reserve while any access gates are being opened or closed. | <ul style="list-style-type: none"> All gates will be setback a minimum of 26 metres from the property boundary to permit a B- Double vehicle to fully stand within the property boundary and not overhang onto the road reserve while any access gates are being opened or closed. |
| Road upgrades | <p>The intersection and site access upgrades stipulated shall be undertaken to allow B-Double vehicles to safely negotiate each intersection/access without being required to cross on to the incorrect side of the road at any time to negotiate the turning movement. Detailed plans submitted for such construction works should demonstrate this detail.</p> | <p>Refer to the above response.</p> |
| Road upgrades | <p>Council requests all road works identified in the EIS, by Roads and Maritime Services and stipulated above be completed prior to any aspect of the solar farm construction commencing.</p> | <p>Section 4.4 of the EIS outlines that upgrades to the public road network and site entry point would be undertaken as early works. These are works that would commence prior to the construction phase of the Proposal.</p> <p>No changes to the proposal or mitigation measures are proposed in response to this issue.</p> |
| Landscaping | <p>In order to offset any visual concerns, the implementation of a landscape buffer around the entire perimeter of the development is requested where there is no existing visual buffer through existing landscaping or topographical features.</p> | <p>Based on the VIA, AGL are committed to the following landscaping:</p> <ul style="list-style-type: none"> An intermittent band of screen planting would be located: <ul style="list-style-type: none"> Between the property boundary and the solar arrays, in locations along Goolma Road and Cobbora Road where there is no existing vegetation and where the arrays are immediately adjacent to the boundary. Along the Campbells Lane boundary to mitigate impacts on properties on the northern side of Campbells Lane. |

| Issue | Detail of issue | Proponent response |
|---------------------------|--|---|
| | | <p>The location of the proposed screen planting can be seen in Figure 3-2 and has been developed specifically to augment existing vegetation screening at specific viewpoints. The additional planting requested, rather than softening the impact of views of infrastructure, is considered likely to create an unnatural hedge effect, not in keeping with the existing vegetation formations. Blocking views entirely of the solar farm is not proposed and not considered warranted.</p> <p>No changes to the proposal or mitigation measures are proposed in response to this issue.</p> |
| <p>Landscaping</p> | <p>Dubbo Regional Council requests a condition be included on the consent that prior to issue of a Construction Certificate a detailed Landscape Plan be submitted for approval which includes details of:</p> <ul style="list-style-type: none"> • Setback of landscaping from the solar panels and property boundaries; • Evidence of how the landscaping conforms to the requirements of any bushfire Asset Protection Zone (APZ); • The height of plantings at the time of planting (being of advanced stock); • Species planted; and • Nature of irrigation to be used. <p>It is further requested the landscaping have a minimum mature height of 3 metres utilising deep rooted, water tolerant, native plant species endemic to the Wellington local area. Dubbo Regional Council staff can be consulted on the type of species chosen. Such landscaping as a minimum should be undertaken in stages to correlate with the construction of the adjacent solar panel(s).</p> | <p>The EIS includes a Landscaping plan (refer to Figure 3-1 and Figure 3-2) and commitments for landscaping. The landscape plan and the mitigation measure below addresses councils requirements for the landscaping setbacks, planting heights, species, timing and management of the screening. Mitigation measures regarding bushfire management, which includes APZs provides evidence that they are being considered as part of the Proposal.</p> <p>The following mitigation measure has been included in the EIS regarding landscaping, to fragment / soften the view of infrastructure:</p> <ul style="list-style-type: none"> • <i>An intermittent band of screen planting would be located:</i> <ul style="list-style-type: none"> ○ <i>Between the property boundary and the solar arrays, in locations along Goolma Road and Cobbora Road where there is no existing vegetation and where the arrays are immediately adjacent to the boundary.</i> ○ <i>Along the Campbells Lane boundary to mitigate impacts on properties on the northern side of Campbells Lane (identified in Appendix H).</i> • <i>To ensure that the screen planting integrates into the existing landscape character:</i> <ul style="list-style-type: none"> ○ <i>Bands of planting would be a mix of locally native tree and shrub species to ensure a naturalistic effect whilst also providing habitat and movement corridors for native fauna.</i> ○ <i>Planting would not form a consistent hedge between the road and the solar farm but rather form a row of intermittent copse plantings that reflect the existing character of roadside vegetation in the area</i> • <i>Screen planting should be considered for locations surrounding buildings associated with the proposal where appropriate.</i> • <i>Strategies to ensure the effective screening is maximised early in the project life and maintained would be implemented, for example:</i> |

| Issue | Detail of issue | Proponent response |
|-------|--|--|
| | | <ul style="list-style-type: none"> ○ <i>Planting would aim to be undertaken as soon as practical in the construction process depending on the season, as it would take time for the plants to establish and become effective as a screen. Seasonal requirements for planting should also be considered.</i> ○ <i>Successional planting may be undertaken (quick growing species replaced by longer living species).</i> ● <i>The screen would be maintained for the operational life of the solar plant. Dead plants would be replaced. Pruning and weeding would be undertaken as required to maintain the screen's visual amenity and effectiveness in breaking up views.</i> <p>No changes to the proposal or mitigation measures are proposed in response to this issue.</p> |
| EMP | <p>Prepare an Emergency Management Plan (EMP). The EMP shall address emergency management procedures associated with fire risk as a consequence of the built features of the development (i.e. solar panels, electrical wiring, substations etc), including containment of any contaminants on-site. It is requested the EMP be submitted for approval prior to issue of a Construction Certificate.</p> | <p>A mitigation measure has been included in the EIS regarding the preparation of an Emergency Response Plan:</p> <ul style="list-style-type: none"> ● <i>Prior to operation of the solar plant, an Emergency Response Plan (ERP) must be prepared in consultation with the RFS and Fire & Rescue NSW. This plan must include but not be limited to:</i> <ul style="list-style-type: none"> ○ <i>Specifically addresses foreseeable on site and off site fire events and other emergency incidents.</i> ○ <i>Risk control measures would include the level of personal protective clothing required to be worn, the minimum level of respiratory protection required, decontamination procedures, minimum evacuation zone distances and a safe method of shutting down and isolating the PV system (either in its entirety or partially, as determined by risk assessment).</i> ○ <i>Outline other risk control measures that may need to be implemented in a fire emergency due to any unique hazards specific to the site.</i> ○ <i>Two copies of the ERP are stored in a prominent 'Emergency Information Cabinet' which is located in a position directly adjacent to the site's main entry point/s.</i> ● <i>Once constructed and prior to operation, the operator of the facility would contact the relevant local emergency management committee (LEMC).</i> |

