



Submissions Report

WELLINGTON SOLAR FARM



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ACRONYMS AND ABBREVIATIONS

ACHAR	Aboriginal Cultural Heritage Assessment Report
BOS	Biodiversity Offset Strategy (in BAR)
CEEC	Critically Endangered Ecological Community
CHMP	Cultural Heritage Management Plan
DPE	Department of Planning and Environment
EEC	Endangered ecological community – as defined under relevant law applying to the proposal
EIS	Environmental Impact Statement
EL	Exploration Licence
EP&A Act	<i>Environmental Planning and Assessment Act 1979 (NSW)</i>
ERP	Emergency Response Plan
FBA	Framework for Biodiversity Assessment
FFMP	Flora and Fauna Management Plan
kL	kilolitre
km	kilometres
kV	kilovolts
LGA	Local Government Area
LGC	Largescale Generation Certificates
m	Metres
ML	Megalitres
MW	Megawatt
NSW	New South Wales
OEH	(NSW) Office of Environment and Heritage, formerly Department of Environment, Climate Change and Water
PV	Photovoltaic
RAP	Registered Aboriginal Parties
RET	Renewable Energy Target
RMS	Roads and Maritime Services
SEARs	Secretary's Environmental Assessment Requirements
SEPP	State Environmental Planning Policy (NSW)
SSD	State Significant Development, as defined by section 89C of the EP&A Act (<i>c.f.</i>)

1 INTRODUCTION

1.1 BACKGROUND

The Wellington Solar Farm (SF) proposal site is located approximately 2km north east of Wellington, in western central NSW, within the Dubbo Regional Local Government Area (LGA). The Wellington Solar Farm proposal includes the construction, operation and decommissioning of a photovoltaic (PV) solar farm and associated infrastructure that would produce up to 174 Megawatts (MW) of electricity.

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 on behalf of the proponent and was submitted to NSW Department of Planning and Environment (DPE). The EIS was placed on public exhibition from 14 December 2017 to 28 January 2018. During this period, submissions were sought from the local community, government agencies, interested parties and other stakeholders.

The Wellington Solar Farm proposal remains generally as per the detailed description provided in Section 3 of the EIS (NGH Environmental 2017). The proposal location is provided in Figure 1-1.

1.2 PURPOSE OF REPORT

NGH Environmental has prepared this Submissions Report on behalf of the proponent to fulfil the requirements of Section 75H of the *Environmental Planning and Assessment Act 1979*. The purpose of the Submissions Report is to:

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

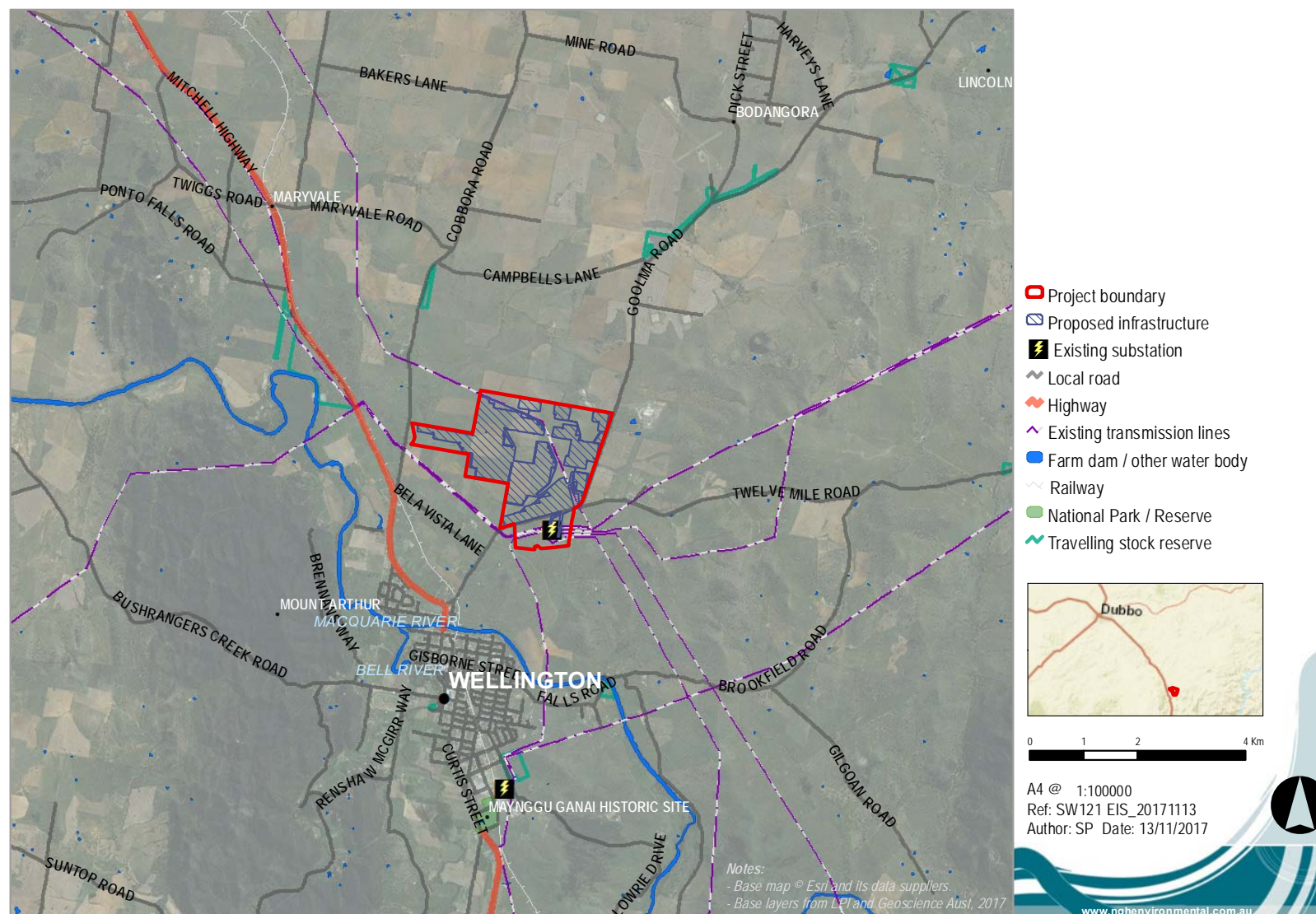


Figure 1-1 Proposal location, as presented in the EIS.

2 OBJECTIVES, BENEFITS AND JUSTIFICATION FOR THE PROJECT

2.1 PROJECT OBJECTIVES

The objectives of the Wellington SF proposal remain as described in the EIS, and include:

- Select a site which is suitable for commercial scale solar electricity generation, in terms of solar yield, connection to the national electricity grid, and environmental and social constraints.
- Develop a profitable commercial scale solar electricity generation project and potentially an Energy Storage Facility (ESF).
- Assist the NSW and Commonwealth Governments to meet Australia's Renewable Energy Targets (RET) and other energy and carbon mitigation goals.
- Provide a clean and renewable energy source to assist in reducing greenhouse gas (GHG) emissions.
- Obtain a social license to operate from the local community.
- Provide local and regional employment opportunities and other social benefits during construction and operation.
- Identify opportunities to avoid and minimise environmental impacts in the construction and operation of the project.

2.2 PROJECT BENEFITS

The benefits of the proposed Wellington SF remain as detailed in the EIS. The project would provide the following benefits, specific to Australia's environmental commitments:

- Climate change mitigation commitments to the Paris Agreement and RET Scheme
- State goals and policies including NSW Climate Change Policy Framework (State of NSW and Office of Environment and Heritage, 2016), New South Wales Renewable Energy Action Plan (NSW Government, 2013) and NSW 2021: A plan to Make NSW Number One (NSW Government, 2011).

The project would also provide significant social and economic benefits including:

- Employment: Large scale renewable projects create long term employment opportunities, which are rare in many rural communities. The project would create:
 - Approximately 200 construction jobs during peak construction as well as indirect supply chain jobs.
 - Up to 3 full time jobs during the operation and maintenance phase.
- Electricity prices:
 - Renewables increase competition in the wholesale energy market, which helps to lower prices.
 - Renewable energy generation such as PV solar operates with no fuel costs and helps to reduce overall wholesale prices of electricity (Commonwealth of Australia, 2017).

- Increasing large scale renewable energy generation under the RET puts downward pressure on electricity prices (Australia Institute, 2015).
- Solar will beat the cost of existing, fully depreciated and un-refurbished coal plants by 2032 (BNEF, 2017).
- Local economic uplift:
 - Embedded electricity generation, supplied into the regional grid closer to consumption centres.
 - Injection of expenditure in the local area.
 - Development of a new land use thereby diversifying the regional economy.

2.3 PROJECT JUSTIFICATION

The NSW Government's support for renewable energy has successfully bridged the commercialisation gap for large-scale solar and created a credible path to sustainable deployment in NSW without ongoing financial support. The successful delivery of regional projects, including Australia's flagship solar plants at Nyngan and Broken Hill in NSW, has provided significant economic and environmental benefits, in addition to creating jobs and developing skills in a growing industry, supporting small businesses, and providing clean energy to NSW. The lessons learnt from these projects continue to drive down costs and increase the commercial competitiveness of NSW solar energy. Given the unprecedented cost reduction achieved in large-scale solar in recent years and the current positive investment environment, there is no doubt that large-scale solar will contribute significantly to the state's renewable energy goals.

As NSW looks to continue this positive momentum and achieve its renewable energy objectives of accelerating advanced energy, it is imperative that NSW supports steady and repeated quality project deployment in NSW every year. Steady project deployment is the single strongest driver of solar electricity price cost reductions. It gives developers, construction companies and financiers the confidence to invest in NSW projects. This investment provides exposure to local civil, mechanical and electrical subcontractor construction labour force, electricity regulators and network service providers, planning authorities, and heavy industries that participate in the solar value chain which is crucial to optimise solar project costs in NSW.

The proposed Wellington SF strikes the ideal balance between a competitive cost of energy and certainty of delivery. The unique combination of a quality project and experienced project participants will ensure the state's goals are met by lowering costs today, demonstrating a clear path to future cost reductions, and accelerating the NSW solar industry to economic and commercial sustainability.

3 THE PROPOSAL

3.1 PROPOSAL CHANGES SINCE EIS EXHIBITION

The Wellington SF proposal remains generally as per the detailed description provided in Section 3 of the EIS (NGH Environmental 2017). The following additional layout refinements have been undertaken in response to submissions received during the exhibition period:

1. The project footprint has been reduced to avoid impacts on a Critically Endangered Ecological Community (CEEC). The overall reduction on this community (which is now entirely avoided) is 2.0751 ha. The overall reduction on native vegetation is 9.83 ha.
2. The alternative substation location south of the ESF has now been deleted. The substation would be located within the fence line of the existing substation.
3. The 33kV feeders from the solar farm will run underground along the boundary of the solar farm, under Goolma Road and into the substation, reducing overhead transmission line visual impacts.
4. An additional option has been included to construct a purpose-built Operations and Maintenance building near the onsite residence. This option is required in the event that anticipated upgrades to the historic structure are not cost effective or in keeping with the heritage restrictions on this structure.

In the preparation of this response to submissions, the following additional assessments have been included:

- Traffic counts were undertaken to inform the assessment of traffic impacts on safety and the road network.
- Construction water resource use to assess the project's impacts on local water security and licensing requirements.
- Flood mapping to assess potential impacts on localised flooding and erosion from the installation of PV infrastructure.
- Soil surveys to assess the impacts on land capability, erosion risk, and to establish baseline soil quality that will inform rehabilitation practices.

Additional mitigation measures, in response to the submissions received, are provided in Section 7. The complete set of updated mitigation measures are provided in Appendix A.

In addition to these mitigation measures, a further change is proposed to allow greater flexibility of visual mitigation. The Visual Impact Assessment (VIA) provided the following design commitments with regard to onsite infrastructure in section 6.2.1, which were adopted as commitments of the EIS:

- *The materials and colour of onsite infrastructure will, where practical, be non-reflective and in keeping with the materials and colouring of existing infrastructure or of a colour that will blend in with the landscape. Where Practical:*
 - *Proposed new buildings will be non-reflective and in eucalypt green, beige or muted brown.*
 - *Pole mounts will be non-reflective*
 - *Security fencing posts and wire would be non-reflective; green or black rather than grey would reduce the industrial character of the fence.*

The intention of this condition is to reduce the industrial character of the built structures by selecting materials and colours specific to the existing landscape of the site. The materials should, where practical, ensure low contrast between the infrastructure and the landscape, similar to that depicted in Figure 3-1. It is noted that green and black materials have the potential to look more incompatible with the landscape and result in a sharper contrast on this site than grey in some locations.

It is proposed that the mitigation measure be rephrased to allow greater flexibility in meeting the commitment, as appropriate to the site. The less prescriptive modified measure is therefore:

- ***The materials and colour of onsite infrastructure will, where practical, be non-reflective and in keeping with the materials and colouring of existing infrastructure or of a colour that will blend in with the landscape. Where Practical:***
 - ***Proposed new buildings will be non-reflective and colouring will be in keeping with the existing landscape.***
 - ***Pole mounts will be non-reflective***
 - ***Security fencing posts and wire would be non-reflective; colouring would be chosen to reduce the industrial character of the fence and fit the existing landscape.***



Figure 3-1 Landscape character and infrastructure similar to proposal site

The updated indicative layout and constraints map is provided in Figure 3-2.

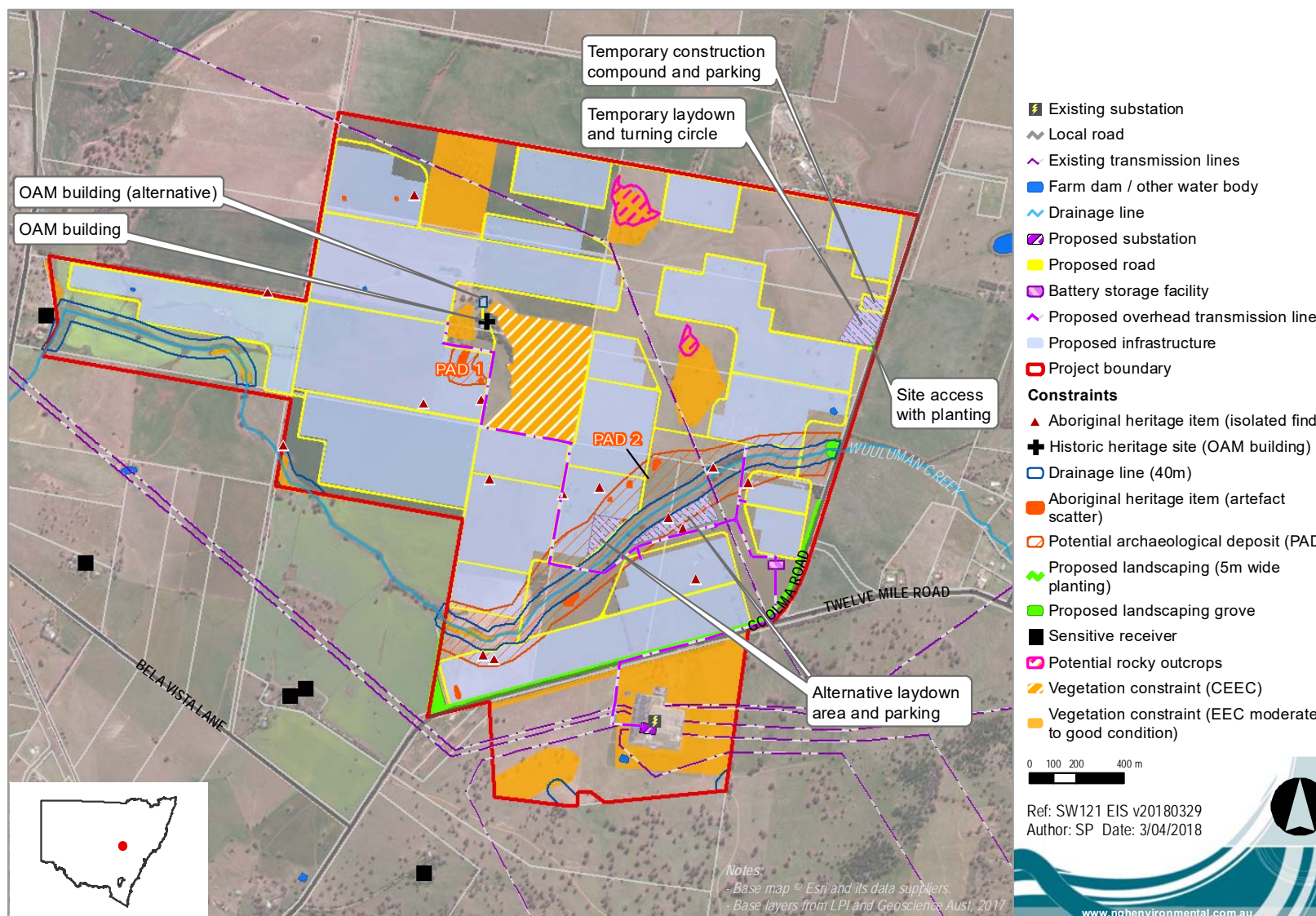


Figure 3-2 Updated constraints mapping, reflecting new layout and additional assessments presented in this Submissions Report.

