Submissions Report

SUNRAYSIA SOLAR FARM, BALRANALD

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1 INTRODUCTION

1.1 BACKGROUND

The Sunraysia Solar Farm proposal (the 'proposal') would generate approximately 200 MWAC. The proposal encompasses the construction and operation of a solar photovoltaic array over an area up to 1000 hectares, with associated infrastructure, maintenance facilities, access tracks, overhead or underground powerline to connect to the nearby substation and upgrades to adjacent roads. The proposal is classified as State Significant Development under the NSW *Environmental Planning and Assessment Act 1979* and requires consent from the NSW Minister for Planning.

Maoneng is an international renewable energy investment and development company headquartered in Australia. Since 2010, the founders of Maoneng have had the vision and ambition to be a respected global leader for delivering sustainable energy solutions for commercial, industrial and government clients.

An Environmental Impact Statement (EIS), describing the proposal and assessing its potential environmental impacts, was prepared by NGH Environmental and submitted to the NSW Department of Planning and Environment and placed on public exhibition between the 4 February and 5 March 2017.

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

- Aboriginal cultural heritage
- Biodiversity
- Visual amenity
- Noise

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

1.2 PURPOSE OF THIS REPORT

This Submissions Report identifies and addresses submissions made in regard to the EIS for the proposal.

NGH Environmental has prepared this submissions report on behalf of Maoneng 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 proposal.
- Describe any changes to the proposal, including a revised set of proposed mitigation measures.

1.3 PROJECT SUMMARY

1.3.1 Site location

The proposal site is located around 17km south of the Balranald town centre and around 140km south east of Mildura, within the Balranald Shire Council Local Government Area (LGA). The site is accessed from Balranald-Tooleybuc Road (also known as Yanga Way and Mallee Highway) located to the east. The

proposed solar farm would connect to an existing substation, approximately two kilometres north of the site (Figure 1).

1.3.2 Key components of the proposal

The proposal site covers 1000ha of land. Key Infrastructure components are illustrated in Figure 2 and would include:

- Solar arrays: approximately 750,000 solar panels (variously spaced)
- Single axis tracking system units (east-west variety; approximately 10,000 units), north oriented fixed-tilt units, east-west facing fixed-tilt units or a combination of these technologies
- Up to 100 PV Boxes or PV Skids, each of them containing an inverter and a 22 or 33kV transformer
- Delivery/Substation units
- Energy storage
- Onsite cabling and electrical connections between solar panels, combiner boxes and power conversion units (inverters), power cables, optic fibre cables, conduits, trenches.
- The internal reticulation of power would be at 22 or 33kV.
- Internal gravel access tracks to allow for construction traffic, site maintenance vehicles, gravel access road and parking for staff and visitors including upgrade of the site access from Balranald-Tooleybuc Road
- Permanent staff amenities and office and maintenance building
- Perimeter security fencing, approximately 2.5 metres high
- A 220kV overhead power line to connect into the existing Balranald Transgrid substation, approximately two kilometres north of the site, through the travelling stock route
- Connection to the Balranald substation, including civil, electrical and communications works.

The site is around 1000 Ha of which about 800 Ha would be developed. Within the 800 Ha, ground disturbance would be limited to:

- The installation of the piles supporting the solar panels, which would be driven or screwed into the ground
- Construction of internal access tracks
- Establishment of PV boxes and delivery/substations
- Trenches for the installation of cables
- Establishment of staff amenities and offices
- Temporary facilities for construction staff including vehicle/caravan parking
- Construction of perimeter security fencing
- Erection of wireless communication towers
- Erection of solar farm viewing decks and spaces
- Establishment of canals and various water reticulation infrastructure to capture rain collected surface water which would be stored in an on-site water storage facility no more than 100ML in total capacity. This water would be used for the running of the solar farm where required (e.g. cleaning of solar panels, water for sheep that may graze the site).