| Issue | Detail of issue | Proponent response |
|--------------------------------|--|---|
| | | <p>It is proposed to update this measure based on Dubbo Regional Council's submission, as follows:</p> <ul style="list-style-type: none"> • Prior to operation of the solar plant, an Emergency Response Plan (ERP) must be prepared in consultation with the RFS and Fire & Rescue NSW. This plan must include but not be limited to: <ul style="list-style-type: none"> ○ Specifically addresses foreseeable on site and off site fire events and other emergency incidents. ○ Risk control measures would include the level of personal protective clothing required to be worn, the minimum level of respiratory protection required, decontamination procedures, minimum evacuation zone distances and a safe method of shutting down and isolating the PV system (either in its entirety or partially, as determined by risk assessment). ○ Outline other risk control measures that may need to be implemented in a fire emergency due to any unique hazards specific to the site. ○ Two copies of the ERP are stored in a prominent 'Emergency Information Cabinet' which is located in a position directly adjacent to the site's main entry point/s. • Once constructed and prior to operation, the operator of the facility would contact the relevant local emergency management committee (LEMC). • The ERP will be submitted to Dubbo Regional Council's for approval. |
| 6.9 NSW FIRE AND RESCUE | | |
| No comment | NSW Fire and Rescue provided no comments on the EIS. | No changes to the proposal or mitigation measures are proposed in response to this issue. |

7 ENVIRONMENTAL MANAGEMENT CHANGES

In consideration of the submissions received and additional assessment of the impacts, the following additional mitigation strategies are now proposed, as detailed in Section 6.

Table 7-1 New or modified mitigation measures, that now form a commitment of the proposal.

PC: Pre-Construction, C: Construction, PO: Pre-operation, O: Operation, D: Decommissioning

| Safeguards and mitigation measures | C | O | D |
|---|---|---|---|
| <ul style="list-style-type: none"> Develop a Bush Fire Management Plan (BFMP) in consultation with NSW RFS District Fire Control Centre. The BFMP will include but not be limited to: <ul style="list-style-type: none"> Specific management of activities with a risk of fire ignition (hot works, vehicle use, smoking, use of flammable materials, blasting). Document the location of hazards (Physical, Chemical and Electrical) that will impact on fire fighting operations and procedures to manage identified hazards during fire fighting operations. Describe the construction of asset protection zones and their continued maintenance. Incorporation of fire safety and response in staff and contractor induction, training, OHS procedures and Work Method Statements. Designation of a staff safety officer tasked with ensuring implementation of the plan and regular liaison with firefighting agencies. Document all firefighting resources maintained at the site with an inspection and maintenance schedule. Monitoring and management of vegetation fuel loads. 24/7 contact details including alternative telephone contact. A communications strategy incorporating use of mobile phones, radio use (type, channels and call-signs), Fire Danger Warning signs located at the entrance to the site compounds, emergency services agency contacts. Specific plans outlining: <ul style="list-style-type: none"> Site infrastructure. Fire fighting water supplies. Site access and internal roads. Any additional matters as required by the NSW RFS District Office (Plan review and update). In developing the Bush Fire Management Plan, NSW RFS would be consulted on the volume and location of water supplies, fire-fighting equipment maintained on-site, fire | C | O | D |

| Safeguards and mitigation measures | C | O | D |
|---|---|---|---|
| truck connectivity requirements, proposed APZ and access arrangements, communications, vegetation fuel levels and hazard reduction measures. | | | |
| <ul style="list-style-type: none"> An APZ of minimum 10 metres would be maintained between remnant or planted woody vegetation and solar plant infrastructure. The APZ around the perimeter of the site would incorporate a 4 metre wide gravel access track. The APZs will be in accordance with section 4.1.3 and Appendix 5 of 'Planning for Bush Fire Protection 2006' and the NSW Rural Fire Service's document 'Standards for asset protection zones'. | C | O | |
| <ul style="list-style-type: none"> A 20,000 litre water supply (tank) fitted with a 65mm storz fitting shall be suitably located along a property access road to the development within the APZ. | C | O | |
| <ul style="list-style-type: none"> The perimeter access track would comply with the requirements for Fire Trails in accordance with Section 4.1.3(3) of <i>Planning for Bush Fire Protection 2006</i>. All access and egress tracks on the site would be maintained and kept free of parked vehicles to enable rapid response for firefighting crews and to avoid entrapment of staff in the case of bush fire emergencies. Access tracks would be constructed as through roads as far as practicable. Dead end tracks would be signposted and include provision for turning firetrucks. | C | O | D |
| <ul style="list-style-type: none"> As part of the CEMP, a Soil and Water Management Plan (SWMP) (with erosion and sediment control plans) would be prepared, implemented and monitored during the Proposal, in accordance with Landcom (2004), to minimise soil (and water) impacts. These plans would include provisions to: <ul style="list-style-type: none"> Prepare SWMP in consultation with DoI – Lands and Water. Implement management responses outlined in the Soil Survey Report (McMahon, 2018). Install, monitor and maintain erosion controls. Ensure that machinery leaves the site in a clean condition to avoid tracking of sediment onto public roads which may cause risks to other road users through reduced road stability. Manage topsoil in all excavation activities, separate subsoils and topsoils and ensure that they are replaced in their natural configuration to assist revegetation. Stockpile topsoil appropriately so as to minimise weed infestation, maintain soil organic | C | O | D |