4 CONSIDERATION OF SUBMISSIONS

4.1 EXHIBITION AND LOCATION

The Wellington SF EIS, SSD 8573, was on public exhibition from 14 December 2017 until the 28 January 2018. An extended exhibition period of 6 weeks applied due to the holiday period. 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
- Department of Planning and Environment, 320 Pitt Street, Sydney
- Nature Conservation Council, 14/338 Pitt Street, Sydney

Electronic copies of the EIS were also available online at the Major Projects section of the DPE website.

A letter from the proponent was sent to local residents within 2km of the site (dated the 8 December 2017), providing notification of the EIS submission and informed local residents that the EIS would be on exhibition via the DPE website within the coming month. DPE also mailed all the adjoining residents directly to notify them of the EIS submission and exhibition period and placed advertisements in the local and regional papers announcing the exhibition period.

Both Miner Title Holders EL6178 and EL8505 as well as Dubbo Regional Council have been notified of the EIS exhibition period on 8 December 2017.

4.2 SUBMISSIONS RECEIVED

DPE received a total of 8 submissions during the exhibition period. One submission was received from an individual member of the public and seven 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 (community submission) and 5 (agency submissions). The full submissions can be found on the Major Projects website:

http://majorprojects.planning.nsw.gov.au/index.pl?action=view_job&job_id=8183

Table 4-1 Responses received

Category	Number of responses received
Individual members of the public	1
Government agency submissions	7
1. NSW Department of Planning and Environment (DPE) 2. NSW Department of Industry (DPI): Resource and Energy Assessments 3. Fire and Rescue NSW 4. NSW DPE, Division of Resources and Geoscience 5. NSW Office of Environment and Heritage (OEH) 6. NSW Transport, Roads and Maritime Services (RMS) 7. Dubbo Regional Council	
Total	8

4.3 ADDITIONAL CONSULTATION

4.3.1 General community

The proponent has undertaken consultation with the local community in developing the proposal, in line with the 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.). Consultation activities were informed by a Community Consultation Plan.

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

- Sent a letter dated 8 December 2017 to all residents within 2km of the site notifying them of the EIS submission and informed that the EIS would be on exhibition via the DPE website within the coming month.
- The proponent also arranged one on one meetings with a number of nearby residents during the EIS exhibition period and have continued to engage with the local community regarding the project.
 - 7 December 2017, followed up with adjacent neighbour regarding request for a photomontage. Left messages to discuss the photomontages and follow up on any queries they might have. No further contact received.
 - 3 January 2018, contacted Wellington Business Chamber Chairman Barry Jeffrey. Proposed attending a meeting of the Wellington Business Chamber to inform local business about the project and answer any questions they might have. Mr. Jeffrey advised that the Wellington Business Chamber is currently not meeting. No further contact received.
 - 10, 11 and 23 January 2018, followed up with a neighbouring landowner who has been confused by the DPE notification letter regarding the exhibition period. It had identified the property as adjacent however, there are several properties between the neighbour and the Wellington SF. This neighbour is very supportive of the project.

4.3.2 Aboriginal community representatives

While the EIS was on 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.

In response to OEH agency comments, a change to the mitigation strategy has been included. The updated measure reflects both OEH and RAP concerns and is now included in the final report. The final ACHAR has been forwarded to the RAPs.

4.3.3 Government agencies

The proponent has continued consultation with the Dubbo Regional Council and is committed to working with the Council to ensure the success of the project. The proponent undertook the following activities:

- 8 December 2017, notified Dubbo Regional Council about the EIS going on public exhibition and informed them about how to make a submission. Continued contact during December 2017 – January 2018.
- 19 December 2017, discussed council road closure with Dubbo Regional Council and organised a meeting in January 2018.
- 15 and 16 January 2018, confirmed meeting for the following week.
- 23 January 2018, met with Dubbo Regional Council to discuss the council road closure process and the arrangements for a Community Benefit Fund.
- 7 February 2018, discussed the Council Quarry's with Dubbo Regional Council. Dubbo Regional Council confirmed that the proposed solar farm will not negatively impact their quarries.
- 14 and 16 February 2018, discussions have been held with Dubbo Regional Council in regards to the road closure and proposed Community Benefit Fund.
- 7 March 2018, met with Dubbo Regional Council and discussed proposed Community Benefit Fund in detail. Dubbo Regional Council is currently considering First Solar's proposal. Further discussions with counsellors will be held.
- 16, 19 and 26 February 2018, followed up on status of the road closure and proposed Community Benefit Fund. Dubbo Regional Council confirmed the road closure process is undergoing internal assessment. Council will get back to First Solar in early April in regards to the proposed Community Benefit Fund.

4.3.4 Mineral lease holders and quarry operations

Two exploration licenses (Table 4-2) and three quarries (Table 4-3) relevant to the proposed SF site were identified.

Table 4-2 Mineral Titles relevant to the proposal site

Mineral Licence number	Title/	Owner	Grant date	Expiry date	Mineral type
EL 8505		Drummond West Pty Ltd	06.02.2017	06.02.2020	Group 1 (metallic minerals)
EL 6178		Modeling Resources Pty Ltd	19.01.2014	18.01.2018	Group 1 (metallic minerals)

Table 4-3 Quarries relevant to the proposal site

Quarry	Owner	Operational	Class	Material type
Montfiores Pit (Namia Quarry)	Dubbo Regional Council	Remediation	Unprocessed construction materials - major	Sandstone and Siltstone
Brookefield Pit	Private	No	Unprocessed construction materials - minor	Gravel
Maryvale Pit	Boral	Yes	Unprocessed construction materials - major	Coarse aggregate, river gravel and sand

Mineral titles holder consultation

On 2 August 2017, the proponent sent a letter to both mineral license holders informing of the proposed development. Details of location, size and timeline were provided along with options to provide input.

Phone calls and follow up emails were sent on 9 and 11 August to further discuss the proposal, timelines and potential effects on mineral exploration activities.

Drummond West Pty. Ltd indicated the exploration in the proposal area is low priority and unlikely to yield ore bores. Modeling Resources Pty. Ltd. indicated that the project would not affect their exploration other than bringing forward non-invasive exploration activities. The proponent project manager committed to providing project updates and notifying of intention to lodge the Development Application (DA).

Follow up emails summarising the discussions were sent to the licence holders on 14 and 15 August. Response emails were received from the license holders on 15 and 23 August acknowledging consultation and confirming interest in working collaboratively and being informed on project milestones.

On 20 October 2017, the proponent requested map boundaries of the site owned by Modeling Resources Pty. Ltd. In order to understand potential impacts of the proposed solar farm.

Both lease holders were informed by email and letter on 8 December 2017 of submission of the DA and EIS to the DPE. While Modeling Resources reserved the right to object, no submissions were received during the public exhibition period. Appendix J – L provides email chains of all above correspondence. For privacy reasons these correspondences have been provided to the Department of Planning and Environment directly.

Quarry operator consultation

On 26 September 2017, the proponent made contact with Boral regarding the Maryvale Pit. A follow up email was sent on 29 September 2017 with details of the location, size and timeline of the proposed solar project as requested by Boral. An email was received on 10 October 2017 stating Boral had no objections to the proposal.

Confirmation that the Montefiores Pit (Namia Quarry) is not related to Exploration Licence EL 6178 was received from Modeling Resources.

Dubbo Regional Council was contacted for further information regarding operation of the Montefiores Pit (Namia Quarry) and the Brookevale Pit. On 7 February 2018, confirmation was received that the proposed solar farm will not negatively impact either of these quarries.

Forwarding of correspondence

DPE acknowledged receipt of the evidence of correspondence provided by the proponent on 19 February 2018 and agreed to forward the correspondence directly to Division Resources and Geoscience for review (E. Parry, Environmental Assessment Officer, DPE). The proponent was advised by DPE at this time that the email correspondence did not need to be included in the response to submissions.

5 PROPONENTS RESPONSE TO COMMUNITY SUBMISSIONS

Only one community submission was received, which raised the issue of energy security and prices. Such issues are managed at the policy level by DP&E, other government agencies and power generation regulators. the proponent has however provided a response, in order to clarify the role of renewable energy in relation to electricity prices and security.

Note, the community member did not raise specific comments regarding the design, location, construction and operation of the Project. Nor were comments raised regarding impacts to the environment and local social-economic issues.

Issue	Detail of issue	Proponent Response
5.1 SOLAR FARMS AND ENERGY PRICING		
Electricity prices and security	One respondent was concerned about the adverse impact of intermittently producing energy projects on NSW electricity prices and electricity security for NSW.	<p>Current total energy supply in NSW is 18,738MW, of this 236MW are supplied by solar and 610MW supplied by wind. This represents 1.26% and 3.25% respectively of the total power supply. The amount of power supplied by water (hydropower) is 4,644MW (24.7% of total supply). The remainder (70.79%) of the power is being supplied by coal, diesel, natural gas, coal waste, bagasse, black liquor, and landfill gas. (DP&E, Resource and Energy division. Website visited January 2018).</p> <p>Based on such proportions of supply, the presence of solar and wind in the power mix does not threaten the current security of power supply.</p> <p>Solar and wind energy generation is predictable and the responsibility of ensuring reliable supply of power to the end user, i.e. power distribution, falls on the grid operator. Managing load distribution with a mix of energy sources is complex, however, factors that minimise the complexity include:</p> <ul style="list-style-type: none"> • The law of large numbers: renewable energy becomes more predictable as the number of renewable generators connected to the grid increases thanks to the effect of geographic diversity. • The power of prediction: solar (and wind) output can be modelled and forecast with reasonable accuracy. • Incentivizing energy production at the right time and place: existing competitive electricity markets already have prices that vary over the day and over a region depending on the local level of electricity supply and demand. This incentivises the right mix of renewable energy sources in the market.

Issue	Detail of issue	Proponent Response
		<p>Furthermore, major research organisations such as the CSIRO and Australian National University, believe that one hundred percent renewable energy future is technically achievable, with storage systems (battery and solar thermal) and smart grids expected to play a major role in allowing very high renewable energy penetration.</p> <p>Regardless of whether renewable energy projects are constructed in response to the Federal Governments RET, any adverse impact to electricity prices as a result of this policy will occur as liable entities (electricity users) are required to either procure sufficient Largescale Generation Certificates (LGC) to achieve the RET or pay a penalty rate for any shortfall. Construction of renewable energy generators realises LGC's at a cost lower than the legislated penalty.</p> <p>The network operators and the Australian Energy Market Operator (AEMO) are responsible for ensuring the project complies with the National Electricity Rules and network stability requirements. The project has completed a full set of static and dynamic network modelling of the proposed connection point which have been submitted to TransGrid and AEMO for review and acceptance.</p>

6 PROPONENTS RESPONSE TO GOVERNMENT AGENCY SUBMISSIONS

This section considers all issues raised in the government agency submissions. In summary, the following key issues were raised:

- Land use and capability
- Water use, water quality and flooding
- Fire and safety risks
- Aboriginal heritage impact management
- Biodiversity impacts and offsets
- Traffic volumes and management, road upgrades
- Socio-economic and community impacts, zoning, change of building use
- Legislative requirements

For each submission, the issues are summarised in the left-hand columns and the Proponents 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 DEPARTMENT OF PLANNING AND ENVIRONMENT (DPE)		
Revised disturbance areas	Describe the revised layout, noting the CEEC will be avoided. Confirm which substation option will be used and revise the project boundary to reflect the final option.	<p>The updated indicative layout and constraints map is provided in Figure 3-2. The changes are:</p> <ul style="list-style-type: none"> • The project footprint has been reduced to reduce impacts on a CEEC. The overall reduction on this community (which is now entirely avoided) is 2.075 ha. The overall reduction on native vegetation impacts is 9.83 ha. • The alternative substation location south of the Energy Storage Facility (ESF) has now been deleted. The substation would be located in the western part of the existing substation within the substation boundary fence. • The 33kV feeders from the solar farm will run underground along the boundary of the solar farm, under Goolma Road and into the substation, reducing the visual impact of additional overhead power lines. • An additional option has been included to construct a purpose-built Operations and Maintenance building near the onsite residence. This option is required in the event that upgrades anticipated for the historic structure are not cost effective or in keeping with the heritage restrictions on this structure.

Issue	Detail of issue	Proponent response
Agricultural land	Further assessment required, considering Council response and draft Wellington Council Rural Land Use Study.	The Dubbo Council submission is provided in Section 6.7 and is addressed in full.
	Provide the completed soil survey report as an attachment and include a summary of the results in the main document. Ensure that the report addresses the relevant matters raised by the Department of Industry Crown Lands and Water Division.	<p>The Department of Industry: Resource And Energy Assessments submission is provided in Section 6.2 and is addressed in full. Appendix D.1 provides the geotechnical report and soil survey and D.2 provides further analysis by DM McMahon Pty Ltd to provide clearer information on the quality and fertility of the soil and potential impacts of the project on future land use, particularly considering the site has been mapped as Biophysical Strategic Agricultural Land.</p> <p>Specific to BSAL mapping, DM McMahon, notes:</p> <p><i>...The [BSAL] dataset comes with an important note for users, that 'mapping was done at a regional scale, not at a property boundary level' therefore, a site-specific assessment is required to gauge the development against the BSAL mapping... This assessment of the subject site categorises the land as Class 3 in the western lower slopes and plains and Class 4 on the eastern higher slopes and crests by reference to the Land and Soil Capability Classes, OEH 2012. Class 3 is defined as having moderate agricultural limitations with careful management required while Class 4 has moderate to high agricultural limitations with restricted management options.</i></p> <p>Therefore, while mapped as BSAL, the results confirm the site has restricted management options and substantial limitations regarding high levels of agricultural use.</p>
Mineral resources	Provide evidence of consultation with affected mineral exploration lease holders and respond to Division of Resources and Geoscience submission.	<p>The Division of Resources and Geoscience submission is provided in Section 6.4 and is addressed in full.</p> <p>A summary of the consultation with mineral lease holders is provided in Section 4.3.4.</p> <p>DPE acknowledged receipt of the evidence of correspondence provided by the proponent on 19 February 2018 and agreed to forward the correspondence directly to Division Resources and Geoscience for review (E. Parry, Environmental Assessment Officer, DPE). The proponent was advised by DPE at this time that the email correspondence did not need to be included in the response to submissions.</p>
Maps	Provide updated constraints map to reflect the revised disturbance area and any changes to the project boundary.	The updated indicative layout and constraints map is provided in Figure 3-2.

Issue	Detail of issue	Proponent response
Traffic	Provide additional information to address the Roads and Maritime Services (RMS) submission.	The RMS submission is provided in Section 6.6 and has been addressed in consultation with the RMS.
Consultation	Consult directly with Council and adequately address their concerns.	Consultation activities with Dubbo Regional Council are summarised in Section 4.3.3; on 8 December 2017, notified Dubbo Regional Council about the EIS going on public exhibition and informed them about how to make a submission. Continued contact during December 2017 – March 2018.