The solar array area covers the majority of the site, however the ground disturbance from pile installation would disturb only about 0.3% of the total site area. Panels within the solar array area would sit above the

ground and ground cover would be maintained under the panels. Additional ground disturbance outside the solar arrays would result from construction of the internal access tracks, trenches for cabling and footings for other equipment. The area of the site which would be affected by shading from the solar panels would be approximately 70% of the proposal site.

Excluding underground cabling, all electrical plant and equipment would be established at least 350mm above the surrounding finished surface levels.

Ancillary facilities would be located within the site boundary and may include:

- Material laydown areas
- Temporary vehicular and caravan car parks for construction workers and transportation.
- Once the solar farm has been commissioned a small car park would remain for the minimal staff required and occasional visitors
- Temporary construction site offices
- Staff amenities. Once constructed, the solar farm would be monitored and operated remotely and would therefore require a minimum number of maintenance personnel (0.5 full time equivalent staff) to be on site

It is noted that the location of the ancillary facilities on the proposed infrastructure plan are indicative only and final locations would be determined at the detailed design phase.

The annual output of the proposal would be approximately 527 Gigawatt hours (GWh), with a capacity factor of approximately 25 per cent depending on the technology. The construction phase of the project would be 7 to 12 months with a capital cost of approximately $275 million. The proposal is expected to have a 30 year operating life.

Figure 1 Regional location of the proposal and proposed infrastructure

1.3.3 Indicative timeline

An indicative timeline for the proposal is outlined in Table 3-1.

Table 1-1 Indicative timeline.

Phase	Approximate commencement	Approximate duration
Construction	July 2017	10 months
Commissioning	May 2018	2 months
Operation	July 2018	30 years
Decommissioning	~2050	3 months

For more detailed information of the components and ancillary facilities of the solar farm refer to the EIS for the proposal, Section 3.

1.4 PROJECT MODIFICATIONS

Changes to the proposal that have been incorporated into this submission report are minor and are related to:

1. Revisions to the proposal's mitigation measures because of the submissions. These are detailed in Section 3.
2. Commitment to offsetting threatened species and endangered ecological communities that would be removed as a result of the proposal. This is detailed in Section 3.
3. Minor relocation of the transmission line easement which has been moved 35 metres to the east at its southern end to avoid encroaching into the neighbouring property. Refer to Appendix A for revised Infrastructure Plan.
4. Clarification of the configuration of the 220/33kV of substation illustrated in the Infrastructure Plan in Appendix B of the EIS following a direct request from Transgrid to the project proponent. Refer to below.

1.4.1 Configuration of the 220/33kV of substation

The proposed 220/33kV substation as located on the infrastructure plan in Appendix A would comprise of constructing:

- Civil works required for a new bench and foundations and earthing
- Civil works for adequate transformer bund
- Electrical installation of transformer bay and a 280MVA, 220kV/33kV transformer
- Adequate control and protection works
- Site works including lighting fence, and other ancillary items.

The total footprint of the proposed substation works would not exceed 1 Hectare in area and would fit within the original designated area. The height of the substation would vary but would not exceed 10m (or the maximum height of the HV transmission line and towers).

The requirements detailed are consistent with construction activities that would be undertaken as part of the proposed solar farm. No additional impacts are likely as a result of these works and safeguards detailed in the EIS are considered adequate.

1.5 PROJECT BENEFITS

The proposal would generate approximately 200 MWAC. This is enough electricity to supply the equivalent of approximately 120,000 average NSW homes. The generation of non-polluting renewable energy assists with the transition from fossil fuel generated electricity to a cleaner more sustainable alternative in line with the Commonwealth's Government's Renewable Energy Target. This is in keeping with national and international agreements to which Australia is a party.

1.6 PROJECT JUSTIFICATION

The proposed development of a commercial scale solar electricity power station will assist with reducing Australia's GHG emissions, meeting future energy demands, contributing to Australia's renewable energy targets, supporting a global reduction in GHG emissions, be consistent with the Renewable Energy Action Plan, and contribute to economic development in the Balranald region.