| Safeguards and mitigation measures | C | O | D |
|--|---|---|---|
| <p>matter, maintain soil structure and microbial activity.</p> <ul style="list-style-type: none"> Minimise the area of disturbance from excavation and compaction; rationalise vehicle movements and restrict the location of activities that compact and erode the soils as much as practical. Any compaction caused during construction would be treated such that revegetation would not be impaired. Manage works in consideration of heavy rainfall events; if a heavy rainfall event is predicted, the site should be stabilised, and work ceased until the wet period had passed. | | | |
| <ul style="list-style-type: none"> A Rehabilitation Plan would be prepared to ensure the array site is returned to its pre-solar Plant land capability. The plan would be developed with reference to the base line soil testing, baseline agricultural productivity (i.e crop yields and stocking rates over the last 3 years) and with input from an agronomist to ensure the site is left stabilised, under a cover crop or other suitable ground cover. The plan would reference: <ul style="list-style-type: none"> <i>Australian Soil and Land Survey Handbook (CSIRO, 2009).</i> <i>Guidelines for Surveying Soil and Land Resources (CSIRO, 2008).</i> <i>The land and soil capability assessment scheme: second approximation (OEH, 2012).</i> | | | D |
| <ul style="list-style-type: none"> A pavement review would be undertaken and bituminous surface be applied to Campbells Lane between Cobbora Road and the site access to reduce pavement degradation and improve driver safety. The bitumen surface would be in accordance with Dubbo Regional Council's rural road standard including being a minimum of 7.5 metre wide bitumen sealed two-way carriageway. | C | | |
| <ul style="list-style-type: none"> All gates will be setback a minimum of 26 metres from the property boundary to permit a B- Double vehicle to fully stand within the property boundary and not overhang onto the road reserve while any access gates are being opened or closed. | C | | |
| <ul style="list-style-type: none"> Prior to operation of the solar plant, an Emergency Response Plan (ERP) must be prepared in consultation with the RFS and Fire & Rescue NSW. This plan must include but not be limited to: <ul style="list-style-type: none"> Specifically addresses foreseeable on site and off site fire events and other emergency incidents. | | O | |

| Safeguards and mitigation measures | C | O | D |
|---|---|---|---|
| <ul style="list-style-type: none"> ○ Risk control measures would include the level of personal protective clothing required to be worn, the minimum level of respiratory protection required, decontamination procedures, minimum evacuation zone distances and a safe method of shutting down and isolating the PV system (either in its entirety or partially, as determined by risk assessment). ○ Outline other risk control measures that may need to be implemented in a fire emergency due to any unique hazards specific to the site. ○ Two copies of the ERP are stored in a prominent 'Emergency Information Cabinet' which is located in a position directly adjacent to the site's main entry point/s. ● Once constructed and prior to operation, the operator of the facility would contact the relevant local emergency management committee (LEMC). ● The ERP will be submitted to Dubbo Regional Council for approval. | | | |

Appendix A documents the full and updated environmental management commitments of the proposal.

8 CONCLUSION

This Submissions Report has been prepared by NGH Environmental on behalf of the proponent (AGL) to fulfil the requirements of Schedule 1 of the *Environmental Planning and Assessment Act 1979*.

This report makes two changes to the Proposal, as presented in the EIS:

- **Transmission line route:** Two options were described in the EIS. AGL has now decided to construct a new eastern transmission line option, not described or assessed in the EIS. The western and eastern transmission line options displayed in the EIS are no longer part of the proposal.
- **Site access:** Three options were described in the EIS. AGL has now committed that all construction site access would be via Campbells Lane. While the other two access points off Goolma Road are existing access points to the proposed site and may be utilised during operation, they would not be used during construction. This would not result in any additional impacts and is considered to have therefore been fully assessed by the EIS.

The new transmission line proposed is described and assessed in an Amendment Report (NGH Environmental 2019).

Regarding public and agency submissions:

- Four community submissions were received, two letters of support and two objections. The low number of submissions is considered to be indicative of the general support and low level of concern in the community regarding impacts of the proposal. The key issues included:
 - Agricultural land.
 - Site location
 - Visual impacts.
 - Land value impact.
 - Noise impacts.
 - Dust impacts.
 - Traffic impacts.
 - Potential health effects.
 - Decommissioning
 - Operational jobs.
- Nine government agency submissions were received. The key issues, some of which required further assessment and mitigation, included:
 - Waste management.
 - Impacts on significant native vegetation.
 - Impacts on Koala populations.
 - Bushfire management.
 - Traffic management.
 - Water demand and access arrangements.
 - Water impact management.
 - Agricultural land and Rural community impacts.
 - Landscaping.
 - Heritage impacts.

Ten mitigation measures have been added /modified and now form part of the Proposal's environmental management commitments. These address construction access and road upgrades, bushfire and emergency response management, soil and water management and rehabilitation.

The benefits of the proposed Wellington North Solar Plan would remain unchanged. The Proposal would result in a number of benefits including:

- Support Commonwealth and NSW climate change commitments.
- Generation of enough clean, renewable energy for about 114,000 average NSW homes.
- Displacement of approximately 581,000 metric tonnes of carbon dioxide – the equivalent of taking about 125,000 cars off the road.
- Enhance electricity reliability and security.
- Creation of local job opportunities.
- Injection of expenditure in the local area and spread of benefits through a local community energy offer and a local community investment program.
- Exploitation of a new land use thereby diversifying the regional economy.

In consideration of the assessment of the impacts from the Proposal contained in the EIS, and the proposed mitigation measures committed to in the revised mitigation measures (included in Appendix A of this report), it is believed that all relevant issues and concerns have been addressed and that the project should now proceed for approval by the Minister.