6.2 NSW DEPARTMENT OF INDUSTRY: RESOURCE AND ENERGY ASSESSMENTS

Construction water demands	Revise construction water demands (potable and non-potable) and confirm security of proposed sources and relevant licensing requirements / agreements.	<p>Non-potable construction water requirements are estimated to be 9000ML annually which the Department noted to be excessive for this type of project. The non-potable demands were proposed to be largely accessed from farm dams located on the property and where necessary Council stand pipes or other sources.</p> <p>Further investigation into water requirements and sources has reduced the estimated non-potable construction water requirements to 10ML annually. This water is now proposed to be sourced from a combination of:</p> <ul style="list-style-type: none"> • Onsite dams. • Existing bores and wells onsite (license required). • Dubbo Regional Council water filling station. <p>Three dams occur within the proposal site. The proponent has established with the landowners that the two dams to the west of the site are only filled after large rainfall events (from overland flow). The dam at the eastern boundary of the site holds about 250kL (0.25ML). Using the DPI Office of Water Maximum Harvestable Right Calculator with the property size at 493ha and eastern dam location as the parameters, the maximum harvestable right for the site is approximately 32.05ML per annum.</p> <p>There are also a number of existing wells and bores in operation onsite. There is a well at the existing dwelling. The water from the well provides about 4000 L/hr (approximately 35ML per annum) which is currently pumped to tanks on the property. There is a licence to drill a bore, but it has not been used.</p> <p>A second bore is being pumped into two tanks in front of the old abattoir which hold about 13kL each. The water is used for stock and domestic and has no allocation attached. The water has been tested and is of good quality. To use this water, a Water Allocation License (WAL) would need to be obtained. The number of Aquifer WAL's available for the Lachlan Fold Belt MDB Groundwater source as of 20 February 2018 was 1014 (http://www.water.nsw.gov.au/water-licensing/registers). The water available under these Aquifer WAL's was</p>
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Issue	Detail of issue	Proponent response
		<p>66835.7ML for the 2016/17 financial year. Of this volume 3744.8ML was used or about 5.6% of the water available. The water required for construction represents 0.01% of the volume available and 0.02% of the water not used but available (94%) for that financial year. The impact of drawing the 10ML would be negligible because ample remaining water is available in the system based on previous year's figures.</p> <p>If a WAL cannot be obtained or if onsite supply is deficient, the proponent would purchase water from the Council allocation. It is noted that the Council stand pipe is no longer available. 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. This is the option that will be used, if onsite sources are not sufficient. 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 18805ML with 9 WALs. The water required for the project (10ML) is 0.05% of the local water utility available this past year. For the 2016/2017 period, only 11512.1ML 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 project's construction water requirement will result with a temporary and short-term impact on the local water resource. The main construction water use will be road wetting for dust control and concrete preparation and curbing. Demand will vary based on seasonality.</p> <p>The following additional clarifying mitigation measures are proposed:</p> <p><i>In consultation with DPI: Water:</i></p> <ul style="list-style-type: none"> • <i>The maximum harvestable right for surface water of approximately 32.05ML would not be exceeded.</i> • <i>A WAL would be obtained, should onsite ground water sources be used.</i> • <i>The proponent would purchase water from Council if onsite requirements are not sufficient.</i>
Flood impacts	<p>Flood assessment to confirm impacts of all infrastructure installation on the flood characteristics and resulting erosion potential on and off site. Maps depicting hydraulic characteristics pre and post development are requested.</p> <p>Specific comments included:</p>	<p>A Hydrological and Hydraulic Assessment was carried out by Footprint Pty Ltd in order to define flood behaviour, guide design and assess the potential impact of the proposal infrastructure on existing flood behaviour. A review of background information including site survey, topographic maps and proposed development plans was undertaken along with hydrologic calculations to determine peak flows and hydraulic modelling to determine the depth and extent of flooding over the each of the three watercourses.</p> <p>The updated assessment is provided in Appendix E and provides the following additional clarifications:</p> <ul style="list-style-type: none"> • There will not be a significant impact on flood behaviour within the floodplain as a result of the infrastructure installation proposed. Flood levels and depths are predicted to remain relatively unchanged.

Issue	Detail of issue	Proponent response
	<ul style="list-style-type: none"> The flood assessment has not assessed the impact on flood characteristics and erosion potential of installing all infrastructure, including roads. No representation of changes to the spatial extent or the velocity and erosion potential. Maps indicating pre and post development hydraulic characteristics would assist in addressing this. The proponent indicates that the perimeter fencing will be constructed so that it does not adversely affect the flow of floodwater and withstand floodwater or collapse in a controlled manner. The ability to achieve this will be critical to ensure the predicted impacts are not exceeded. 	<ul style="list-style-type: none"> The proposed works and infrastructure installation are not anticipated to adversely increase the velocity in any of the watercourses or their associated overbanks therefore ensuring the stability of their bed and banks and minimising erosion potential. The proposed works and infrastructure installation over Tributary 1 (northern most overland flow path, refer Appendix E) are not predicted to result in an adverse impact on the hydraulic function of that watercourse. <p>Maps depicting pre and post development flood levels, depths and velocities at 1% AEP are now included in the Hydrological Hydraulic Assessment, Appendix E. They show that there is predicted to be a very marginal increase in the extent of flooding in the 1% AEP.</p> <p>It is proposed to include three additional mitigation measures recommended by Footprint Pty Ltd in their Hydrological and Hydraulic Assessment now be included:</p> <ul style="list-style-type: none"> The proposed network of access roads is to be constructed from gravel, and within the floodplain itself are to be constructed at the existing surface level so as not to result in adverse impact on flood behaviour. Any proposed crossings of existing watercourses should, where possible, consist of fords constructed flush with the bed of the watercourse to minimise any hydraulic impact. Detailed design of fencing to ensure no adverse impact on the flow of floodwater and ability to withstand floodwater, this design may include removable sections or collapsible panels.
Waterfront land	Map waterfront land with buffers consistent with the Guidelines for Controlled	Under section 89J of the EP&A Act, SSD developments do not require a controlled activity approval (other than an aquifer interference approval) under section 91 of the <i>Water Management Act 2000</i> .

Issue	Detail of issue	Proponent response
	<p>Activities on Waterfront Land (DPI 2012).</p> <p>Reference is made in the EIS to maintaining a 40m buffer from waterways, however it appears from the available plans that roads and other infrastructure (including PV modules and cables) are proposed within the 40m buffer.</p>	<p>A 40m¹ buffer has been applied to the centreline of waterways onsite, triggering the intention of the proponent to apply the Guidelines for Controlled Activities on Waterfront Land (DPI 2012) in these areas, as best practice measures. In these areas, the design and construction roads, cables and culverts that cannot avoid the waterway would protect waterfront land by referencing the construction standards and rehabilitation methods set out for:</p> <ul style="list-style-type: none"> • In-stream works • Laying pipes and cables in watercourses • Outlet structures • Riparian corridors • Vegetation Management Plans • Watercourse crossings <p>No solar array infrastructure or buildings would be located in these areas.</p> <p>Overland flow areas also occur onsite. These areas do not meet the definition of waterfront land under the Water Management Act. The WM Act defines waterfront land as the bed of any river, lake or estuary and any land within 40 metres of the river banks, lake shore or estuary mean high water mark. Rivers include:</p> <ul style="list-style-type: none"> (a) any watercourse, whether perennial or intermittent and whether comprising a natural channel or a natural channel artificially improved, and (b) any tributary, branch or other watercourse into or from which a watercourse referred to in paragraph (a) flows, and (c) anything declared by the regulations to be a river, <p>Alternatively, overland flow water means water (including floodwater, rainfall run-off and urban stormwater) that is flowing over or lying on the ground as a result of:</p> <ul style="list-style-type: none"> (a) rain or any other kinds of precipitation, or (b) rising to the surface from underground, or (c) any other process or action of a kind prescribed by the regulations.

¹ It is acknowledged that the correct buffer is 40m from the river banks. This level of detail is not yet available for the site. The mapping does not affect the commitment of the proponent to ensure any impacts on waterways are managed in accordance with the Guidelines for Controlled Activities on Waterfront Land (DPI 2012).

Issue	Detail of issue	Proponent response
		<p>Specifically, an overland flow path runs from the centre of the development site and joins with Wuuluman Creek on the western edge of the site. This flow path is a dry gully, flowing only after rain events. The landowner has confirmed that water is only present after heavy rainfall. Vegetation in these gullies is degraded and dominated by exotic grasses that have been grazed by stock. It does not provide a riparian or aquatic habitat, being usually dry. In terms of hydraulic function, the overland flow path is not predicted to be adversely impacted by the proposed works (refer to Appendix E). In these areas, array infrastructure is proposed.</p> <p>The proponent already commits to the following mitigation measure:</p> <ul style="list-style-type: none"> • Design waterway crossings and services crossing in accordance with the publications: <ul style="list-style-type: none"> ○ Why do fish need to cross the road? Fish Passage Requirements for Waterway Crossings (Fairfull & Witheridge, 2003); and ○ Policy and Guidelines for Fish Friendly Waterway Crossings (NSW DPI, 2003). ○ Guidelines for Watercourse Crossings on Waterfront Land (NSW DPI, 2012) ○ Guidelines for Laying Pipes and Cable in Watercourses on Waterfront Land (NSW DPI, 2012) <p>A minor change to an existing mitigation measure is proposed:</p> <p><i>A riparian buffer zone of 40m along Wuuluman Creek would be clearly delineated prior to works commencing. Works would be avoided within the riparian buffer zone.</i></p>
Land assessment	Land assessment required to include a review of existing information on soil and land capability, soil landscape reviews and other available information.	<p>Soil landscape and limitations</p> <p>One soil landscape occurs at the proposal site: Bodangora (bz). Its limitations are provided as:</p> <ul style="list-style-type: none"> • High erosion hazard under cultivation and low cover levels • Moderate fertility • Friable surface soils • Moderate to high shrink-swell potential in subsoils • Aggregated clays may leak in earthworks <p>The potential impacts have been assessed with reference to the NSW land and soil capability assessment scheme, Primefact 1063 Infrastructure proposals on rural land, Biophysical Strategic Agricultural Land and Important Agricultural Land identification processes, Land Use Conflict Risk Assessment Guide.</p> <p>The proposal site is located on land mapped in capability Class 3, under the Land and Soil Capability Mapping for NSW (OEH, 2017). Class 3 land (high capability land) has moderate limitations and is assumed to be capable of sustaining</p>

Issue	Detail of issue	Proponent response
		<p>high-impact land uses, such as cropping. However, careful management of limitations is required for cropping and intensive grazing to avoid land and environmental degradation. The proposal site is also mapped as Biophysical Strategic Agricultural Land indicating it is capable of sustaining high levels of productivity. Neither of these soil mapping classifications are extensively ground-truthed. Onsite inspection of the proposal site and consultation with the land owner regarding the historic use of the site indicates that sustained intensive use / high productivity (such as annual cropping) cannot be supported onsite due to soil limitations.</p> <p>With specific reference to BSAL mapping, DM McMahon soil analysis, provided in Appendix D.2, notes:</p> <p><i>...The [BSAL] dataset comes with an important note for users, that ‘mapping was done at a regional scale, not at a property boundary level’ therefore, a site-specific assessment is required to gauge the development against the BSAL mapping... This assessment of the subject site categorises the land as Class 3 in the western lower slopes and plains and Class 4 on the eastern higher slopes and crests by reference to the Land and Soil Capability Classes, OEH 2012. Class 3 is defined as having moderate agricultural limitations with careful management required while Class 4 has moderate to high agricultural limitations with restricted management options.</i></p> <p>Therefore, while mapped as BSAL, the results confirm the site has restricted management options and substantial limitations regarding high levels of agricultural use.</p> <p>Soil surveys and analysis</p> <p>Soil surveys have now been undertaken by Douglas Partners (January 2018) to assess the subsurface soil and groundwater conditions across the site. The results were further analysed by DM McMahon Pty Ltd to verify soil and land capability. Results are provided in Appendix D.2. Appendix D.1 provides the geotechnical report and soil survey and D.2 provides further analysis by DM McMahon Pty Ltd to provide clearer information on the quality and fertility of the soil and potential impacts of the project on future land use. Extracts of this work are provided below:</p> <p><i>A free soil survey was conducted with 34 investigation points across the 492ha property. Classification of the soils was carried out as per The Australian Soil Classification (Isbell, 1996). Density of the investigation points was at a ‘Moderately High (Detailed)’ intensity level by reference to the Guidelines for Surveying Soil and Land Resources (2008) which was deemed appropriate for satisfying the objectives for detailed project planning. The soils encountered were typical of the locale, generally falling into reconnaissance survey classes. Free groundwater was not encountered to the investigated depths.</i></p> <p><i>24 representative soil samples were obtained and analysed. Topsoil and subsoil samples were tested for pH, Electrical Conductivity (EC), chloride, sulphate, available phosphorous, Phosphorous Buffer Index (PBI) and Emerson class number.</i></p>

Issue	Detail of issue	Proponent response
		<p><i>The site lies within the mapping unit MO3 from the Digital Atlas of Australian Soils (CSIRO, 1991). The map unit MO3 is described as: "MO3" "Gently undulating plains with occasional higher stony ridges: a complex array of soils is present but loamy nodular mottled yellow earths (Gn2.61), with lesser (Gn2.64) and (Gn2.74), are probably dominant. Closely associated are important areas of loamy or, less commonly, sandy red earths (Gn2.11, Gn2.14); these usually occur on well-defined stream levees. Smaller areas of friable earths (Gn3.71) and (Gn3.91) and deep loamy duplex soils (Dy3.81) also occur. The higher stony ridges have shallow gravelly duplex soils (Dy3.41) and shallow stony loams (Um2.12) and (Um4.1). Data are fairly limited.</i></p> <p><i>Soils onsite include Euchrozems , Non-calcic Brown Soils , Terra Rossa Soils. Topsoil pH ranged from 5.5 to 7.2 and can be classed as being 'strongly to slightly acid'. Electrical conductivity (EC) ranged from 91 – 340µS/cm and are classed as non-saline. Cation Exchange Capacity (CEC) ranges from 11 to 26cmol(+)/kg. CEC of the soils is rated from low (6-12) to moderate (12-25). Exchangeable Sodium Percentage (ESP) were all <% which is given a sodicity rating of 'non-sodic'. Colwell P is generally high (>25mg/kg). Phosphorus Buffering Index (PBI) ranged from 350 to 1,600 and is classed from 'high' to 'very high'. The Ca:Mg ratio determined for topsoils returned results ranging from 2.9 to 5.1, indicating that there is low potential for dispersion and swelling of topsoils upon wetting.</i></p> <p><i>Subsoil pH ranged from 6.7 to 9.1 and can be classed as being neutral to strongly alkaline. EC ranged from 15 - 500µS/cm and are rated as non-saline. Determination of aggregate stability indicated that the majority of soils have slight to negligible dispersibility.</i></p> <p>Erosion control</p> <p><i>The risk of erosion on site due to construction activities is considered low due to the very low relief and generally low salinity and sodicity of topsoils and subsoils. Excavation of subsoils should be limited where possible, and excavated subsoils should be stockpiled and contained to avoid potential dispersion and sediment transfer. Ground cover around the structures should be maintained where possible. Maintenance of ground cover will also aid in the prevention of topsoil losses from wind erosion.</i></p> <p>Potential Impacts on Salinity, Groundwater Resources and Hydrology</p> <p><i>Current operational procedures include dryland farming and grazing. Associated water features drainage plains and lines and five groundwater bores. At the time of investigation, the pasture condition appeared to be poor with minimal ground cover which would increase the flux of rainwater into the subsoil through recharge. Given the soils on site are classified as 'non-sodic' and low salinity the risk of salt build up in discharge areas is thought to be low risk. However, changing direction of surface waters and any run-on should be avoided as local changes in the water regime are likely to mobilise any salts stores, however low, in the soil.</i></p>