The proposal has been developed to make use of existing grid connections, on a previously cleared agricultural site that has generally low environmental values.

2 CONSIDERATION OF SUBMISSIONS

2.1 EXHIBITION PERIOD AND LOCATION

The EIS was placed on public exhibition for a period of 4 weeks from the 4 February to the 5 of March 2017. It was available at http://majorprojects.planning.nsw.gov.au/index.pl?action=view_job&job_id=7680

Hard copies were available at the following locations:

- Department of Planning and Environment: Information Centre
- Balranald Shire Council: 70 Market Street Balranald
- Nature Conservation Council: 14/338 Pitt Street, Sydney

2.2 RESPONSES RECEIVED

The Department of Planning and Environment received a total of 11 submissions for the proposal during the public exhibition period, as detailed in Table 2-1. The submissions are provided in full in Appendix B and summarized in the following sections.

Table 2-1 Responses received

Category	Number of submissions
Individual members of the public	2
Government agency submissions	9
Total	**11**

2.3 PROPONENT'S RESPONSE TO COMMUNITY SUBMISSIONS (2)

Two community submissions were received from a person in Braidwood and in Glenwood.

Issue raised	Proponent's response
In support of the proposal	Two public submissions where received, both were in support of the proposal. One expressed a preference of the development of solar farms versus wind farms. The second supported the development of clean energy, and the projects ability to support Australia in meeting its Paris Climate Agreement Target. No submissions were received from the public that opposed the development.

2.4 PROPONENT'S RESPONSE TO GOVERNMENT AGENCY SUBMISSIONS (9)

Agency submissions are paraphrased and addressed in the following sections.

2.4.1 NSW Planning and Environment

Issue	Response
Ensure vegetation clearing accurately accounts for the relocation of the transmission line easement as shown in the revised constraints map provided to the Department on 2nd March 2017	Biodiversity surveys conducted within the transmission line easement included vegetation mapping, floristic quadrats (Q4,Q5,Q6,Q7,Q8,Q12), habitat tree mapping, targeted threatened flora transects and incidental fauna surveys. These surveys were conducted within a 50 metre buffer to the east of the existing fence line. Following a request from the Department of Planning and Environment the transmission line easement has been moved approximately 35 metres to the east to demonstrate avoidance of impact to a neighbouring property. NGH are confident that the mapped vegetation in this area is consistent with that which occurs on the ground. An additional botanical survey will be required to confirm the quality and extent of offsets for the project, which will allow for additional survey to be conducted in the modified transmission alignment. This additional survey will confirm the exact extent of vegetation communities, tree hollows, and threatened flora species. This data will then be fed into an updated Biodiversity Credit Calculator report, which will provide a final Biodiversity Credit Requirement. It is not considered unlikely that the modification would generate a credit requirement greater than previously identified, or that those credits required to provide an offset would not be available within the remainder of the site.
Provide a revised map infrastructure plan (Appendix B of the EIS) showing the cadastral boundaries of the solar farm site and neighbouring properties.	An updated infrastructure plan showing the cadastral boundaries of the site and neighbouring properties is provided in Appendix A.