9 REFERENCES

- ARENA, n.d., *Establishing the social licence to operate large scale solar facilities in Australia: Insights from social research for industry*, Australian Renewable Energy Agency (ARENA).
- Armstrong, A., Ostle, N., and Whitaker, J., 2016, *Solar park microclimate and vegetation management effects on grassland carbon cycling*. Accessed online from:
<http://iopscience.iop.org/article/10.1088/1748-9326/11/7/074016>
- Barron-Gafford, G.A., Minor, R.L., Allen, N.A., Cronin, A.D., Brooks, A.E. and Pavao-Zuckerman, M.A., 2016, 'The photovoltaic heat island effect: Larger solar power plants increase local temperatures' *Scientific Reports*, vol 6, 35070. DOI: 10.1038/srep35070
- Barron-Gafford, G.A., 2018, *Statement of Evidence by Greg Barron-Gafford from the Research Group Biography, Ecosystem Science University of Arizona*. Accessed online from:
https://www.planning.vic.gov.au/data/assets/pdf_file/0024/126555/301-Expert-Witness-Statement-of-G-Barron-Gafford-PVHI-May-2018-Lemnos.pdf
- DECCW, 2009, *NSW Interim Construction Noise Guideline*, DECC, Sydney.
- DPI, 2011, *Land Use Conflict Risk Assessment Guide*, NSW Department of Primary Industries.
- DPI, 2012, *Controlled activities on waterfront land - Guidelines for riparian corridors on waterfront land*, NSW Department of Primary Industries.
- Footprint NSW Pty Ltd, 2018, *Hydrological and Hydraulic Analysis Report*. prepared for AGL, May 2018.
- Fthenakis, V., & Yu, Y., 2013, *Analysis of the potential for a heat island effect in large solar farms, Photovoltaic Specialists Conference (PVSC), 2013 IEEE 39th*.
- ICNIPR, 1998, *Guidelines for limiting exposure to time-varying electric, magnetic and electromagnetic fields (up to 300GHz)*, Health Physics, 74 (4): 494-522.
- McMahon Pty Ltd, 2018, *Soil Survey Report*. Report prepared for AGL, May 2018.
- NGH Environmental, 2018, *Wellington North Solar Plant Environmental Impact Statement*. Report prepared for AGL, September 2018.
- NGH Environmental, 2019a, *Amendment Report Wellington North Solar Plant*, prepared for AGL, March 2019.
- NGH Environmental, 2019b, *Addendum to the Aboriginal Cultural Heritage Assessment Wellington North Solar Plant*, prepared for AGL.
- NGH Environmental, 2019c, *Biodiversity Development Assessment Report*, prepared for AGL
- NGH Environmental, 2019d, *Historical Archaeological Assessment*, prepared for AGL.
- Renzo Tonin and Associates, 2019, *Wellington North Solar Plant Construction and Operation Noise and Vibration Assessment*. Report prepared for AGL, January 2019.
- Victoria State Government, 2018, *Panel Report for the Greater Shepparton Solar Energy Facility Planning permit Application 2017-162, 2017-274, 2017-301 and 2017-344*, accessed online from:
https://www.planning.vic.gov.au/data/assets/pdf_file/0025/394261/Shepparton-Solar-Farm-Permits-Call-in-Panel-Report.pdf

Yang L, Gao X, Lv F, Hui X, Ma L, and Hou X, 2017, 'Study on the local climatic effects of large photovoltaic solar farms in desert areas', *Solar Energy* 144, 244–253.

APPENDIX A REVISED MITIGATION MEASURES

The complete set of updated mitigation measures are presented below. New/modified measures from this Submission Report are in **Bold**.

PC: Pre-construction, C: Construction, PO: Pre-operation, O: Operation, D: Decommissioning

| ID. | Mitigation measure | C | O | D |
|---------------------|---|---|---|---|
| Biodiversity | | | | |
| 1 | Time works to avoid critical life cycle events: <ul style="list-style-type: none"> Hollow-bearing trees would not be removed during breeding season or hibernation period (Winter to early summer) to mitigate impacts on Southern Myotis. If clearing outside of this period cannot be achieved, pre-clearing surveys would be undertaken to ensure no impacts to fauna would occur. | C | | |
| 2 | Implement clearing protocols during tree clearing works, including pre-clearing surveys, daily surveys and staged clearing, the presence of a trained ecological or wildlife handler: <ul style="list-style-type: none"> Pre-clearing checklist. Tree clearing procedure. | C | | |
| 3 | Relocate habitat features (fallen timber, hollow logs) from within the Proposal site: <ul style="list-style-type: none"> Tree-clearing procedure including relocation of habitat features to adjacent area for habitat enhancement. | C | | |
| 4 | Clearing protocols that identify vegetation to be retained, prevent inadvertent damage and reduce soil disturbance; for example, removal of native vegetation by chainsaw, rather than heavy machinery, is preferable in situations where partial clearing is proposed: <ul style="list-style-type: none"> Approved clearing limits to be clearly delineated with temporary fencing or similar prior to construction commencing. No stockpiling or storage within dripline of any native vegetation. In areas to clear adjacent to areas to be retained, chainsaws would be used rather than heavy machinery to minimise risk of unauthorised disturbance. | C | | |

| ID. | Mitigation measure | C | O | D |
|-----|--|---|---|---|
| 5 | Light shields or daily/seasonal timing of construction and operational activities to reduce impacts of light spill: <ul style="list-style-type: none"> Avoid Night Works. Direct lights away from vegetation. | C | O | |
| 6 | Temporary fencing to protect significant environmental features such as riparian zones: <ul style="list-style-type: none"> Prior to construction commencing, exclusion fencing and signage would be installed around habitat to be retained. | C | | |
| 7 | Hygiene protocols to prevent the spread of weeds or pathogens between infected areas and uninfected areas: <ul style="list-style-type: none"> A Weed Management Procedure would be developed for the Proposal to prevent and minimise the spread of weeds. This would include: Management protocol for declared priority weeds under the Biosecurity Act 2015 during and after construction Weed hygiene protocol in relation to plant, machinery, and fill Any occurrences of pathogens such as Myrtle Rust and Phytophthora would be monitored, treated, and reported. The weed management procedure would be incorporated into the Biodiversity Management Plan. | C | O | |
| 8 | <ul style="list-style-type: none"> Staff training and site briefing to communicate environmental features to be protected and measures to be implemented: Site induction. Toolbox talks. | C | | |
| 9 | Preparation of a vegetation management plan to regulate activity in vegetation and habitat adjacent to the proposed development: | C | | |