Issue	Detail of issue	Proponent response
		<p><i>Deep rooted vegetation should be maintained where present and established where not and ground clearing should be minimised.</i></p> <p>Management of construction and decommissioning impacts</p> <p><i>The soil characteristics and management responses to the soil types found on site are tabulated in Table 6 of the Appendix D.2. This data will ensure environmental management planning is site specific, minimises erosion and provides for similar agricultural or other land use capacity after the decommissioning of the solar farm.</i></p> <p><i>... based on the findings of this report from the site-specific assessment, the proposal will have limited impact on agricultural resources, and the land upon decommissioning of the solar farm will be suitable for alternative land uses such as forestry and mining in addition to agriculture.</i></p>
	Explanation of slope and land characteristics	<p>The topography of the proposal site is flat to gently undulating and sits at an elevation of between 300 and 415 metres above sea level (ASL). The site includes the following topographic features:</p> <ul style="list-style-type: none"> • A hill is located in the north-eastern part of the site (rising to 415 metres ASL). • The Wuuluman Creek, and two tributaries of the creek, occur on the site and generally drain water from the site in an east to west direction. <p>The solar farm does not require extensive land forming or grading works for establishing for construction tracks or array infrastructure. The inverter footings only require a small area of excavation. The generally low relief areas in which infrastructure is located are not considered a constraint to construction and does not need to be modified.</p>
	Soil survey that includes soil information that can be used to provide baseline data for final post project outcomes (i.e. construction limitations and final rehabilitation outcomes).	<p>The proponent commits to restore the capability of the site to its current level, with reference to soil testing and relevant land resource guidelines, as follows:</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 farm land capability. The plan would be developed with reference to 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>

Issue	Detail of issue	Proponent response
		<p>The base line soil survey has now been undertaken to inform this commitment, as summarised above and included in full in Appendix D2.</p>
	<p>Assessment of impact on agricultural land, displacement of agricultural enterprises, changes to agricultural enterprise pursuits to complement the solar farm operation.</p>	<p>Development of a large portion of the 493 ha property would result once the panels are installed. The transmission easement is mostly situated adjacent to existing transmission lines and easement associated with the Wellington Substation, so no significant change in land use would result. The loss of the 316 ha development footprint 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. It would only result in a loss of 0.03% of BSAL within the Dubbo Regional LGA. As stated above, while mapped as BSAL, onsite inspection and consultation with the land owner regarding the historic use of the site indicate that sustained intensive use / high productivity (such as annual cropping) cannot be supported onsite due to soil limitations. Therefore, the contribution that the site makes to regional agricultural income is not expected to be significant.</p> <p>It is noted that no impacts on adjacent properties would occur and that the project would be highly reversible, returning the land to its current land capability post decommissioning, or some alternative land use.</p> <p>It is anticipated the solar farm will employ three full time staff and will draw on local suppliers for the following services which we believe will providing an equal contribution to community as the lands current use:</p> <ul style="list-style-type: none"> • Groundcover management • Weed management • Fire safety compliance • HVAC servicing • Pest and vermin control • Cleaning services • Equipment rental • Vehicle and equipment servicing <p>The proponent also anticipates using sheep to control the grass cover within the plant and will implement this through a grazing licence with a local farmer, essentially allowing the land to be actively farmed and to continue to produce an agricultural revenue stream throughout the project life.</p> <p>With specific reference to BSAL mapping, agricultural and future land uses, the following extract is drawn from the DM McMahon soil analysis, provided in Appendix D.2:</p> <p><i>The site is located within a Biophysical Strategic Agricultural Land (BSAL) area, NSW DPE 2016. The dataset comes with an important note for users, that 'mapping was done at a regional scale, not at a property boundary level' therefore, a site-specific assessment is required to gauge the development against the BSAL</i></p>

Issue	Detail of issue	Proponent response
		<p><i>mapping. A further investigation of the metadata which provides criteria for the BSAL mapping demonstrates that the site is over two classes being 'grazing - modified pasture' in the east and 'dryland cropping' in the west, OEH 2018. This is in conflict with the criteria for the BSAL mapping which suggests that land capability classes I or II under the Land and Soil Capability Mapping of NSW is BSAL land. Of note the incorrect classes have been applied to the BSAL mapping with the old land classes I and II from the NSW Agriculture 2012 system being incorrectly applied to the Land and Soil Capability Classes of 1 and 2, OEH 2012. The classification systems are inverse which confuses the relevance of the BSAL dataset for use in land classification.</i></p> <p><i>This assessment of the subject site categorises the land as Class 3 in the western lower slopes and plains and Class 4 on the eastern higher slopes and crests by reference to the Land and Soil Capability Classes, OEH 2012. Class 3 is defined as having moderate agricultural limitations with careful management required while Class 4 has moderate to high agricultural limitations with restricted management options.</i></p> <p><i>The proposal is to install solar panels for a short to medium term period with a view to restore the land to the original land use setting upon decommissioning. The proposal is to build limited infrastructure in the form of boundary roads and substations while the solar panels will be installed on pile driven posts or on small pad footings. Upon decommissioning of the solar farm, the pile driven posts or small pad footings will be removed causing minimal soil and landscape disturbance and the land will be fit for purpose for continued primary industry use dependent upon the soil management responses outlined as follows being implemented. During operation of the solar farm, ground cover will be maintained and managed with the option for slashing, crash grazing, reseeding and amelioration with fertiliser and/or lime dependant upon the results of the monitoring and reporting carried out. Therefore, based on the findings of this report from the site-specific assessment, the proposal will have limited impact on agricultural resources, and the land upon decommissioning of the solar farm will be suitable for alternative land uses such as forestry and mining in addition to agriculture.</i></p>
	<p>Commitment to development of broad principles that include land quality and use outcomes to develop a Rehabilitation and Decommissioning / Closure Management Plans.</p>	<p>The Proponent commits to restore the capability of the site to its current level, with reference to soil testing and relevant land resource guidelines:</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 farm land capability. The plan would be developed with reference to 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 (OEH 2012)</i>

Issue	Detail of issue	Proponent response
		<p>As above, the soil testing has been completed sufficient to inform this commitment. Management recommendations have been provided specific to construction impacts and rehabilitation objectives, included as Appendix D.2.</p> <p>No additional mitigation is proposed.</p>
Post approval management	<p>CEMP to include input from DoI Water</p> <p>Works on waterfront land consistent with Guidelines for Controlled Activities on Waterfront Land (DPI 2012).</p>	<p>All commitments and mitigation measures would be managed through the implementation of a Project Environmental Management Plan (PEMP). The PEMP would comprise a Construction Environmental Management Plan (CEMP), an Operation Environmental Management Plan (OEMP) and a Decommissioning Environmental Management Plan (DEMP). These plans would be prepared sequentially, prior to each stage of works by the contractor (CEMP, DEMP) and proponent (OEMP).</p> <p>The PEMP would include performance indicators, timeframes, implementation and reporting responsibilities, communications protocols, a monitoring program, auditing and review arrangements, emergency responses, induction and training and complaint/dispute resolution procedures. The monitoring and auditing program would clearly identify any residual impacts after mitigation. Adaptive management would be used to ensure that improvements are consolidated in updated EMPs.</p> <p>Specifically, a mitigation measure of the project is to:</p> <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</p> <p>It is proposed to include consultation with DoI as a requirement of the CEMP. An updated mitigation measure to this effect is now provided in Section 7:</p> <p>As part of the CEMP, DOI would be consulted regarding water quality impacts.</p> <p>Development consistent with the Guidelines for Controlled Activities on Waterfront Land (DPI 2012) is a commitment of the project.</p>

6.3 FIRE AND RESCUE NSW

Fire and safety risk associated with photovoltaic solar	<p>That a comprehensive ERP is developed for the site.</p> <p>That the ERP specifically addresses foreseeable on-site and off-site fire events and other emergency incidents, (e.g.</p>	<p>Fire and Rescue NSW commented that small and large scale photovoltaic installations present unique electrical hazard risks to their personnel when fulfilling their emergency first responder role. Due to the electrical hazards associated with large scale photovoltaic there is potential risk to the health and safety of firefighters and FRNSW and NSW Rural Fire Service must be able to be able to implement effective and appropriate risk control measures when managing an emergency incident at the proposed site.</p>
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Issue	Detail of issue	Proponent response
	<p>fires involving solar panel arrays, bushfires in the immediate vicinity or potential hazmat incidents).</p> <p>That the ERP detail the appropriate risk control measures that would need to be implemented to safely mitigate potential risks to the health and safety of firefighters and other first responders (including electrical hazards). Such measures would include the level of personal protective clothing required to be worn, the minimum level of respiratory protection required, decontamination procedures, minimum excavation zone distances and a safe method of shutting down and isolating the photovoltaic system (either in its entirety or partially, as determine by risk assessment).</p> <p>Other risk control measures that may need to be implemented in a fire emergency due to any unique hazards specific to the site should also be included in the ERP</p> <p>Two copies of the ERP are stored in prominent 'Emergency Information Cabinet' which is located in a position directly</p>	<p>An existing mitigation measure is already proposed regarding fire and safety risk:</p> <ul style="list-style-type: none"> <i>Prior to operation of the solar farm, 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>Detail appropriate risk control measures to mitigate potential risks to the health and safety of firefighters and other first responders</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>A copy of the ERP is to be stored in a location directly adjacent to the sites main entry points [now proposed to modify this measure, as stated in the third bullet point below]</i> <i>Once constructed and prior to operation, the operator is to contact with the relevant local emergency management committee regarding the site.</i> <p>It is proposed to include the four additional measures stated by Fire and Rescue NSW in their detailed submission:</p> <ul style="list-style-type: none"> <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 photovoltaic system (either in its entirety or partially, as determined by risk assessment).</i> <i>Other risk control measures for unique site-specific hazards would be included.</i> <i>Once constructed and prior to operation, the operator of the facility will contact the relevant local emergency management committee (LEMC).</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>

Issue	Detail of issue	Proponent response
	<p>adjacent to the site's main entry point/s.</p> <p>Once constructed and prior to operation, that the operator of the facility contacts the relevant local emergency management committee (LEMC).</p>	

6.4 NSW DIVISION OF RESOURCES AND GEOSCIENCE

Mineral value of land and consultation	<p>Include an assessment of the development's compatibility with existing land uses on the site and adjacent land including operating mines, extractive industries, mineral or petroleum resources and exploration activities.</p> <p>Requirement for consultation with mineral exploration licence holders and evidence of consultation to be provided.</p> <p>Evidence of consultation with affected quarry operators should also be provided.</p> <p>Should biodiversity offsets be considered for this project, GSNSW requests consultation to ensure there are no potential sterilisation impacts to resources.</p>	<p>The Department notes that the site is located on prospective rocks of the Macquarie Arc and proximal to the Kaiser (Alkane Resources) and Commonwealth (Impact Minerals) prospects. The Macquarie Arc has the prospectivity for an economic mineral discovery with the potential to translate into mines equivalent in value to Northparkes or Cadia.</p> <p>An assessment of compatibility with existing land uses including mining is included in Section 8.2. It acknowledges that there could be no extraction of minerals onsite during the construction period [similarly during operations, for large parts of the site]. Due to the proposal being highly reversible, mineral exploration would not continue to be sterilised in the long term, post decommissioning.</p> <p>Evidence of consultation has now been provided to the Department and a summary is provided in Section 4.3.4 of this Submissions Report.</p> <p>Onsite native vegetation offsets are not proposed as part of this project.</p>
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Issue	Detail of issue	Proponent response
6.5 NSW OFFICE OF ENVIRONMENT AND HERITAGE		
Aboriginal heritage	<p>The Aboriginal cultural heritage assessment is adequate, although the need for test excavations at PADs 1 and 2 requires further consideration.</p> <p>OEH has not sighted convincing scientific evidence to support the need for test excavations at PADs 1 and 2. The information provided in the ACH assessment highlights the low significance of the Aboriginal objects and the intense land use disturbance history across the project area. The archaeological descriptions indicate limited opportunities for subsurface discoveries of high significance.</p> <p>The Cultural Heritage Management Plan should include a rationale for, and details of, any proposed ACH test excavations of PADs 1 and 2.</p> <p>OEH is to be consulted regarding the development of the Cultural Heritage Management Plan.</p>	<p>After consideration of the comments from the Registered Aboriginal Parties (RAPs) and discussions with OEH, there are three options for the management and mitigation of the Aboriginal heritage issues:</p> <ol style="list-style-type: none"> 1. Adjust the footprint of the solar farm to reduce the impact on archaeologically sensitive areas (the creekline; refer constraints mapping Figure 3-2). 2. Undertake subsurface testing in line with a validated Cultural Heritage Management Plan (CHMP) and in consultation with the RAPs and OEH. The testing program would be guided by the ultimate footprint and in consideration of the archaeological values being assessed. 3. Monitor certain areas for archaeological material during construction. <p>It is proposed to amend the EIS mitigation measure to provide more flexibility in approach; all options above would require consultation with the RAPs. Any monitoring or testing would be undertaken in consideration of OEH advice.</p> <p>The revised mitigation measure is as follows. The updated final Aboriginal Cultural Heritage Assessment Report (ACHAR) is now being forwarded to the RAPs containing this measure.</p> <p><i>If the complete avoidance of PAD1 and PAD2 is not possible, further archaeological investigation in the form of test excavations in order to establish the nature and significance of any sub surface deposits should be undertaken. Alternatively, if PAD 1 and PAD 2 impacts are significantly reduced, monitoring certain areas for archaeological material during construction, could be undertaken. Excavations would be conducted prior to any development and would be undertaken in consultation with the Registered Aboriginal Parties in compliance with the OEH Code of Practice. A technical report on the results of the testing would be provided and management strategies recommended depending on the outcome. The testing would be conducted by a qualified archaeologist and members of the registered Aboriginal parties. Any monitoring or testing would be undertaken in consideration of OEH advice and outlined through a Cultural Heritage Management Plan.</i></p>
Avoid impacts on CEEC	<p>Avoid all Box Gum grassy woodland Critically Endangered Ecological Community (CEEC) in the centre of the site.</p>	<p>OEH stated that the patch of CEEC in the centre of the site should be completely avoided. The project footprint has now been reduced to avoid impacts on the CEEC (shown in Figure 3-2). The overall reduction on this community compared to the layout presented in the EIS is 2.0751 ha. The overall reduction on native vegetation is 9.83 ha.</p>

Issue	Detail of issue	Proponent response
Enhance EEC to be retained	<p>Patches of White Box – Yellow Box – Blakely’s Red Gum EEC located on-site but outside the impact area should be assessed for their suitability as offset areas.</p> <p>The Flora and Fauna Management Plan (FFMP) should consider the potential to link and enhance remnant patches on the site, particularly if the patches form part of the offset.</p>	<p>A Biodiversity Offset Strategy (BOS) has been prepared for the proposal and is appended to this report, Appendix C.</p> <p>The proposed layout has been redesigned to avoid all impacts to zones generating offsets, where possible. The has resulted in small residual areas that are mostly due to cable routes where impacts to native dominated areas cannot be avoided. In summary:</p> <ul style="list-style-type: none"> • No CEEC would now be impacted (a reduction of approximately 2 ha). • 8.48 ha less native vegetation in moderate to good and 1.35 ha in low condition would now be impacted. • A credit requirement of 3 biodiversity credits is generated by the proposal. <p>The small size of an offset site generating 3 would be fragmented, subject to edge effects and unlikely to improve in biodiversity value. As such, retirement of the 3 biodiversity credits from the biodiversity register established under Part 7A of the TSC Act is preferred. No onsite offsets or enhancement of existing vegetation is proposed. The updated credit profile is provided in Appendix C.5.</p> <p>Two additional mitigation measures are proposed:</p> <p><i>If the credit profile of the final infrastructure layout cannot be reduced to zero, retirement of the biodiversity credits from the biodiversity register established under Part 7A of the TSC Act would be undertaken.</i></p> <p><i>The FFMP would consider the potential to link and enhance remnant patches on the site.</i></p>
Landscape plantings	<p>OEH supports the use of indigenous plant species associated with White Box – Yellow Box – Blakely’s Red Gum EEC in landscaping.</p>	<p>As a recommendation of the Visual Impact Assessment, the Proponent commits to Solar farm native vegetation screening that would be comprised of varying native species appropriate to the area.</p> <p>No additional mitigation is proposed.</p>
6.6 NSW TRANSPORT, ROADS AND MARITIME SERVICES (RMS)		
Traffic management	<p>Lack of detail regarding construction staff commuter traffic (and the assumption that 80% will be transported by bus).</p>	<p>The proponent commits to ensuring safety for all road users and pedestrians. These commitments include:</p> <ul style="list-style-type: none"> • Road upgrades and a road dilapidation report • Preparation and implementation of a Haulage plan • Preparation and implementation of a Traffic Management Plan