2.4.2 Office of Environmental and Heritage

Issue	Response
Aboriginal heritage	
The Aboriginal Cultural Heritage component of the EIS is adequate and has been undertaken in accordance with the Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW. Conditions of development consent provided in the submission are recommended to be implemented.	The proponent supports recommendations made by OEH. The conditions of development consent have been included in Section 3 of this submissions report.
Biodiversity	
<u>Operational Footprint</u> Additional vegetation clearing to upgrade existing roads from one to two lanes needs to be specified and assessed for impacts to threatened species and communities.	The Biodiversity Assessment Report assessed vegetation removal that would be required to upgrade any roads. The road corridor of Yanga Way at the proposed intersection contains no vegetation except disturbed ground cover and occasional native shrubs. All proposed roads were buffered to a distance of 10 metres as a 'worst-case scenario' in relation to vegetation removal.
It is unclear if the vegetation clearing and soil disturbance for construction of the perimeter security fence has been included in the impact assessment.	The perimeter security fence would not require vegetation to be removed. A safeguard has been added to Section 3 of this submissions report to ensure the fence is installed in such a way it would not require the removal of vegetation or impact any root zones.
The width of the cleared corridor required for the proposed 2.3 km transmission line should also be specified in the EIS or the BAR	The width of the transmission line easement assessed was 50 metres, which reflects the maximum clearing that would be required. This formed the basis for the calculation of vegetation needing to be removed.
<u>Section 3.1.1 Vegetation Communities</u> We recommend checking the extent of the patches of PCT 170 'Chenopod sand plain mallee woodland' to the west of the central (north-south) vehicle track, at the approximate coordinates Easting 728201 Northing 6145470 (GDA94, Zone 54). The area of vegetation mapped in the EIS appears to be around two hectares smaller than vegetation evident on the most recent aerial imagery available to OEH.	NGH Environmental's mapping included ground validation of vegetation maps. Ground truthing of vegetation maps has a significantly higher accuracy than mapping that utilises aerial imagery. NGH Environmental has a high confidence level in this mapping. It should be noted that field work has taken any previous clearing or tree mortality that occurred. In the instance of the area of vegetation mapped in the central area of the site, a vegetation quadrat (Q2) was conducted within the patch, in addition to the walking of the boundary of the extant vegetation and mapped using a handheld GIS device. Tracks and quadrat location showing the level of detail undertaken to determine the extent of this patch are shown in Figure 3 – 7 on Page 32 of the BAR.

Issue	Response
	Surveys of the patch found that the edges of the patch had been cleared and burnt, and the 'central' area of this patch was absent. As such, the new smaller boundary was mapped. Photographs below show evidence of this change in extent. Photograph one shows cleared and burnt vegetation along the southern boundary of the patch, facing west, while the second photograph shows the extent of the patch, and was taken from the point where the 'central' trees previously existed (facing east).  Photograph 2.1 – Recently cleared vegetation  Photograph 2.2 – Extent of eastern portion of vegetation patch
<u>Section 4.3.2 Targeted Surveys</u> <u>Paddock Trees</u> The recording and assessment of paddock trees and hollows is unclear. Additional information required. **We require additional information about how many trees are within area mapped as non-native vegetation (cropping), and details about the calculations.** The BAR should include a better explanation for why 41 of the paddock trees were inaccessible during the field survey.	As discussed on page 41 of the BAR, *an assessment was undertaken of all accessible trees within the proposal area to record the species, presence of hollows, tree height, diameter and number, and size and location of hollows. Photographs were taken of each tree surveyed.* Trees were initially assessed for hollow presence, with their species, height and DBH recorded. Where trees contained hollows, they were divided into the following size categories based on entrance diameter: <10cm = small, 10cm – 25 cm = medium, and >25cm = large. Additionally, the location of the