| ID. | Mitigation measure | C | O | D |
|----------------------------|---|--------|---|---|
| | <ul style="list-style-type: none"> Preparation of a Biodiversity Management Plan that would include protocols for: <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. | | | |
| 10 | <p>Making provision for the ecological restoration, rehabilitation and/or ongoing maintenance of retained native vegetation habitat on or adjacent to the Proposal site:</p> <ul style="list-style-type: none"> Retained native vegetation would be considered as an offset site. | | O | |
| 11 | <p>Staff training and site briefing to communicate impacts of traffic strikes on native fauna:</p> <ul style="list-style-type: none"> Awareness training during site inductions regarding enforcing site speed limits. Site speed limits to be enforced. | C | O | |
| Aboriginal heritage | | | | |
| 1 | The development must avoid the two possible Scarred Tree (Wellington Nth ST1 and Wellington Nth ST2) as per the proposed development footprint in this report. A minimum 10m buffer around the trees should be in place to protect the tree canopy and root system. | Design | | |
| 2 | If complete avoidance of the nine artefacts scatters and 30 isolated find sites recorded within the Proposal site is not practicable, the artefacts within the development footprint must be salvaged prior to the proposed work commencing and moved to a safe area within the property that would not be subject to any ground disturbance. | C | | |
| 3 | The collection and relocation of the artefacts should be undertaken by an archaeologist with representatives of the registered Aboriginal parties and be consistent with Requirement 26 of the <i>Code of practice for Archaeological Investigation of Aboriginal Objects in New South Wales</i> . A new site card/s would need to be completed once the artefacts are moved to record their new location on the AHIMS database. The Aboriginal community requests that a Cultural Smoking Ceremony take place to cleanse any artefacts salvaged and the reburial location. | C | | |

| ID. | Mitigation measure | C | O | D |
|----------------------------|--|---|---|---|
| 4 | A minimum 5m buffer should be observed around all artefact scatters and isolated find sites including those outside the development footprint. | C | O | D |
| 5 | Wellington North Solar Plant Pty Limited should prepare a Cultural Heritage Management Plan (CHMP) to address the potential for finding additional Aboriginal artefacts during the construction of the Solar Plant and management of known sites and artefacts. The Plan should include the unexpected finds procedure to deal with construction activity. Preparation of the CHMP should be undertaken in consultation with the registered Aboriginal parties. | C | | |
| 6 | In the unlikely event that human remains are discovered during the construction, all work must cease in the immediate vicinity. OEH, the local police and the registered Aboriginal parties should be notified. Further assessment would be undertaken to determine if the remains were Aboriginal or non-Aboriginal. | C | | |
| 7 | Further archaeological assessment would be required if the Proposal activity extends beyond the area of the current investigation as detailed in this report and the Amendment Report (NGH,2019) and that noted in the initial ACHA for the Wellington Solar Farm. This would include consultation with the registered Aboriginal parties and may include further field survey. | C | O | D |
| Noise and vibration | | | | |
| 1 | Implement noise control measures such as those suggested in Australian Standard 2436-2010 “Guide to Noise Control on Construction, Demolition and Maintenance Sites”, to reduce predicted construction noise levels. | C | | |
| 2 | <p>A Noise Management Plan would be developed as part of the CEMP and would specifically target R1, R2, R4 and R6 in order to achieve compliance. The plan would include, but not be limited to:</p> <ul style="list-style-type: none"> • Use less noisy plant and equipment where feasible and reasonable. • Plant and equipment to be properly maintained. • Provide special attention to the use and maintenance of ‘noise control’ or ‘silencing’ kits fitted to machines to ensure they perform as intended. • Strategically position plant on site to reduce the emission of noise to the surrounding neighbourhood and to site personnel. • Avoid any unnecessary noise when carrying out manual operations and when operating plant. • Any equipment not in use for extended periods during construction work should be switched off. • Complaints procedure deal with noise complaints that may arise from construction activities. Each complaint would need to be investigated and appropriate noise amelioration measures | C | | |

| ID. | Mitigation measure | C | O | D |
|---|--|------------------|---|---|
| | <p>put in place to mitigate future occurrences, where the noise in question is in excess of allowable limits.</p> <ul style="list-style-type: none"> Establish good relations with people living in the vicinity of the site at the beginning of proposal and maintain. Keep people informed, take complaints seriously, deal with complaints expeditiously. The community liaison member of staff should be adequately experienced. | | | |
| Visual amenity and landscape character | | | | |
| 1 | <p>Regarding landscaping to fragment / soften the view of infrastructure:</p> <ul style="list-style-type: none"> An intermittent band of screen planting would be located: <ul style="list-style-type: none"> Between the property boundary and the solar arrays, in locations along Goolma Road and Cobbora Road where there is no existing vegetation and where the arrays are immediately adjacent to the boundary. Along the Campbells Lane boundary to mitigate impacts on properties on the northern side of Campbells Lane (identified in Appendix H). To ensure that the screen planting integrates into the existing landscape character: <ul style="list-style-type: none"> Bands of planting would be a mix of locally native tree and shrub species to ensure a naturalistic effect whilst also providing habitat and movement corridors for native fauna. Planting would not form a consistent hedge between the road and the solar farm but rather form a row of intermittent copse plantings that reflect the existing character of roadside vegetation in the area Screen planting should be considered for locations surrounding buildings associated with the proposal where appropriate. Strategies to ensure the effective screening is maximised early in the project life and maintained would be implemented, for example: <ul style="list-style-type: none"> Planting would aim to be undertaken as soon as practical in the construction process depending on the season, as it would take time for the plants to establish and become effective as a screen. Seasonal requirements for planting should also be considered. Successional planting may be undertaken (quick growing species replaced by longer living species). <p>The screen would be maintained for the operational life of the solar plant. Dead plants would be replaced. Pruning and weeding would be undertaken as required to maintain the screen's visual amenity and effectiveness in breaking up views.</p> | Pre-construction | | |

| ID. | Mitigation measure | C | O | D |
|---|--|--------------|---|---|
| 2 | <ul style="list-style-type: none"> Where feasible, co-location of powerlines would be undertaken to minimise the look of additional power poles. If additional poles are required, these would match existing pole design as much as practicable. Materials and colours utilised in the construction of site sheds, battery storage and associated infrastructure would be considered to ensure that Visual Impacts are minimised. In general materials should be non-reflective and should be painted in neutral colours that are sensitive to the surrounding landscape. | Design stage | | |
| 3 | <ul style="list-style-type: none"> Night lighting would be minimised to the maximum extent practicable (i.e. manually operated safety lighting at main component locations). | C | O | |
| Soils, Agriculture and land capability | | | | |
| 1 | <p>As part of the CEMP, a Soil and Water Management Plan (SWMP) (with erosion and sediment control plans) would be prepared, implemented and monitored during the Proposal, in accordance with Landcom (2004), to minimise soil (and water) impacts. These plans would include provisions to:</p> <ul style="list-style-type: none"> Prepare SWMP in consultation with DoI – Lands and Water. Implement management responses outlined in the Soil Survey Report (McMahon, 2018). Install, monitor and maintain erosion controls. Ensure that machinery leaves the site in a clean condition to avoid tracking of sediment onto public roads which may cause risks to other road users through reduced road stability. Manage topsoil in all excavation activities, separate subsoils and topsoils and ensure that they are replaced in their natural configuration to assist revegetation. Stockpile topsoil appropriately so as to minimise weed infestation, maintain soil organic matter, maintain soil structure and microbial activity. Minimise the area of disturbance from excavation and compaction; rationalise vehicle movements and restrict the location of activities that compact and erode the soils as much as practical. Any compaction caused during construction would be treated such that revegetation would not be impaired. Manage works in consideration of heavy rainfall events; if a heavy rainfall event is predicted, the site should be stabilised, and work ceased until the wet period had passed. | C | O | D |
| 2 | <p>A Groundcover Management Plan would be developed in consultation with an agronomist and taking account of soil survey results to ensure perennial grass cover is established across the site as soon as practicable after construction and maintained throughout the operation phase. The plan would cover:</p> <ul style="list-style-type: none"> Soil restoration and preparation requirements. | C | O | |