Issue	Detail of issue	Proponent response
	How will traffic be managed safely in the event this 80% target is not met.	<p>Rationalising traffic to and from the site is the key strategy to manage safety impacts of site access for motorists. It will reduce the number of vehicles on the road as well as reduce driver fatigue. The 80% target is considered feasible and to provide certainty, it is proposed to reword the commitment of the project as follows:</p> <ul style="list-style-type: none"> • <i>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. The plan would include, but not be limited to: ...</i> <ul style="list-style-type: none"> ○ <i>Carpooling/shuttle bus arrangements to minimise vehicle numbers during construction (the proponent is committed to transporting 80% of construction traffic to the site by bus. Pick up points will be identified in the Traffic Management Plan which will be developed prior to construction)</i> <p>The proponent has confirmed that RMS are satisfied with this approach.</p>
Traffic numbers	<p>Lack of detail regarding projected traffic volumes on Goolma Road and how this will be managed for the safety of all road users during construction and operation.</p> <p>Further consideration of the cumulative traffic impact with Bodangora Wind Farm.</p>	<p>The proponent has now confirmed that the main traffic route for oversize vehicles will be from Sydney via Wellington driving north on Goolma Road. No oversize vehicles will come via Gulgong from Newcastle.</p> <p>In consultation with Andrew McIntyre from RMS on 7 February 2018, the proponent has clarified that no intersection upgrade of Goolma Rd and Mitchell Hwy is required. Existing speed limits enforced at this intersection and the intersection treatment is considered sufficient.</p> <p>To provide further information on projected traffic volumes and management, the proponent has commissioned a week-long traffic count during the school term at the proposed entrance of the solar farm site on Goolma Road.</p> <p>Andrew McIntyre confirmed a traffic count duration of 1 week is acceptable. A summary of the 1-week traffic volumes and speeds are displayed in the table below:</p>

Issue	Detail of issue	Proponent response																																																																																	
		<table><tr><td colspan="2" rowspan="2">GPS information</td><td>Lat</td><td colspan="2">32° 30' 48.89 North</td><td colspan="3">Direction of Travel</td></tr><tr><td>Long</td><td colspan="2">148° 58' 21.07 East</td><td>Combined</td><td>Northbound</td><td>Southbound</td></tr><tr><td rowspan="2">Traffic Volume : (Vehicles/Day)</td><td colspan="2">Weekdays Average</td><td colspan="2">2,095</td><td colspan="2">1,061</td><td colspan="2">1,034</td></tr><tr><td colspan="2">7 Day Average</td><td colspan="2">1,954</td><td colspan="2">986</td><td colspan="2">968</td></tr><tr><td>Weekday</td><td>AM</td><td colspan="2">07:00</td><td colspan="2">200</td><td colspan="2">159</td><td colspan="2">62</td></tr><tr><td>Peak hour starts</td><td>PM</td><td colspan="2">15:00</td><td colspan="2">193</td><td colspan="2">63</td><td colspan="2">131</td></tr><tr><td rowspan="2">Speeds : (Km/Hr)</td><td colspan="2">85th Percentile</td><td colspan="2">102.3</td><td colspan="2">102.7</td><td colspan="2">101.9</td></tr><tr><td colspan="2">Average</td><td colspan="2">88.6</td><td colspan="2">86.1</td><td colspan="2">91.1</td></tr><tr><td>Classification % :</td><td colspan="2">Light Vehicles up to 5.5m</td><td colspan="2">85.8%</td><td colspan="2">85.1%</td><td colspan="2">86.5%</td></tr></table>					GPS information		Lat	32° 30' 48.89 North		Direction of Travel			Long	148° 58' 21.07 East		Combined	Northbound	Southbound	Traffic Volume : (Vehicles/Day)	Weekdays Average		2,095		1,061		1,034		7 Day Average		1,954		986		968		Weekday	AM	07:00		200		159		62		Peak hour starts	PM	15:00		193		63		131		Speeds : (Km/Hr)	85th Percentile		102.3		102.7		101.9		Average		88.6		86.1		91.1		Classification % :	Light Vehicles up to 5.5m		85.8%		85.1%		86.5%	
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		<p>The peak traffic generation from the Solar Farm is anticipated to commence prior (between 6am and 7am) to the existing weekday peak period (between 7am and 8am). The projected traffic volumes from the Solar Farm will only add approximately 40 additional vehicles to the traffic volumes between 6am and 7am which currently average 120 vehicles. This will result in a predicted combined directional flow for the main access corridor of only 160 vehicles, which would be less than the existing AM weekday peak period. The road corridor will therefore be operating significantly under capacity. Additional vehicles above the projected 40 peak hour vehicles generated by the Solar Farm should also be easily accommodated within the capacity of the road corridor.</p> <p>As illustrated through the table above, average vehicular speeds were approximately 10kph below the posted speed limits with the 85th percentile slightly above the posted 100kph limit.</p> <p>Bodangora Wind Farm is located approximately 9.5km north of the proposal site, on Goolma Road. The Bodangora Wind Farm construction time line is approximately 18 months and full commercial operation is targeted to be in the second half of 2018. As of 4 April 2018:</p> <ul style="list-style-type: none"> • Site mobilisation was 100% complete • Earthworks and access road construction were 70% complete • The first turbine foundation pour was 100% complete • Substation construction was 50% complete • Transmission line construction was 70% complete. <p>The Traffic Management Plan for the wind farm states that most Bodangora wind farm construction staff will travel to the site on a daily basis from Dubbo and Wellington, via Mitchell Highway and Goolma Road, and from Orange, via Burrendong Way and Goolma Road. Staff may travel in light vehicles, with 2 – 3 people per vehicle. Alternatively, buses may be used to transport staff to and from site, which would reduce the risk of driver fatigue and the number of traffic movements on the local road network. Services and small deliveries are most likely to be sourced from Wellington, Dubbo, and Orange as the closest commercial centres to the site. The main components will be transported for 390 km from the Port of Newcastle to Bodangora (and therefore will not pass the Wellington SF site).</p> <p>Projected traffic loads, volumes and timing are sourced from the Traffic Management Plan (NGH Environmental 2017c) below:</p>

Traffic loads:

Component	Number of units	Length (m)	Top Diameter (m)	Bottom Diameter (m)	Weight (tonnes)
Nacelle	33	9.5	4.0	3.8	87.0
Hub	30	3.8	3.5	3.3	29.0
Nose cone	33	2.9	2.9	1.8	0.8
Blade	99	63.7	4.2	2.5	16.1
Transformer	33	2.9	2.6	3.0	11.0
Controller	33	3.9	3.2	3.2	5.6
Convertor	33	2.8	1.1	2.8	4.0
Base Tower	33	12.0	4.3	4.3	46.0
Mid tower section B	33	20.6	4.3	4.3	52.5
Mid tower section A	33	23.8	4.3	4.3	46.0
Top tower section	33	24.3	4.3	3.1	36.0
Adapter	33	4.8	4.8	1.0	9.8
Main Transformer	1	8	4.5 high x 4.5 wide		120

Volumes:

Activity and deliveries	Low loader	Semi-trailer	Truck	Concrete agitator	RAV	Light vehicle
Site set-up and de-mobilisation: supply and remove: portacabins, skips, generator, tank.	12	2	2	-	-	-
Roads/hardstand construction: gravel for roads, laydowns, crane pads, excavators, rollers, dozers, etc.	16	-	3680	-	-	-
Foundations: supply of concrete, reinforced street and formwork, plant item delivery	16	64	-	3288	-	-
Wind turbine generators: turbine sections, towers, cranes, equipment	68	8	-	-	612	-
Cable installation: cables, backfill material, excavator, plant / equipment	8	30	280	-	-	-
Overhead line: delivery of conductors, poles, excavator other plant equipment	8	18	-	-	6	-
Substation: gravel, concrete, switch-room, O&M, workshops, transformer, electricals	12	16	-	20	2	-
Transmission Line: poles, cross arms, insulators and conductors	-	8	56	-	-	60
Other: staff vehicle movements, met masts, waste collection, consumables	-	-	140	-	-	12036
TOTAL	140	146	4158	3308	620	12096

Issue	Detail of issue	Proponent response
		<p>Timing:</p> <p>The morning peak on a daily basis at the project area would include delivery via approximately 30 light vehicles, three RAVs, and five heavy vehicles between 6.00 am and 7.00 am. RAVs and widened low loaders have the extra restriction of only traveling during daylight hours. As a consequence, it is expected that RAVs and widened low loaders will also arrive at various times through the daytime.</p> <p>Given the construction is fairly advanced, all peak construction traffic is expected to have ceased by the second half of 2018, when the proposed construction program for the Wellington Solar Farm would be just commencing.</p> <p>Wind and solar farm construction programs are similar in that peak construction traffic occurs after initial detailed design and early works. Site mobilization for the Wellington SF would not commence until late 2018 with peak traffic numbers after this date. There would therefore be no overlap in peak construction traffic of the two projects, mitigating the greatest cumulative risk.</p> <p>The conclusion in light of Bodangora program and the traffic count data now obtained is that the traffic generation as a result of the Solar Farm is likely to have minimal impact on the ongoing operation of Goolma Road. Based on existing vehicle numbers and projected traffic volumes, the road is predicted to continue to operate significantly under capacity during the peak periods.</p>
Further information required to make assessment	Development of a Traffic Management Plan (TMP) in consultation with the Dubbo Regional Council and RMS prior to the commencement of haulage and/or construction operations. The TMP is to identify and provide management strategies to manage the impacts of project related traffic.	<p>As stated above, the proponent commits to:</p> <p><i>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...</i></p>
Further information required to make assessment	Proposed road facilities, access and intersection treatments are to be identified and be in accordance with Austroads Guide to Road Design and, on	<p>RMS noted that the proposed road facilities, access and intersection treatment would be identified and be in accordance with Austroads Guide to Road Design and, on classified roads, Roads and Maritime supplements, including safe intersection sight distance.</p> <p>The intersection of the Wellington SF with Goolma Road would be upgraded to the appropriate standard to accommodate the increased traffic flows that would occur during construction. Although the final design has not yet</p>

Issue	Detail of issue	Proponent response
	classified roads, Roads and Maritime supplements, including safe intersection sight distance.	<p>been completed, the location and form of the main access road intersection with Goolma Road would provide adequate sightlines (approximately 1km) for vehicles entering and exiting the site.</p> <p>The proponent has consulted with Andrew McIntyre from RMS on 7 February 2018 (correspondence has been made available to Department of Planning and Environment) further regarding the project and makes a commitment to work with RMS on the intersection of the Wellington SF and Goolma Road intersection, which has been identified as a basic right and basic left. This intersection will be upgraded to accommodate the increased traffic flows to the site from the Port of Botany via the Mitchell Highway and Wellington. The location of the site north of Wellington on the Mitchell Highway, the delivery port of Botany and the location of local service centres to the south and east will result in the majority of traffic created by the project turning right into Goolma Road from the highway, very little traffic is expected to approach the site from the north on Goolma Road.</p> <p>The proponent will further consult with the Dubbo Regional Council and RMS regarding the proposed upgrading of the site access. The upgrade would be subject to detailed design and must be designed and constructed to the standards specified by RMS Guidelines.</p> <p>The proponent will apply for a Section 138 application to Dubbo Regional Council prior to any intersection upgrade.</p> <p>No changes to the EIS mitigation measures are proposed.</p>
Further information required to make assessment	Layout of internal road network, parking facilities and infrastructure within project boundary.	<p>The proponent has provided an updated layout (Figure 3-2) showing the internal road network, parking facilities and infrastructure within project boundary.</p> <p>No changes to the EIS mitigation measures are proposed.</p>
Further information required to make assessment	<p>In their response, Roads and Maritime restated the need to provide information requested in their SEARs provided 30 June 2017. Roads and Maritime SEARS included the following additional items:</p> <ul style="list-style-type: none"> A Traffic Impact Study prepared in accordance with Section 2 of RTA's Guide to traffic 	<p>The proponent discussed the request by RMS for further information. RMS's key issue was traffic numbers and management as addressed above. The proponent's understanding is that no further action was required. Specifically:</p> <ul style="list-style-type: none"> As separate TIS is not required. Additional road improvements are not required. Further consideration of local climate is not required.

Issue	Detail of issue	Proponent response
	<p><i>Generating Developments 2002.</i></p> <ul style="list-style-type: none"> • The need for and proposed road improvements, to mitigate the impact of project-related traffic. • Consideration of local climate conditions in regard to road safety for vehicles. 	

6.7 DUBBO REGIONAL COUNCIL

Support from Mayor	<p>Economic growth, employment, transition to renewable energy, beneficial community impacts</p>	<p>In a letter of support, provided in Appendix G, during the exhibition period, the Mayor detailed several opportunities provided by the solar farm proposal, including:</p> <ul style="list-style-type: none"> • Economic growth opportunity for the LGA, particularly Wellington (local construction industry and use of local supplier businesses). • Funds from the sale of power will allow for ongoing maintenance and provide further employment. • Replacement of power currently supplied by the Liddlell Coal fired power station with renewable energy. • In principle support has been given by the proponent for community grants and to support community groups. • The participation of families employed by the project in other aspects of the community will be beneficial. <p>The proponent appreciates the Mayor's support and agrees that the benefits to the local community will be on many fronts and extend throughout the operational stage of the project.</p> <p>The proposal would generate around 200 construction jobs during peak construction as well as indirect supply chain jobs. During the operation and maintenance phase it would employ approximately 1-3 full time staff. Large scale renewable projects create long term employment opportunities, which are rare in many rural communities. The employment benefits extend through the local supply chains to fuel supply, vehicle servicing, uniform suppliers, hotels/motels, B&B's, cafés, pubs, catering and cleaning companies, tradespersons, tool and equipment suppliers and many other businesses. Data from the recent Nyngan and Broken Hill solar projects indicate that local goods and</p>
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Issue	Detail of issue	Proponent response
		<p>services accounted for approximately 56.3% of the project's procurement spend, including \$66 million spent on cables, mounting structures and power conversion equipment from local companies (First Solar, 2014).</p> <p>The proposal would:</p> <ul style="list-style-type: none"> Contribute to the national renewable energy target by promoting energy security through a more diverse energy mix, reducing coal dependence, increasing energy efficiency and moving to lower emission energy sources. <p>The proponent is working with Dubbo Regional Council to develop a Community Benefit Fund that benefits the Wellington community. The proponent would like to support community programs and provide community funding that benefits the broader Wellington community.</p>
Voluntary Planning Agreement	<p>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>	<p>The proponent is working with Dubbo Regional Council since January 2018 to develop a Community Benefit Fund that benefits the Wellington community. Dubbo Regional City Council have discussed the possibility a Planning Agreement that could constitute a Community Benefit Fund (Consultation with Dubbo Regional Council is detailed in Section 4.3.3 and Appendix I). The proponent would like to support community programs and provide community funding that benefit the broader Wellington community.</p> <p>While the submission states that the loss of agricultural land may decrease local population, valid arguments can be made that the diversification of the local economy and economic stimulus provided by the construction and operation of the solar farm may provide greater local benefits than the contribution currently made by the site's agricultural production levels.</p>
Water	<p>The project may be integrated development due to the number of watercourses onsite. Confirmation should be sought from NSW Office of Water</p>	<p>SSD proposals are not integrated development and do not require the concurrence of other state agencies – consultation with relevant public authorities occurs before the Secretary issues SEARs for the preparation of the EIS.</p> <p>Under section 89J of the EP&A Act, SSD developments do not require the following authorisations:</p>