Issue	Response
	hollow was recorded, and included Trunk, Limb and Fissure. A representative photograph was taken of each tree. A number of the isolated paddock trees identified within previous studies of the site were not detected, though were present on the aerial photograph of the site. These are thought to have been cleared or fallen. 41 trees were inaccessible during the survey due to access limitations as land was densely planted with wheat crops, and the survey team was requested to minimise the level of disturbance to the crop. The trees were assessed from a distance using binoculars to determine whether any stick nests were present, and to allow for the assessment of the trees' genus. Using this data, NGH Environmental calculated a ratio of the number of hollow-bearing trees to non hollow-bearing trees based on the number of hollow-bearing trees that were able to be accessed within the project area. This ratio was then extrapolated to encompass the 41 trees that were inaccessible during the survey. As the use of the Paddock Tree Calculator is not mentioned in the FBA (OEH, 2014a) and was not stipulated in the SEARs, the calculator has not been used for the assessment.
<u>Section 5.1.2 Construction Phase</u> Table 5-2 (page 46). We recommend modifying the fifth measure, which proposes mulching native trees that have been removed and applying the mulch for site stabilisation. Hollow-bearing limbs should be retained on-site as habitat logs.	This change is supported and has been incorporated into the mitigation measures in Section 3 of submissions report.
Any supplementary planting within native vegetation must not disturb the existing ecosystem and be with local species.	This change is supported and has been incorporated into the mitigation measures in Section 3 of submissions report.
A landscaping strategy should be included with the flora and fauna management plan proposed in Table 5.2.	This change is supported and has been incorporated into the mitigation measures in Section 3 of submissions report.
<u>Biodiversity Offset Strategy (BAR, page 77)</u> The minimum requirements for the Biodiversity Offset Strategy (BOS) have not been met. A BOS should be submitted with the BAR, and include assessment of the number and type of credits that may be created at the offset site (FBA Section 12, page 47).	A Biodiversity Offset Strategy is provided in Appendix D.

2.4.3 EPA

Issue	Response
No issues raised, no further comment.	Noted

2.4.4 DPI

Issue	Response
The Project Environmental Management Plan should include an Emergency / Bushfire Management Plan based on the safeguards documented in the EIS.	This change is supported and has been incorporated into the mitigation measures in Section 3 of this submissions report.
The proponent should confirm that the landholder has an agreement with the proponent to cover: site and water resource access, operational and farming protocols and risk management, timing of construction, decommissioning and rehabilitation measures.	The proponent would own the land prior to construction and therefore would not need an agreement with the current landholder for these issues.
The proponent should provide a concept map detailing the proposed installation of canals and water reticulation infrastructure to manage rainfall runoff to enable proper assessment.	The proposed canals and water reticulation infrastructure to manage rainfall runoff would be prepared during detailed design. These would be installed within the existing footprint of the solar farm along access tracks that would be constructed for the proposal and is unlikely to result in additional impacts. The requirement to prepare and provide a concept map of the canals and water reticulation infrastructure has been included in the mitigation measures in Section 3 of this submissions report.
The EIS has identified a number of potential sources for water demand for the project during and post construction, but has not provided an assessment of the security, potential impacts and adequacy of existing water licenses. The proponent should assess and confirm these details prior to project approval to understand the water supply risks and to ensure any requirement for additional licensing is identified early and WMA approvals can be excluded where appropriate under Section 89J of the EP&A Act.	<u>Water use - construction</u> The project during construction would require 700ML over a 12 to 18 month period. This equates to approximately 58 to 39ML per Month, 1.9 – 1.3 ML per day or 50-100 semi loads per day. Water trading starts in July of each financial year. Trading in temporary water supply for the financial year allows a water user to transfer Water Access License(s). The number of High Security Water Access Licenses (WAL's) available for the NSW Murray River Water Source as of 4 April 2017 was 737. Approximately half of the High Security WAL's are traded each year or 180 plus WAL's. High security water made available for the 2016/2017 year was 188,988.1ML. The water required for the project (700ML) is 0.4% of the high security water available this past year. The High Security allocation hovers around the 180,000ML mark each year.