| ID. | Mitigation measure | C | O | D |
|-----|--|--------|---|---|
| | <ul style="list-style-type: none"> • Species election. • Soil preparation. • Establishment techniques. • Maintenance requirements. • Perennial groundcover targets, indicators, condition monitoring, reporting and evaluation arrangements – i.e. Live grass cover would be maintained at or above 70% at all times to protect soils, landscape function and water quality. Any grazing stock would be removed from the site when cover falls below this level. Grass cover would be monitored on a fortnightly basis using an accepted methodology. • Contingency measures to respond to declining soil or groundcover condition. • Identification of baseline conditions for rehabilitation following decommissioning. | | | |
| 3 | The array would be designed to allow sufficient space between panels to establish and maintain ground cover beneath the panels and facilitate weed control. | Design | | |
| 4 | <p>A Spill and Contamination Response Plan would be developed as part of the overall Emergency Response Plan to prevent contaminants affecting adjacent surrounding environments. The plan would include measures to:</p> <ul style="list-style-type: none"> • Respond to the discovery of existing contaminants at the site (e.g. pesticide containers or asbestos), including stop work protocols and remediation and disposal requirements. • Requirement to notify the EPA for incidents that cause material harm to the environment (refer s147-153 of the POEO Act). • Manage the storage of any potential contaminants onsite. • Mitigate the effects of soil contamination by fuels or other chemicals (including emergency response and the EPA notification procedures and remediation. • Ensure that machinery arrives on site in a clean, washed condition, free of fluid leaks. • Prevent contaminants affecting adjacent pastures, dams, water courses and native vegetation. • Monitor and maintain spill equipment. • Induct and train all site staff. | C | O | D |
| 5 | A protocol would be developed in relation to discovering buried contaminants within the Proposal site (e.g. pesticide containers). It would include stop work, remediation and disposal requirements. | C | O | D |
| 6 | A Rehabilitation Plan would be prepared to ensure the array site is returned to its pre-solar Plant land capability. The plan would be developed with reference to the base line soil testing, baseline agricultural | | | D |

| ID. | Mitigation measure | C | O | D |
|--------------------------|--|--------|---|---|
| | productivity (i.e crop yields and stocking rates over the last 3 years) and with input from an agronomist to ensure the site is left stabilised, under a cover crop or other suitable ground cover. The plan would reference: <ul style="list-style-type: none"> • <i>Australian Soil and Land Survey Handbook</i> (CSIRO, 2009). • <i>Guidelines for Surveying Soil and Land Resources</i> (CSIRO, 2008). • <i>The land and soil capability assessment scheme: second approximation</i> (OEH, 2012). | | | |
| 7 | Manage pests and weeds during construction and operation. Where practicable integrate weed and pest management with adjoining land owners. | C | O | |
| 8 | Consultation with local community, to minimise impact of the Proposal on adjacent agricultural activities and access. | C | O | D |
| Land use | | | | |
| 1 | Consultation would be undertaken with TransGrid regarding connection to the substation and design of electricity transmission infrastructure. | C | O | D |
| 2 | Consultation with Proposal site mineral titleholders regarding the Proposal and potential impacts. | C | O | D |
| Historic heritage | | | | |
| 1 | Should an item of historic heritage be identified, the Heritage Division (OEH) would be contacted prior to further work being carried out in the vicinity. | C | O | D |
| 2 | The Noonee Nyrang Homestead would not be altered whilst in use as an Office and Maintenance building for the solar plant. | C | O | D |
| 3 | The existing outbuildings and stone shed around the Noonee Nyrang Homestead would be maintained and not altered. | C | O | D |
| Flooding | | | | |
| 1 | The design of buildings, equipment foundations and footings for electrical componentry and panel mounts would be designed to avoid the 1% AEP flood level to minimise impacts from potential flooding including: <ul style="list-style-type: none"> • The solar array mounting piers are designed to withstand the forces of floodwater (including any potential debris loading) up to the 1% AEP flood event, giving regard to the depth and velocity of floodwaters; • The mounting height of the solar module frames would be designed such that the lower edge of the module is clear of the predicted 1% AEP flood level. • All electrical infrastructure, including inverters, would be located above the 1% AEP flood level. | Design | | |

| ID. | Mitigation measure | C | O | D |
|--------------------------------------|---|---------------------|---|---|
| | <ul style="list-style-type: none"> Where electrical cabling is required to be constructed below the 1% AEP flood level it would be capable of continuous submergence in water. The proposed perimeter security fencing would be constructed in a manner which does not adversely affect the flow of floodwater and should be designed to withstand the forces of floodwater, or collapse in a controlled manner to prevent impediment to floodwater. | | | |
| 2 | <p>An Emergency Response Plan incorporating a Flood Response Plan would be prepared prior to construction covering all phases of the Proposal. The plan would:</p> <ul style="list-style-type: none"> Detail who would be responsible for monitoring the flood threat and how this is to be done. Detail specific response measures to ensure site safety and environmental protection. Outline a process for removing any necessary equipment and materials offsite and out of flood risk areas (i.e. rotate array modules to provide maximum clearance of the predicted flood level). Consider site access in the event that some tracks become flooded. Establish an evacuation point. Define communications protocols with emergency services agencies. | C | O | D |
| Traffic, transport and safety | | | | |
| 1 | <p>The following intersections treatments would be undertaken in consultation with Dubbo Regional Council:</p> <ul style="list-style-type: none"> The intersection of Cobbora Road / Campbells Lane would be upgraded to provide a BAR/BAL turn type treatment including shoulder widening on Cobbora Road (major road); The proposed site access on Campbells Lane would be designed to provide BAR/BAL turn type treatment; and Intersection treatments would be designed to accommodate articulated vehicles of 19 m in length. All gates will be setback a minimum of 26 metres from the property boundary to permit a B- Double vehicle to fully stand within the property boundary and not overhang onto the road reserve while any access gates are being opened or closed. | Design stage | | |
| 2 | <p>A Haulage Plan would be developed with input from the roads authority, 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). Consideration of cumulative traffic loads due to other local developments. Traffic controls (signage and speed restrictions etc.). | PC | | D |