Issue	Detail of issue	Proponent response
		<p>(g) 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>.</p> <p>As best practice measures, the proponent commits to implementing the following:</p> <ul style="list-style-type: none"> Design waterway crossings and services crossing in accordance with the publications: <ul style="list-style-type: none"> Why do fish need to cross the road? Fish Passage Requirements for Waterway Crossings (Fairfull & Witheridge, 2003); and Policy and Guidelines for Fish Friendly Waterway Crossings (NSW DPI, 2003). Guidelines for Watercourse Crossings on Waterfront Land (NSW DPI, 2012) Guidelines for Laying Pipes and Cable in Watercourses on Waterfront Land (NSW DPI, 2012) <p>No additional mitigation is proposed.</p>
Change in Building Use	The existing dwelling on the subject land is to be converted into the development's 'Office and Maintenance' building, changing its classification under the BCA from Class 1a to Class 5 and 8. Clause 93 or 94 of the EP&A Regulation 2000 would have to be addressed.	<p>The existing residential building onsite is intended to be repurposed for use as an O&M building.</p> <p>It is understood this change of use may require changes to the building to meet EP&A Regulation clauses 93 and 94. As there are certain limitations imposed on upgrades to this heritage listed building, and in consideration of cost factors, it may be that the preferred approach becomes the construction of a purpose built O&M building, constructed nearby (refer to new optional O&M building location, Figure 3-1). In this case, the residential building would not be altered and no change of use would occur.</p> <p>The preferred approach will be determined during the competitive tender process for the construction of the solar farm, pending project approval. To ensure all relevant construction standards are met, it is a commitment of the proposal that:</p> <ul style="list-style-type: none"> <i>The Applicant must ensure that all new buildings and structures, and any alterations or additions to existing buildings and structures, are constructed in accordance with the relevant requirements of the Building Code of Australia.</i> <i>It is understood that, under Part 4A of the EP&A Act, the Applicant is required to obtain construction and occupation certificates for the proposed building works. Part 8 of the EP&A Regulation sets out the requirements for the certification of the development.</i> <p>This mitigation measure, usually included in the DPE conditions of consent, is now explicitly added to the project's commitments in Section 7 of this document.</p>

Issue	Detail of issue	Proponent response
Bush fire prone land and APZ requirements	<p>References to the Planning for Bushfire Protection 2006 are out of date. Appendix 3 has been replaced by Addendum Appendix 3 in the PBP in 2010.</p> <p>10m APZ for woodland is erroneous. This only relates to the subdivision of land for residential and rural residential purposes, which doesn't apply to this development.</p> <p>The non-habitable office/maintenance building will achieve the required 3m set back to comply with BCA.</p> <p>Reference is usually made to the Telecommunications Towers in Bush Fire Prone Areas for solar farms due to similar electrical infrastructure, by Council; RFS usually apply a 10m APZ in this case.</p>	<p>Public exhibition of the PBP 2017 recently closed. The updated PBP provides development standards for commercial and industrial development, such as Wind Farms. The recommended APZ for structures/infrastructure/associated buildings in a Wind Farm is 10m. The PBP 2017 does not provide an APZ for Solar Farms.</p> <p>It is understood that Council has routinely applied the provisions of <i>Practice Note 1/11 - Telecommunications Towers in Bush Fire Prone Areas</i> for solar farms, which have similar electrical infrastructure to telecommunications towers. The PBP 2017 provides that determination of the APZ for telecommunication towers, should be done in consultation with RFS. Based on consultation with RFS, a 10m APZ is usually applied in these cases, and this APZ will be used for all infrastructure excepting the Type C Construction commercial/industrial buildings.</p> <p>The proponent already makes the following commitment:</p> <p><i>In developing the 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> <p>No additional mitigation is proposed.</p>
R5 land	<p>Lots 102-104 DP 2987 zoned R5 Large Lot Residential under Wellington LEP 2012. The genesis of the current zoning is not clear, and it is not the subject of an adopted Council Rural/Residential land use strategy.</p>	<p>It is understood that Lots 102-104 DP 2987 were rezoned to accommodate possible rural/residential development associated with the Wellington Correctional Facility. Council note the genesis of the current zoning is not clear and it is not the subject of an adopted Council Rural/Residential land use strategy. The intention of the proponent is to see the zoning revert to RU1.</p> <p>What does the draft Rural Land Use Strategy say about this issue?</p> <p>Currently there is a total of 1,057ha of R5 zoned land in the LGA. Part 3 of the Rural Lands SEPP (2008) establishes the "Rural Subdivision Principles":</p>

Issue	Detail of issue	Proponent response
	The draft Rural Land Use Strategy, while not adopted by Council, may provide some guidance.	<p><i>‘Minimisation of rural land fragmentation’:</i> The recommended areas for R5 in this Strategy are all adjacent to existing towns and villages to minimise the fragmentation of rural land. The recommended lot size of RU1 is large enough to minimise the risk of fragmentation of the agricultural base.</p> <p><i>“Minimisation of rural land use conflicts, particularly between residential land uses and other land uses”.</i> The recommended minimum lot size is sufficiently large enough to minimise the potential for speculative development that might conflict with rural land use. The recommended areas for R5 land are all adjacent to existing towns and villages to minimise the potential for land use conflict.</p> <p>The majority of Councillors support a reduction in the minimum lot size, and an increase in the availability of R5 zoned land.</p> <p>The Strategy recommends the rezoning of rural land to R5, and any planning proposal that seeks rezoning must be justified by a study which gives consideration to the objectives of the Direction.</p> <p>It is proposed seek an application to change R5 land after the approval of the solar farm. This provides certainty to the land owner that loss of the R5 land would not result unless the solar farm were approved. Given the current lack of strategic justification for the R5 zoning, it is understood Council would be supportive of such an application.</p>
Rural land impacts	The EIS refers to SEPP (Rural Lands) 2008 and should consider the Aims and Planning Principles outlined under the SEPP	<p>The Rural Planning Principles, and their relevance to the proposed solar farm are as follows:</p> <p><i>(a) the promotion and protection of opportunities for current and potential productive and sustainable economic activities in rural areas,</i></p> <p>The solar farm provides a diversification of sustainable economic activity, compatible with other rural land uses. The impact on land forms, soil and water resources are minimal. Commitments are made to restore the site to its existing land capability so that future land uses are maintained.</p> <p><i>(b) recognition of the importance of rural lands and agriculture and the changing nature of agriculture and of trends, demands and issues in agriculture in the area, region or State,</i></p> <p>The loss of agricultural productivity in the region is insignificant in relation to the extent of productive land in the South Western Slopes of New South Wales. It would result in a loss of 0.03% of BSAL within the Dubbo Regional LGA. The key driver for the development is the increased economic gain able to be achieved under solar farm operation. This can be achieved with no long-term loss of agricultural productivity potential. The proponent anticipate using sheep to control the grass cover within the plant and will implement this through a grazing licence with a local farmer, essentially allowing the land to be actively farmed and to continue to produce an agricultural revenue stream throughout the project life.</p>

Issue	Detail of issue	Proponent response
		<p><i>(c) recognition of the significance of rural land uses to the State and rural communities, including the social and economic benefits of rural land use and development,</i></p> <p>Community consultation with the local community identified few concerns with regard to land use and employment. Further, the project would provide significant construction and operational benefits for the community by generating around 200 construction jobs during peak construction as well as indirect supply chain jobs. During the operation and maintenance phase it would employ approximately 1-3 full time staff. Large scale renewable projects create long term employment opportunities, which are rare in many rural communities.</p> <p><i>(d) in planning for rural lands, to balance the social, economic and environmental interests of the community,</i></p> <p>As above, the key driver for the development is the increased economic gain able to be achieved under solar farm operation.</p> <p><i>(e) the identification and protection of natural resources, having regard to maintaining biodiversity, the protection of native vegetation, the importance of water resources and avoiding constrained land,</i></p> <p>The site selection and layout of the proposed solar farm has been developed iteratively with environmental constraints mapping, to ensure the proposal responds to the site's constraints. Refer to Figure 3-2.</p> <p><i>(f) the provision of opportunities for rural lifestyle, settlement and housing that contribute to the social and economic welfare of rural communities,</i></p> <p>The proposal does not address this aim. The intention is to convert the one residential dwelling onsite to an operational and maintenance building. This is considered a minor loss of rural settlement opportunity in the area. Considering offsite effects, through the creation of employment, and economic stimulus effects during construction and operation, the project helps current families to continue living in rural areas, and newly settled families to live the rural lifestyle.</p> <p><i>(g) the consideration of impacts on services and infrastructure and appropriate location when providing for rural housing,</i></p> <p>The proposal does not address this aim. It will not provide rural housing. The relevant infrastructure likely to be impacted are transport corridors. It is noted that traffic management measures committed to as part of the project will address impacts on these corridors.</p> <p><i>(h) ensuring consistency with any applicable regional strategy of the Department of Planning or any applicable local strategy endorsed by the Director-General</i></p>

Issue	Detail of issue	Proponent response
		No applicable local strategies are relevant to the proposal.
	The EIS does not address the issue of removing agricultural land from production, the impact of the solar farm upon the soil structure and the future use of the site following the removal of the solar farm.	<p>The proponent appreciates the solar farm would occupy land currently used for agriculture, removing this production potential for the operational life of the solar farm. The nature of the proposal however is that it is minimal in its requirement to disturb land forms and excavate soils. The key infrastructure components are mounted solar panels. The mounting systems are generally installed on steel piles that have been driven or screwed into the ground. In this way, there is generally very little ground disturbance associated with the pile installation. Soil structure would be affected for laydown areas during construction, as well as perimeter tracks and permanent infrastructure during operation. After the initial 30-year operating period, the solar farm would either be decommissioned, removing all above ground infrastructure and returning the site to its existing land capability, or repowered with new PV equipment. The proposal is therefore considered highly reversible with regard to land capability and land use options, post operation.</p> <p>As discussed in Section 6.2, the loss of 316 ha of agricultural land is not considered to be a significant economic loss to the locality as it would result in a loss of only 0.03% of BSAL within the Dubbo Regional LGA. Onsite inspection and consultation with the land owner regarding the historic use of the site indicate that sustained intensive use / high productivity (such as annual cropping) cannot be supported onsite due to soil limitations. Therefore, the contribution that the site makes to regional agricultural income is not expected to be significant.</p> <p>It is identified that the soils onsite have a moderate to high erosion risk. Construction activities specific to the proposal that would result in ground disturbance include:</p> <ul style="list-style-type: none"> • Construction of internal access tracks and associated drainage. • The installation of the piles supporting the solar panels, which would be driven or screwed into the ground to a depth of approximately 1.5m (minimal soil disturbance). • Substation bench preparation. • Concrete or steel pile foundations for the inverter stations, onsite substation and maintenance building. • Trenches up to 1000mm deep for the installation of cables. • Establishment of temporary staff amenities and offices for construction. • Construction of perimeter security fencing. <p>To ensure this highly reversible development restores the site to its existing land capability, for future agricultural or other land uses, the proponent already commits to the following mitigation measures:</p>

Issue	Detail of issue	Proponent response
		<ul style="list-style-type: none"> • 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 • A Spill and Contamination Response Plan would be developed as part of the overall Emergency Response Plan to prevent contaminants affecting adjacent surrounding environments • 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. • A Rehabilitation Plan would be prepared to ensure the array site is returned to its pre-solar farm land capability. The plan would be developed with reference to 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: <ul style="list-style-type: none"> ○ Australian Soil and Land Survey Handbook (CSIRO 2009) ○ Guidelines for Surveying Soil and Land Resources (CSIRO 2008) ○ The land and soil capability assessment scheme: second approximation (OEH 2012) <p>In consideration of DPI's request (refer section 6.2) additional soil testing has been undertaken to supplement the soil landscape and land capability assessment, and to provide baseline soil data for use in the decommissioning and soil rehabilitation phase of the project.</p> <p>No additional mitigation is proposed.</p>
Road upgrades	<p>Consultation should be undertaken with the RMS regarding:</p> <ul style="list-style-type: none"> • The use of Goolma Road for access to the site • Upgrading of some of the Goolma Road intersections to accommodate B-Double truck movements 	<p>The Council submission notes that the use of Goolma Road for access to the site requires RMS approval. Consultation has been undertaken with RMS regarding access, refer to Section 6.6.</p> <p>Council states that some upgrading of the Goolma Road intersections will be required to accommodate B- Double truck movements. As above, the access to the site would be upgraded but, in consultation with RMS, the proponent has confirmed no other upgrades are required.</p>

Issue	Detail of issue	Proponent response
Traffic types	No details have been provided regarding a breakdown of the vehicles by type, specifying Gross Vehicle Mass, vehicle length and expected daily volumes travelling to the site.	<p>Projected traffic loads, volumes and timing are included in Section 6.6. In summary, during the peak construction period there would be the following maximum movements:</p> <ul style="list-style-type: none"> • 100 heavy vehicles. • 300 light vehicles.
Section 138	A Section 138 application is required from Dubbo Regional Council for work on Goolma Road including the construction of a suitable culverted vehicular access off Goolma Road.	Goolma Road is a State Road which is managed by RMS (making RMS the administering authority). If this responsibility has been delegated to Council, the proponent would seek a Section 138 through Council for any upgrades. It is noted that under section 89K of the EP&A Act, several other authorisations cannot be refused if they are necessary for and consistent with an approved SSD, including a consent under Section 138 of the <i>Roads Act 1993</i> .

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"> The maximum harvestable right for surface water of approximately 32.05ML would not be exceeded. A WAL would be obtained, should onsite ground water sources be used. The proponent would purchase water from Council if onsite requirements are not sufficient. 	C		
<ul style="list-style-type: none"> The proposed network of access roads is to be constructed from gravel, and within the floodplain itself are to be constructed at the existing surface level so as not to result in adverse impact on flood behaviour. Any proposed crossings of existing watercourses should, where possible, consist of fords constructed flush with the bed of the watercourse to minimise any hydraulic impact. Detailed design of fencing to ensure no adverse impact on the flow of floodwater and ability to withstand floodwater, this design may include removable sections or collapsible panels 	C		
<ul style="list-style-type: none"> As part of the CEMP, DOI would be consulted regarding water quality impacts. 	PC		
<ul style="list-style-type: none"> A riparian buffer zone of 40m along Wuuluman Creek would be clearly delineated prior to works commencing. Works would be avoided within the riparian buffer zone. 	C		
<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 photovoltaic system (either in its entirety or partially, as determined by risk assessment). Other risk control measures for unique site-specific hazards would be included. 	C	O	D

Safeguards and mitigation measures	C	O	D
<ul style="list-style-type: none"> Once constructed and prior to operation, the operator of the facility will contact the relevant local emergency management committee (LEMC). 		PO	
<ul style="list-style-type: none"> 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. 	C	O	D
<ul style="list-style-type: none"> If the credit profile of the final infrastructure layout cannot be reduced to zero, retirement of the biodiversity credits from the biodiversity register established under Part 7A of the TSC Act would be undertaken. 	PC		
<ul style="list-style-type: none"> The FFMP would consider the potential to link and enhance remnant patches on the site. 	C		
<ul style="list-style-type: none"> Carpooling/shuttle bus arrangements to minimise vehicle numbers during construction (the proponent is committed to transporting 80% of construction traffic to the site by bus. Pick up points will be identified in the Traffic Management Plan which will be developed prior to construction) 	C		
<ul style="list-style-type: none"> The Applicant must ensure that all new buildings and structures, and any alterations or additions to existing buildings and structures, are constructed in accordance with the relevant requirements of the Building Code of Australia. 	C		
<ul style="list-style-type: none"> It is understood that, under Part 4A of the EP&A Act, the Applicant is required to obtain construction and occupation certificates for the proposed building works. Part 8 of the EP&A Regulation sets out the requirements for the certification of the development. 	C		
<ul style="list-style-type: none"> If the complete avoidance of PAD1 and PAD2 is not possible, further archaeological investigation in the form of test excavations in order to establish the nature and significance of any sub surface deposits should be undertaken. Alternatively, if PAD 1 and PAD 2 impacts are significantly reduced, monitoring certain areas for archaeological material during construction, could be undertaken. Excavations would be conducted prior to any development and would be undertaken in consultation with the Registered Aboriginal Parties in compliance with the OEH Code of Practice. A technical report on the results of the testing would be provided and management strategies recommended depending 	C		

Safeguards and mitigation measures	C	O	D
on the outcome. The testing would be conducted by a qualified archaeologist and members of the registered Aboriginal parties. Any monitoring or testing would be undertaken in consideration of OEH advice and outlined through a Cultural Heritage Management Plan.			
<ul style="list-style-type: none"> The materials and colour of onsite infrastructure will, where practical, be non-reflective and in keeping with the materials and colouring of existing infrastructure or of a colour that will blend in with the landscape. Where Practical: <ul style="list-style-type: none"> Proposed new buildings will be non-reflective and colouring will be in keeping with the existing landscape. Pole mounts will be non-reflective Security fencing posts and wire would be non-reflective; colouring would be chosen to reduce the industrial character of the fence and fit the existing landscape. 	C		

The table 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 (First Solar Australia) to fulfil the requirements of Section 75H of the *Environmental Planning and Assessment Act 1979*.