| ID. | Mitigation measure | C | O | D |
|-----|--|----|---|---|
| 3 | <p>Upon determining the haulage route(s) for construction vehicles associated with the Proposal, and prior to construction, undertake a Road Dilapidation Report. The report would:</p> <ul style="list-style-type: none"> Assess the current condition of the road(s) Describe mechanisms to restore any damage that may result due to traffic and transport related to the construction of the Proposal. Be submitted to the relevant road authority for review prior to the commencement of haulage. | PC | | |
| 4 | <p>A pavement review would be undertaken and bituminous surface be applied to Campbells Lane between Cobbora Road and the site access to reduce pavement degradation and improve driver safety. The bitumen surface would be in accordance with Dubbo Regional Council's rural road standard including being a minimum of 7.5 metre wide bitumen sealed two-way carriageway.</p> | C | | |
| 5 | <p>A Traffic Management Plan would be developed as part of the CEMP and DEMP, in consultation with the Dubbo Regional Council and Roads and Maritime Services (RMS). The plan would include, but not be limited to:</p> <ul style="list-style-type: none"> The designated routes of construction traffic to the site. Carpooling/shuttle bus arrangements to minimise vehicle numbers during construction and ensure that warrants provided in the Austroads Guide to Road Design Part 4A: Unsignalised and Signalised Intersections that apply to major road turn treatments are maintained within the limits of the proposed BAR / BAL turn treatments. Identify specific road hazards associated with the area including not limited to fog, wet weather, frost and wildlife. Pedestrian management - Site access is to be restricted to authorised personnel only and existing employees on site. Pedestrian access to and around the site is to be maintained at all times. Within the site pedestrian travel paths are to be maintained to key areas such as building entrances and be free from trip hazards. Scheduling of deliveries. Community consultation regarding traffic impacts for nearby residents and school bus operators. Consideration of impacts to the railway. Traffic control plans (speed limits, signage, etc.). Procedure to monitor traffic impacts and adapt controls (where required) to reduce the impacts. | PC | | D |

| ID. | Mitigation measure | C | O | D |
|------------------------------------|--|---|---|---|
| | <ul style="list-style-type: none"> Providing a contact phone number to enable any issues or concerns to be rapidly identified and addressed through appropriate procedures. | | | |
| Water quality and water use | | | | |
| 1 | Design waterway crossings and services crossing in accordance with the publications: <ul style="list-style-type: none"> <i>Why do fish need to cross the road? Fish Passage Requirements for Waterway Crossings</i> (Fairfull & Witheridge, 2003). <i>Policy and Guidelines for Fish Friendly Waterway Crossings</i> (NSW DPI, 2003). <i>Guidelines for Watercourse Crossings on Waterfront Land</i> (NSW DPI, 2012). <i>Guidelines for Laying Pipes and Cable in Watercourses on Waterfront Land</i> (NSW DPI, 2012). | C | O | D |
| 2 | All fuels, chemicals, and liquids would be stored at least 40m from any waterways or drainage lines, not on sloping land and would be stored in an impervious bunded area. | C | O | D |
| 3 | The refuelling of plant and maintenance would be undertaken in impervious bunded areas on hardstand areas only. | C | O | D |
| 4 | All potential pollutants stored on-site would be stored in accordance with HAZMAT requirements and bunded. | C | O | D |
| 5 | Roads and other maintenance access tracks would incorporate appropriate water quality treatment measures such as vegetated swales to minimise the opportunity of dirty water leaving the site or entering the waterways. | C | | D |
| 6 | A WAL would be obtained, should onsite ground water sources be used. | C | | |
| Social and economic | | | | |
| 1 | Liaison with local industry representatives to maximise the use of local contractors, manufacturing facilities, materials. | C | | |
| 2 | Liaison with local representatives regarding accommodation options for staff, to minimise adverse impacts on local services. | C | | D |
| 3 | Liaison with local tourism industry representatives to manage potential timing conflicts with local events. | C | | D |
| 4 | The Community Consultation Plan would be implemented 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 Proposal and proposal benefits. | C | | D |

| ID. | Mitigation measure | C | O | D |
|-----------------|---|---|---|---|
| | <ul style="list-style-type: none"> • Protocols to inform relevant stakeholders of potential impacts (haulage, noise, air quality etc.). • Protocols to respond to any complaints received. | | | |
| Bushfire | | | | |
| 1 | Dangerous or hazardous materials would be stored and handled in accordance with AS1940-2004: <i>The storage and handling of flammable and combustible liquids</i> . | C | O | D |
| 2 | <p>Develop a Bush Fire Management Plan (BFMP) in consultation with NSW RFS District Fire Control Centre. The BFMP will include but not be limited to:</p> <ul style="list-style-type: none"> • Specific management of activities with a risk of fire ignition (hot works, vehicle use, smoking, use of flammable materials, blasting) • Document the location of hazards (Physical, Chemical and Electrical) that will impact on fire fighting operations and procedures to manage identified hazards during fire fighting operations. • Describe the construction of asset protection zones and their continued maintenance. • Incorporation of fire safety and response in staff and contractor induction, training, OHS procedures and Work Method Statements. • Designation of a staff safety officer tasked with ensuring implementation of the plan and regular liaison with firefighting agencies. • Document all firefighting resources maintained at the site with an inspection and maintenance schedule. • Monitoring and management of vegetation fuel loads. • 24/7 contact details including alternative telephone contact. • A communications strategy incorporating use of mobile phones, radio use (type, channels and call-signs), Fire Danger Warning signs located at the entrance to the site compounds, emergency services agency contacts. • Specific plans outlining: <ul style="list-style-type: none"> ○ Site infrastructure. ○ Fire fighting water supplies. ○ Site access and internal roads. ○ Any additional matters as required by the NSW RFS District Office (Plan review and update). | C | O | D |

| ID. | Mitigation measure | C | O | D |
|-----|--|---|---|---|
| | In developing the Bush Fire Management Plan, NSW RFS would be consulted on the volume and location of water supplies, fire-fighting equipment maintained on-site, fire truck connectivity requirements, proposed APZ and access arrangements, communications, vegetation fuel levels and hazard reduction measures. | | | |
| 3 | An APZ of minimum 10 metres would be maintained between remnant or planted woody vegetation and solar plant infrastructure. The APZ around the perimeter of the site would incorporate a 4 metre wide gravel access track. The APZs will be in accordance with section 4.1.3 and Appendix 5 of 'Planning for Bush Fire Protection 2006' and the NSW Rural Fire Service's document 'Standards for asset protection zones'. Average grass height within the APZ would be maintained at or below 5 centimetres on average throughout the October-March fire season. Average grass height outside the APZ, including beneath the solar array, would be maintained at or below 15 centimetres throughout the fire season. | C | O | |
| 4 | The overhead powerlines at the site would be managed by maintaining appropriate vegetation clearance limits to minimise potential ignition risks, in accordance with the ISSC 3 Guideline for Managing Vegetation Near Power Lines. | | O | |
| 5 | Appropriate fire-fighting equipment would be held on site to respond to any fires that may occur at the site during construction. This equipment would include fire extinguishers, a 1000 litre water cart retained on site on a precautionary basis, particularly during any blasting and welding operations. Equipment lists would be detailed in Work Method Statements. | C | | |
| 6 | The NSW RFS and Fire and Rescue would be provided with a contact point for the solar plant, during construction and operation. | C | O | |
| 7 | Following commissioning of the solar plant, the local RFS and Fire and Rescue brigades would be invited to an information and orientation day covering access, infrastructure, firefighting resources on-site, fire control strategies and risks/hazards at the site. | | O | |
| 8 | The perimeter access track would comply with the requirements for Fire Trails in accordance with Section 4.1.3(3) of Planning for Bush Fire Protection 2006. All access and egress tracks on the site would be maintained and kept free of parked vehicles to enable rapid response for firefighting crews and to avoid entrapment of staff in the case of bush fire emergencies. Access tracks would be constructed as through roads as far as practicable. Dead end tracks would be signposted and include provision for turning fire trucks. | C | O | D |
| 9 | A Hot Works Permit system would be applied to ensure that adequate safety measures are in place. Fire extinguishers would be present during all hot works. Where practicable hot works would be carried out in specific safe areas (such as the Construction Compound temporary workshop areas). | C | O | D |

| ID. | Mitigation measure | C | O | D |
|--------------------------------|--|---|---|---|
| 10 | Machinery capable of causing an ignition would not be used during bushfire danger weather, including Total Fire Ban days. | C | O | D |
| 11 | <p>Prior to operation of the solar plant, an Emergency Response Plan (ERP) must be prepared in consultation with the RFS and Fire & Rescue NSW. This plan must include but not be limited to:</p> <ul style="list-style-type: none"> Specifically addresses foreseeable on site and off site fire events and other emergency incidents. Risk control measures would include the level of personal protective clothing required to be worn, the minimum level of respiratory protection required, decontamination procedures, minimum evacuation zone distances and a safe method of shutting down and isolating the PV system (either in its entirety or partially, as determined by risk assessment). Outline other risk control measures that may need to be implemented in a fire emergency due to any unique hazards specific to the site. Two copies of the ERP are stored in a prominent 'Emergency Information Cabinet' which is located in a position directly adjacent to the site's main entry point/s. <p>Once constructed and prior to operation, the operator of the facility would contact the relevant local emergency management committee (LEMC).</p> <p>The ERP will be submitted to Dubbo Regional Council for approval.</p> | | O | |
| 12 | A 20,000 litre water supply (tank) fitted with a 65mm storz fitting shall be suitably located along a property access road to the development within the APZ. | C | O | |
| Electromagnetic fields | | | | |
| 1 | All electrical equipment would be designed in accordance with relevant codes and industry best practice standards in Australia. | C | | |
| 2 | All design and engineering would be undertaken by qualified and competent person/s with the support of specialists as required. | C | | |
| 3 | Design of electrical infrastructure would minimise EMFs. | C | | |
| Air quality and climate | | | | |
| 1 | Dust generation by vehicles accessing the site and earthworks at the site would be suppressed using water applications or other means as required. | C | | D |
| 2 | Vehicle loads of material which may create dust would be covered while using the public road system. | C | | D |

| ID. | Mitigation measure | C | O | D |
|---|---|---|---|---|
| 3 | All vehicles and machinery used at the site would be in good condition, fitted with appropriate emission controls and comply with the requirements of the POEO Act, relevant Australian standards and manufacturer's operating recommendations. Plant would be operated efficiently and turned off when not in use. | C | O | D |
| 4 | Fires and material burning is prohibited on the Proposal site. | C | O | D |
| Resources use and waste generation | | | | |
| 1 | <p>A Waste Management Plan (WMP) would be developed to minimise wastes. It would include but not be limited to:</p> <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 identify that sullage would be disposed of (i.e., pump out to local sewage treatment plant). • Tracking of all waste leaving the site. • Disposal of waste at facilities permitted to accept the waste. • Requirements for hauling waste (such as covered loads). | C | O | D |
| 2 | Septic system is installed and operated according to the Dubbo Regional Council regulations. | C | O | |

APPENDIX B ABORIGINAL CULTURAL HERITAGE ASSESSMENT REPORT

Draft report, in advance of RAP comments.

APPENDIX C BIODIVERSITY DEVELOPMENT ASSESSMENT REPORT

APPENDIX D HISTORICAL ARCHAEOLOGY ASSESSMENT

APPENDIX E DRUMMOND WEST CORRESPONDENCE