This report makes four changes to the proposal layout, as presented in the EIS:

1. The project footprint has been reduced to avoid impacts on a CEEC.
2. The alternative substation location south of the battery storage facility has now been deleted.
3. The 33kV feeders from the solar farm will run underground along the boundary of the solar farm, under Goolma Road and into the substation.
4. An additional option has been included to construct a purpose-built Operations and Maintenance building near the residence onsite.

Regarding public and agency submissions:

- 1 community submission was received, centred on the impact of solar farms on energy security and pricing.

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.

- 7 government agency submissions were received. The key issues, some of which required further assessment and mitigation, included:
 - Traffic management
 - Soil impact management
 - Flood impacts
 - Water demand and access arrangements
 - Agricultural and mineral land use impacts
 - Aboriginal heritage impacts
 - Impacts on significant native vegetation
 - Rural land impacts
 - Voluntary planning agreements

The benefits of the proposed Wellington SF would remain unchanged. The project would provide the following benefits, specific to Australia's environmental commitments:

- Climate change mitigation
- Employment
- Competitive electricity prices
- Local economic uplift

In consideration of the assessment of the impacts from the project 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).
- Booth Associates 2013. Wellington Council, Rural Land Use Strategy. Report prepared for Wellington Council, October 2013
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- NGH Environmental 2017a. Wellington Solar Farm Environmental Impact Statement. Report prepared for First Solar, November 2017.
- NGH Environmental 2017a. Wellington Solar Farm Biodiversity Assessment Report. Report prepared for First Solar, November 2017.
- NGH Environmental 2017c. Bodangora Wind Farm Traffic Management Plan. Report prepared for Catcon, General Electric and Infigen Energy, June 2017.

APPENDIX A REVISED MITIGATION MEASURES

The complete set of updated mitigation measures are presented below. New or modified measures are in **Bold**.

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

Safeguards and mitigation measures	PC/C	PO/O	D
Biodiversity (Flora and Fauna)			
<ul style="list-style-type: none"> If the credit profile of the final infrastructure layout cannot be reduced to zero, retirement of the biodiversity credits from the biodiversity register established under Part 7A of the TSC Act would be undertaken. 	PC		
<ul style="list-style-type: none"> Hollow-bearing trees within the development site would not be cleared between June and January, to avoid the breeding season of Superb Parrot and Corben's Long-eared Bat and the core hibernation period for Corben's Long-eared Bat. If clearing outside of this period cannot be achieved, pre-clearing surveys would be undertaken to ensure these species do not occur. 	C		
<ul style="list-style-type: none"> Preparation of a Flora and Fauna Management Plan (FFMP) that would incorporate 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 <p>The FFMP would consider the potential to link and enhance remnant patches on the site.</p> <p>The FFMP would form part of the Wellington Solar Farm Construction Environmental Management Plan (CEMP).</p>	C		
<ul style="list-style-type: none"> Stockpiling materials and equipment and parking vehicles will be avoided within the dripline (extent of foliage cover) of any native tree. Prior to the commencement of work, a physical vegetation clearing boundary at the approved clearing limit is to be clearly demarcated and implemented. The delineation of such a boundary may include the use of temporary fencing, flagging tape, parawebbing or similar. 	C		

Safeguards and mitigation measures	PC/C	PO/O	D
<ul style="list-style-type: none"> A riparian buffer zone of 40m along Wuuluman Creek would be clearly delineated prior to works commencing. Works would be avoided within the riparian buffer zone. Existing native riparian vegetation is retained to the greatest extent possible in an undamaged and unaltered condition. Works occurring around the Wuuluman Creek should be in accordance with the DPI Fisheries Policy and Guideline document: <i>Policies and Guidelines for Fish Habitat Conservation and Management</i>. 			
<ul style="list-style-type: none"> A groundcover management plan would be developed and implemented to ensure an appropriate perennial ground cover is established and maintained beneath the arrays during operation of the solar farm. This will require consideration of existing groundcover and may require expert input and trials to achieve the objective. 	C	O	
<ul style="list-style-type: none"> Where possible, landscape plantings will be comprised of local indigenous species with the objective of increasing the diversity of the existing vegetation. Planting locations would be designed to improve the connectivity between patches in the landscape where consistent with landscaping outcomes. 	C		
<ul style="list-style-type: none"> Carry out refuelling of plant and equipment, chemical storage and decanting off site or at least 50m away from farm dams in impervious bunds. Ensure that dry and wet spill kits are readily available. 	C	O	
<ul style="list-style-type: none"> The Construction Environmental Management Plan will include measures to avoid noise encroachment on adjacent habitats such as avoiding night works as much as possible. 	C		
<ul style="list-style-type: none"> Avoid night works. Direct Lights away from vegetation. 	C	O	
<ul style="list-style-type: none"> Weed, hygiene and pest management protocols will be prepared and implemented as part of the Flora and Fauna Management Plan for the proposal. 	C	O	
<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			
The development must avoid the site Wellington Scarred Tree 1, as per the current development design plans detailed in this report. A minimum 10m buffer around the tree should be in place to protect the tree given its current condition.	Design		
If complete avoidance of the ten artefacts scatters and 15 isolated find sites recorded within the proposal area is not possible, the artefacts within the development footprint must	C		

Safeguards and mitigation measures	PC/C	PO/O	D
be salvaged prior to the proposed work commencing and moved to a safe area within the property that will not be subject to any ground disturbance.			
The collection and relocation of the artefacts should be undertaken by an archaeologist with representatives of the registered Aboriginal parties. A new site card/s will need to be completed once the artefacts are moved to record their new location on the AHIMS database.	C		
A minimum 5m buffer should be observed around all sites including those outside the development footprint.	C	O	D
If the complete avoidance of PAD1 and PAD2 is not possible, further archaeological investigation in the form of test excavations in order to establish the nature and significance of any sub surface deposits should be undertaken. Alternatively, if PAD 1 and PAD 2 impacts are significantly reduced, monitoring certain areas for archaeological material during construction, could be undertaken. Excavations would be conducted prior to any development and would be undertaken in consultation with the Registered Aboriginal Parties in compliance with the OEH Code of Practice. A technical report on the results of the testing would be provided and management strategies recommended depending on the outcome. The testing would be conducted by a qualified archaeologist and members of the registered Aboriginal parties. Any monitoring or testing would be undertaken in consideration of OEH advice and outlined through a Cultural Heritage Management Plan.	C		
The proponent should prepare a Cultural Heritage Management Plan (CHMP) to address the potential for finding additional Aboriginal artefacts during the construction of the Solar Farm 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		
Visual Impact			
<ul style="list-style-type: none"> Solar farm vegetation screening: <ul style="list-style-type: none"> A sparse vegetation screen, 1 -2 rows deep, would be established with reference to Appendix C Proposed onsite screening. The screen would be comprised of varying native species appropriate to the area and of varying height to soften not block the view of the site. Breaks in the screen, reflecting natural breaks in existing remnants would be appropriate. 	Pre-construction though operation		

Safeguards and mitigation measures	PC/C	PO/O	D
<ul style="list-style-type: none"> ○ Planting should be undertaken as soon as practical in the construction process depending on the season, as it will take time for the plants to establish and become effective as a screen. Seasonal requirements for planting should also be considered. • The screen would be maintained for the operational life of the solar farm. 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. Residential receiver screening <ul style="list-style-type: none"> ○ Establish plantings for receivers R2 and R8, in consultation with landowners, based on the as-built views of the solar farm. 			
<ul style="list-style-type: none"> • Where feasible, underground rather than overhead power lines would be considered. • 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 possible. • The materials and colour of onsite infrastructure will, where practical, be non-reflective and in keeping with the materials and colouring of existing infrastructure or of a colour that will blend in with the landscape. Where Practical: <ul style="list-style-type: none"> ○ Proposed new buildings will be non-reflective and colouring will be in keeping with the existing landscape ○ Pole mounts will be non-reflective ○ Security fencing posts and wire would be non-reflective; colouring would be chosen to reduce the industrial character of the fence and fit the existing landscape 		Design stage	
<ul style="list-style-type: none"> • During construction, dust would be controlled in response to visual cues. • Areas of soil disturbed by the project would be rehabilitated progressively or immediately post-construction, reducing views of bare soil. • Ground cover would be maintained beneath the panels and within the site boundary, to break up views of the infrastructure from the side and back views. 	C		

Safeguards and mitigation measures	PC/C	PO/O	D
<ul style="list-style-type: none"> Night lighting would be minimised to the maximum extent possible (i.e. manually operated safety lighting at main component locations). 			
<ul style="list-style-type: none"> Maintenance of ground cover beneath panels, to reduce dust. Minimise traffic movements on unsealed tracks, to reduce dust. Night lighting would be minimised to the maximum extent possible (i.e. manually operated safety lighting at main component locations). 		O	
Noise impacts			
<ul style="list-style-type: none"> 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		
<ul style="list-style-type: none"> A Noise Management Plan would be developed as part of the CEMP and will specifically target R1 and R7 in order to achieve compliance. The plan would include, but not be limited to: <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 put in place to mitigate future occurrences, where the noise in question is in excess of allowable limits. 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. 	C		

Safeguards and mitigation measures	PC/C	PO/O	D
<ul style="list-style-type: none"> If the ESF is constructed outside the main construction period, a specific construction noise management plan would be undertaken to manage any additional impacts. 	C		
Historic heritage			
<ul style="list-style-type: none"> The Applicant must ensure that all new buildings and structures, and any alterations or additions to existing buildings and structures, are constructed in accordance with the relevant requirements of the Building Code of Australia. 	C		
<ul style="list-style-type: none"> It is understood that, under Part 4A of the EP&A Act, the Applicant is required to obtain construction and occupation certificates for the proposed building works. Part 8 of the EP&A Regulation sets out the requirements for the certification of the development. 	C		
<ul style="list-style-type: none"> 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
<ul style="list-style-type: none"> The Narrawa Homestead should not be altered whilst in use as an Office and Maintenance building for the solar farm. 	C	O	
<ul style="list-style-type: none"> The existing cultural plantings around the Narrawa Homestead and its driveway should be maintained. 	C	O	D
Traffic, transport and road safety			
<ul style="list-style-type: none"> Carpooling/shuttle bus arrangements to minimise vehicle numbers during construction (the proponent is committed to transporting 80% of construction traffic to the site by bus. Pick up points will be identified in the Traffic Management Plan which will be developed prior to construction) 	C		
<ul style="list-style-type: none"> The proponent would consult with the Roads and Maritime Services regarding the proposed upgrading of the site access from Goolma Road. The upgrade would be subject to detailed design and must be designed and constructed to the standards specified by RMS Guidelines. 	Design stage		
<ul style="list-style-type: none"> A Haulage Plan would be developed with input from the roads authority, including but not limited to: <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

Safeguards and mitigation measures	PC/C	PO/O	D
<ul style="list-style-type: none"> Upon determining the haulage route(s) for construction vehicles associated with the Project, and prior to construction, undertake a Road Dilapidation Report. The Report shall assess the current condition of the road(s) and describe mechanisms to restore any damage that may result due to traffic and transport related to the construction of the Project. The Report shall be submitted to the relevant road authority for review prior to the commencement of haulage. 			
<ul style="list-style-type: none"> 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. The plan would include, but not be limited to: <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. Scheduling of deliveries. Community consultation regarding traffic impacts for nearby residents and school bus operators. Consideration of cumulative impacts, undertaken consultation with Bodangora Wind Farm. Consideration of impacts to the railway. Traffic controls (speed limits, signage, etc.). Procedure to monitor traffic impacts and adapt controls (where required) to reduce the impacts. Procedure to monitor traffic impacts and adapt controls (where required) to reduce the impacts. 	PC		D
<ul style="list-style-type: none"> If the EFS is constructed outside the main construction period, a specific traffic management plan would be undertaken to manage any additional impacts. 	C		
Land use (including mineral resources)			

Safeguards and mitigation measures	PC/C	PO/O	D
<ul style="list-style-type: none"> Consultation with local community, to minimise impact of construction of adjacent agricultural activities and access. 	C	O	D
<ul style="list-style-type: none"> Consultation would be undertaken with TransGrid regarding connection to the substation and design of electricity transmission infrastructure. 	C	O	D
<ul style="list-style-type: none"> Consultation with proposal site mineral titleholders regarding the proposal and potential impacts. 	C	O	D
<ul style="list-style-type: none"> A Rehabilitation Plan would be prepared to ensure the array site is returned to its pre-solar farm land capability. The plan would be developed with reference to 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: <ul style="list-style-type: none"> Australian Soil and Land Survey Handbook (CSIRO 2009) Guidelines for Surveying Soil and Land Resources (CSIRO 2008) The land and soil capability assessment scheme: second approximation (OEH 2012) 			D
<ul style="list-style-type: none"> The materials and colour of onsite infrastructure will, where practical, be non-reflective and in keeping with the materials and colour of the landscape. 	C		
Soils			
<ul style="list-style-type: none"> 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 stage		
<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"> Carry out soil testing prior to any impacts, to inform any soil treatments and provide baseline information for the decommissioning rehabilitation. 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 	C		D

Safeguards and mitigation measures	PC/C	PO/O	D
<p>infestation, maintain soil organic 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 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: <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 EPA for incidents that cause material harm to the environment (refer s147-153 <i>Protection of the Environment Operations Act</i>). Manage the storage of any potential contaminants onsite. Mitigate the effects of soil contamination by fuels or other chemicals (including emergency response and EPA notification procedures and remediation. 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
<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 	C	O	

Safeguards and mitigation measures	PC/C	PO/O	D
<ul style="list-style-type: none"> 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. 			
<ul style="list-style-type: none"> 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		D
Hydrology surface and groundwater), water quality and water use			
<ul style="list-style-type: none"> The maximum harvestable right for surface water of approximately 32.05ML would not be exceeded. A WAL would be obtained, should onsite ground water sources be used. The proponent would purchase water from Council if onsite requirements are not sufficient. 	C		
<ul style="list-style-type: none"> As part of the CEMP, DOI would be consulted regarding water quality impacts. 	PO		
<ul style="list-style-type: none"> Design waterway crossings and services crossing in accordance with the publications: <ul style="list-style-type: none"> Why do fish need to cross the road? Fish Passage Requirements for Waterway Crossings (Fairfull & Witheridge, 2003); and Policy and Guidelines for Fish Friendly Waterway Crossings (NSW DPI, 2003). Guidelines for Watercourse Crossings on Waterfront Land (NSW DPI, 2012) Guidelines for Laying Pipes and Cable in Watercourses on Waterfront Land (NSW DPI, 2012) 	Design		
<ul style="list-style-type: none"> 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

Safeguards and mitigation measures	PC/C	PO/O	D
<ul style="list-style-type: none"> The proposed network of access roads is to be constructed from gravel, and within the floodplain itself are to be constructed at the existing surface level so as not to result in adverse impact on flood behaviour. Any proposed crossings of existing watercourses should, where possible, consist of fords constructed flush with the bed of the watercourse to minimise any hydraulic impact. 	C		
<ul style="list-style-type: none"> The refuelling of plant and maintenance would be undertaken in impervious bunded areas on hardstand areas only. 	C	O	D
<ul style="list-style-type: none"> All potential pollutants stored on-site would be stored in accordance with HAZMAT requirements and bunded. 	C	O	D
<ul style="list-style-type: none"> 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	O	
Flooding			
<ul style="list-style-type: none"> 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 layout of the solar array mounting piers are designed to minimise encroachment within the areas of highest velocity and depth. This may necessitate solar module frame spans in excess of those proposed. The mounting height of the solar module frames should be designed such that the lower edge of the module is clear of the predicted 1% AEP flood level. All electrical infrastructure, including inverters, should be located above the 1% AEP flood level. Where electrical cabling is required to be constructed below the 1% AEP flood level it should be capable of continuous submergence in water. The proposed perimeter security fencing should 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. 		Design	

Safeguards and mitigation measures	PC/C	PO/O	D
<ul style="list-style-type: none"> The proposed network of access roads is to be constructed from gravel, and within the floodplain itself are to be constructed at the existing surface level so as not to result in adverse impact on flood behaviour. Any proposed crossings of existing watercourses should, where possible, consist of fords constructed flush with the bed of the watercourse to minimise any hydraulic impact. Detailed design of fencing to ensure no adverse impact on the flow of floodwater and ability to withstand floodwater, the design may include removable sections or collapsible panels. 	C		
<ul style="list-style-type: none"> An Emergency Response Plan incorporating a Flood Response Plan would be prepared prior to construction covering all phases of the project. The plan would: <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). Consideration of site access in the event that some tracks become flooded. Establish an evacuation point. Define communications protocols with emergency services agencies. 	C	O	D
Resource use and waste generation			
<ul style="list-style-type: none"> A Waste Management Plan (WMP) would be developed to minimise wastes. It would include but not be limited to: <ul style="list-style-type: none"> Identification of opportunities to avoid, reuse and recycle, in accordance with the waste hierarchy. Quantification and classification of all waste streams. Provision for recycling management onsite. Provision of toilet facilities for onsite workers and 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
<ul style="list-style-type: none"> Septic system is installed and operated according to the Dubbo Regional Council regulations. 	C	O	

Safeguards and mitigation measures	PC/C	PO/O	D
Community and socio-economic			
<ul style="list-style-type: none"> Liaison with local industry representatives to maximise the use of local contractors, manufacturing facilities, materials. 	C		
<ul style="list-style-type: none"> Liaison with local representatives regarding accommodation options for staff, to minimise adverse impacts on local services. 	C		D
<ul style="list-style-type: none"> Liaison with local tourism industry representatives to manage potential timing conflicts with local events. 	C		D
<ul style="list-style-type: none"> 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. Protocols to inform relevant stakeholders of potential impacts (haulage, noise, air quality etc.). Protocols to respond to any complaints received. 	C		
<ul style="list-style-type: none"> If the ESF is constructed outside the main construction period, a specific community notification procedure would be undertaken to manage any additional impacts of this installation. 	C		
<ul style="list-style-type: none"> A site inspection is to be undertaken prior to construction to ensure no watermills would be impacted by the proposal. 	C		
Air quality and climate			
<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. 	C		D
<ul style="list-style-type: none"> Vehicle loads of material which may create dust would be covered while using the public road system. 	C		D
<ul style="list-style-type: none"> 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
Hazards			
<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 photovoltaic system (either in its entirety or partially, as determined by risk assessment). Other risk control measures for unique site-specific hazards would be included. 	C	O	D

Safeguards and mitigation measures	PC/C	PO/O	D
<ul style="list-style-type: none"> Once constructed and prior to operation, the operator of the facility will contact the relevant local emergency management committee (LEMC). 		PO	
<ul style="list-style-type: none"> 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. 	C	O	D
<ul style="list-style-type: none"> Design of the ESF would be undertaken to address fire risks (spacing and setbacks). 	Design		
<ul style="list-style-type: none"> 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
<ul style="list-style-type: none"> Protocols would be developed for lithium-ion battery storage, maintenance, and incident response to mitigate Li-ion fire risks. 	C	O	D
<ul style="list-style-type: none"> The transportation of new and waste lithium-ion batteries would comply with the requirements of the Dangerous Goods Code, including specific 'special provisions' and 'packing instructions' applying to the transportation of Li-ion batteries. 	C	O	D
<ul style="list-style-type: none"> Develop a Bush Fire Management Plan to 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) 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 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 In developing the 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. 	C	O	D
<ul style="list-style-type: none"> Fire risks associated with the Energy Storage Facility would be managed by: 	C	O	D

Safeguards and mitigation measures	PC/C	PO/O	D
<ul style="list-style-type: none"> Locating the ESF as far as practicable from any sensitive receivers (residences) or large stands of vegetation. Installing reliable automated monitoring (voltage and temperature), alarm and shutdown response systems. Installing reliable integrated fire detection and fire suppression systems (inert gas). Ensuring the battery buildings/containers are not vulnerable to external heat effects in the event of a bushfire. Designing appropriate separation and isolation between individual battery containers and between batteries and other infrastructure. Compliance with all relevant guidelines and standards. Preparation of a specific Battery Fire Response Plan under the general Fire Response Plan, in consultation with fire authorities, fire suppression experts, storage team, and with reference to relevant standards and guidelines. 			
<ul style="list-style-type: none"> An APZ of minimum 10 metres would be maintained between remnant or planted woody vegetation and solar farm infrastructure. The APZ around the perimeter of the site would incorporate a 4 metre wide gravel access track. 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	
<ul style="list-style-type: none"> 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	
<ul style="list-style-type: none"> Appropriate fire-fighting equipment would be held on site to respond to any fires that may occur at the site during construction. This equipment will 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		
<ul style="list-style-type: none"> The NSW RFS and Fire and Rescue would be provided with a contact point for the solar farm, during construction and operation. 	C	O	

Safeguards and mitigation measures	PC/C	PO/O	D
<ul style="list-style-type: none"> Following commissioning of the solar farm, 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	
<ul style="list-style-type: none"> 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 possible. Dead end tracks would be signposted and include provision for turning firetrucks. 	C	O	D
<ul style="list-style-type: none"> 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 possible hot works would be carried out in specific safe areas (such as the Construction Compound temporary workshop areas). 	C	O	D
<ul style="list-style-type: none"> Machinery capable of causing an ignition would not be used during bushfire danger weather, including Total Fire Ban days. 	C	O	D
<ul style="list-style-type: none"> Prior to operation of the solar farm, 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. Detail appropriate risk control measures to mitigate potential risks to the health and safety of firefighters and other first responders Outline other risk control measures that may need to be implemented in a fire emergency due to any unique hazards specific to the site. A copy of the ERP is to be stored in a location directly adjacent to the sites main entry points Once constructed and prior to operation, the operator is to contact with the relevant local emergency management committee regarding the site. 		O	
<ul style="list-style-type: none"> All electrical equipment would be designed in accordance with relevant codes and industry best practice standards in Australia. 	C		

Safeguards and mitigation measures	PC/C	PO/O	D
<ul style="list-style-type: none"> All design and engineering would be undertaken by qualified and competent person/s with the support of specialists as required. 	C		
<ul style="list-style-type: none"> Design of electrical infrastructure would minimise EMFs. 	C		

APPENDIX B ADDITIONAL TRAFFIC COUNTS

APPENDIX C BIODIVERSITY OFFSET STRATEGY

C.1 INTRODUCTION

This Biodiversity Offset Strategy (BOS) outlines a broad approach for meeting the offset requirements for the Wellington Solar Farm proposal in accordance with the NSW Framework for Biodiversity Assessment (FBA); the appropriate pathway for assessing biodiversity impacts for this project. The offset requirements for the proposal have been determined according to the FBA through the preparation of a Biodiversity Assessment Report (BAR) (NGH Environmental 2017b). These requirements are summarised in Section C.2 below.

Under Section 11.2 of the FBA, ecosystem and species credit requirements identified for the project can be offset in a number of ways, including:

- a) Retirement of biodiversity credits from the biodiversity register established under Part 7A of the TSC Act (which would include retiring credits via a BioBanking agreement)
- b) Ecological rehabilitation of previously mined land in accordance with Section 12.2 of the FBA
- c) Supplementary measures as determined in accordance with the NSW Biodiversity Offsets Policy for Major Projects (if appropriate offsets are not feasible, proponents can provide funds equivalent to those required to purchase biodiversity credits)
- d) A combination of the above.

Based on changes made to the project footprint (described in Section 3 of the Submission Report) the updated credit requirement is provided in Section C.2 below and the proposed strategy for meeting this requirement is detailed in Section C.3.

C.2 UPDATED CREDIT REQUIREMENT

C.2.1 *Refinement of the indicative layout*

Two vegetation communities occur onsite. Both belong to the White Box – Yellow Box – Blakely's Red Gum Woodland Endangered Ecological Community (EEC). One patch meets the Commonwealth *Environment Protection Biodiversity Conservation Act 1999* (EPBC Act) criteria for a listed Critically Endangered Ecological Community (CEEC).

The indicative layout has been updated specifically to reduce impacts on significant vegetation, identified as high constraints. In response to OEH submission, this includes the area in the centre of the site that would meet the CEEC definition. The comparison of the native vegetation impacts presented in the EIS (and BAR) to the refined layout is provided in Table C-1. In summary:

- No CEEC would now be impacted (a reduction of approximately 2 ha).
- 8.48 ha less native vegetation in moderate to good and 1.35 ha in low condition would now be impacted.

Table C-1 Comparison of the native vegetation impacts presented in the EIS and those now proposed

PCT	Impacted area from EIS (ha)	Revised impact area now proposed (ha)	Net (ha)
266 White Box Grassy Woodland and derived native grassland			
Total:	8.57 (moderate to good condition) 135.34 (low condition)	0.09 (moderate to good condition) 134.04 (low condition)	-8.48 (moderate to good condition) -1.3 (low condition)
Amount that qualifies as CEEC:	2.08	0.00	-2.08
267 Blakely's Red Gum - Yellow Box grassy tall woodland			
Total:	0.32 (low condition)	0.27 (low condition)	-0.05 (low condition)
Amount that qualifies as CEEC:	0.00	0.00	0.00

C.2.2 Requirement to offset

Clearing of EEC (and CEEC) or threatened species habitat with site value scores equal to or greater than 17 generates an offset requirement for the project. No threatened species credits for species credit species are generated.

The proposed layout has been redesigned to avoid all impacts to zones generating offsets where possible. The has resulted in small residual areas that are mostly due to cable routes where impacts to native dominated areas cannot be avoided. The comparison of the native vegetation zones that generated offsets in the EIS (and BAR) to the refined layout is provided in Table C-2.

Table C-2 Comparison of the zones generating offsets presented in the EIS and those now proposed

Zone ID	Vegetation zones	Condition class	Impacted area from EIS (ha)	Revised impact area now proposed (ha)	Net (ha)
2.	PCT #266 BVT CW216 White Box Grassy Woodland in the Upper Slopes sub-region of the NSW South Western Slopes Bioregion	Moderate/Good Other (Planted Vegetation)	0.90	0.00	-0.90
4.	PCT #266 BVT CW216 White Box Grassy Woodland in the Upper Slopes sub-region of the NSW South Western Slopes Bioregion	Moderate good –	1.81	0.06	-1.75
5.	PCT #266 BVT CW216 White Box Grassy Woodland in the Upper Slopes sub-region of the NSW South Western Slopes Bioregion	Derived Grassland Moderate to Good –	5.86	0.03	-5.83

Zone ID	Vegetation zones	Condition class	Impacted area from EIS (ha)	Revised impact area now proposed (ha)	Net (ha)
Total			8.57	0.09	-8.48

C.2.3 Updated FBA credit calculations

The BAR determined that a total of 203 ecosystem credits were required to be offset for the development (BioBanking Credit Calculator (BCC) Major Project 144/2017/4350MP Version 2). The BCC full credit report for the development site was provided as Appendix E of the BAR (NGH Environmental 2017b).

The impact areas were updated consistent with Table D-2 above. No other changes were warranted to the calculations. The updated offset requirement is 3 ecosystem credits, a reduction of credits, as detailed in Table C-3. The credit report produced by the BCC is provided below in Section C.4.

Table C-3 Updated credit requirement

Zone ID	Vegetation zones	Condition class	Credits required in BDAR	Revised credit requirement now proposed	Net
2.	PCT #266 BVT CW216 White Box Grassy Woodland in the Upper Slopes sub-region of the NSW South Western Slopes Bioregion	Moderate/Good Other (Planted Vegetation)	26	0	-26
4.	PCT #266 BVT CW216 White Box Grassy Woodland in the Upper Slopes sub-region of the NSW South Western Slopes Bioregion	Moderate – good	56	2	-54
5.	PCT #266 BVT CW216 White Box Grassy Woodland in the Upper Slopes sub-region of the NSW South Western Slopes Bioregion	Derived Grassland – Moderate to Good	121	1	-120
Total			203	3	-200

C.3 STRATEGY TO RETIRE CREDITS

Considering the options set out in Section C.1, *Option a) Retiring credits via a BioBanking agreement established within the solar farm site*, would have been the preferred approach to retire the required credits. However, given the very low credit requirement of the revised project design (3 ecosystem credits), the establishment of physical offsets to meet this requirement is not considered practical. The small size of an offset site generating 3 would be fragmented, subject to edge effects and unlikely to improve in biodiversity value. As such, retirement of the 3 biodiversity credits from the biodiversity register

established under Part 7A of the TSC Act is preferred. No onsite offsets or enhancement of existing vegetation is proposed.

When the NSW biodiversity offsets policy for major projects was developed, it was recognised that it should be supported by an offsets fund. The fund would allow proponents to meet their offset requirement through a payment into the fund, if they choose. The fund would then buy the required offsets instead of the proponent. This increases certainty for proponents and allows a more strategic approach to finding and buying offsets. Payment into the fund would be considered a 'supplementary measure' under Section 11.2 of the FBA.

This fund has now been established under the NSW Biodiversity Offsets Scheme as detailed by the NSW *Biodiversity Conservation Act 2016* (BC Act), as the Biodiversity Conservation Trust Fund (BCTF). If credits are not able to be retired through purchasing them from the biodiversity register (or equivalent under the new legislation), then the preferred approach would be to make a payment into the BCTF. The amount to be paid into the BCTF would be calculated using the NSW OEH Offsets Payment Calculator with a conversion factor applied on the FBA credit requirement (to convert to the equivalent credit number under the new scheme to be determined in consultation with OEH).

Note: No Rehabilitation on land identified for rehabilitation or supplementary measures as defined in the NSW Biodiversity Offsets Policy for Major Projects are proposed as part of this BOS.

C.4 CONCLUSION

The proposed layout has been redesigned to avoid all impacts to zones generating offsets, where possible. The has resulted in small residual areas that are mostly due to cable routes where impacts to native dominated areas cannot be avoided. In summary:

- No CEEC would now be impacted (a reduction of approximately 2 ha).
- 8.48 ha less native vegetation in moderate to good and 1.35 ha in low condition would now be impacted.
- A credit requirement of 3 biodiversity credits is generated by the proposal.

Retirement of the 3 biodiversity credits from the biodiversity register established under Part 7A of the TSC Act is preferred. No onsite offsets or enhancement of existing vegetation is proposed.

C.5 BIOBANKING CREDIT CALCULATOR CREDIT REPORT FOR THE REVISED LAYOUT

APPENDIX D SOIL SURVEYS AND ANALYSIS

D.1 Geotechnical Report By Douglas Partners

D.2 Further Analysis By Dm McMahon Pty Ltd

D.1 GEOTECHNICAL REPORT BY DOUGLAS PARTNERS

D.2 FURTHER ANALYSIS BY DM MCMAHON PTY LTD

APPENDIX E HYDROLOGICAL AND HYDRAULIC ASSESSMENT

APPENDIX F ABORIGINAL CULTURAL HERITAGE ASSESSMENT REPORT

APPENDIX G MAYORS LETTER OF SUPPORT

APPENDIX H UPDATED CONSTRAINTS A3 FORMAT

For greater clarity, the updated constraints mapping presented in Figure 3-2 is provided overleaf in A3 format.

APPENDIX I COUNCIL CONSULTATION

APPENDIX J MODELING RESOURCES CORRESPONDENCE

APPENDIX K DRUMMOND WEST CORRESPONDENCE

APPENDIX L BORAL CORRESPONDENCE