Issue	Response
	The water required for the project would be about 1% of the water used (69706.8ML) in the current financial year. The water required for the project would be about 0.6% of the unused water made available in the last financial year. The impact of drawing the 700ML would be negligible because ample remaining water is available in the system based on this year's figures. Of the water available approximately 69706.8ML had been used or 37% of the total available as at 4 April 2017. Currently available on the Wilks water trading web site as of 4 April 2017 in the Murrumbidgee Valley for temporary trading is 2540ML. Local Water Utilities including Balranald Shire Council number 16 in the NSW Murray River Water Source as of 4 April 2017. Their allocation this year was 33497ML. The combined 16 local water utilities used 11606.1ML. This left 21,891ML unused. The project requirement of 700ML represents 3.2% of the unused component of the local water utility allocation. The project requirement of 700ML represents 6.0% of the used component of the local water utility allocation. 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. <u>Water use – operation</u> Based on the above, impacts on water supply during operation would be negligible. The annual operational water required would be about 500kL per year of non-potable water. This would represent 0.0043% of the local water utility allocation used this year to date. As such it is reasonable to assume the operational needs of the project can be easily met from the Balranald Shire supply via local water utility allocation. 500kl/ year is about 2000L/day or a small truck load per week. The Council raw water supply is available to road builders and others in the LGA for commercial purposes.
Confirm whether 3 dams identified in the EIS within the footprint of the proposed solar arrays are to be removed. If so, an impact assessment should be undertaken.	As detailed in the EIS, the dams within the construction footprint may need to be removed to allow the construction of the facility. An additional 5 dams are located on the proposal site outside the construction footprint and would be maintained. Two dams within the construction footprint were surveyed during the biodiversity survey, with the other not accessible during the survey due to timing and safety constraints. The eastern-most dam was found to contain no surrounding aquatic vegetation or refugia in the form of rocks and logs, and was considered of low quality for aquatic fauna due to its lack of connectivity to any other

Issue	Response
	water sources. One species of waterbird was identified utilising the dam, Grey Teal *Anas gracilis*. The dam is shown in the photograph below.  Photograph 2.3 – Dam located within the eastern portion of the site The dam in the south-western portion of the site was found to be dry and apparently cropped. As the dams have the potential to provide habitat for aquatic fauna such as frogs and turtles, a safeguard has been included in Section 3 of this submissions report to ensure any dewatering is supervised by an ecologist, with fauna being relocated to dams retained outside the construction footprint.
The EIS identifies a reserve to be established for 'Roadway'. Appropriate action relating to this road would be to make Application for Closure and Subsequent Disposal.	The proposal would require the modification of Yanga Way to incorporate an intersection allowing the safe movement of traffic into and out of the proposal site. This would be undertaken within the road reserve. All other tracks would be within the property.
The proponent must obtain relevant licensing under the *Water Management Act 2000* before commencing any works which intercept or extract groundwater or surface water.	This change is supported and has been incorporated into the updated mitigation measures in Section 3 of this submissions report.
Any approval for the project should include the following Condition of Consent: o The proponent shall prepare a decommissioning management plan with rehabilitation objectives and strategies for returning the land to rangeland agricultural production in consultation with DPI Agriculture (landuse.ag@dpi.nsw.gov.au).	This change is supported and has been incorporated into the updated mitigation measures in Section 3 of this submissions report.

2.4.5 Fire and Rescue NSW (FRNSW)

Issue	Response
The NSW Rural Fire Service advises that site proposed for the extent of solar arrays and associated infrastructure should be maintained to Asset Protection Zone standards as outlined within section 4.1.3 and Appendix 5 of 'Planning for Bush Fire Protection 2006' and the NSW Rural Fire Service's document 'Standards for asset protection zones'.	Section 8.3.3 of the EIS assesses the potential risks of bushfires and provides safeguards to manage those risks in accordance with 'Planning for Bush Fire Protection 2006'. A safeguard has been added to Section 3 of this submissions report to ensure the detailed design will be maintained to Asset Protection Zone standards as outlined within section 4.1.3 and Appendix 5 of 'Planning for Bush Fire Protection 2006' and the NSW Rural Fire Service's document 'Standards for asset protection zones'.
The NSW Rural Fire Service advises that the development has in place suitable fire mitigation measures to ensure that a fire occurring within the site cannot escape the site.	Noted

2.4.6 RMS

Issue	Response
The cumulative traffic impact needs to be assessed should both the Sunraysia Solar Farm and the Limondale Sun Farm projects be constructed simultaneously. However based on the information provided a number of unanswered variables exist, such as timing of construction, transportation routes, source of and transportation of materials such as sand and gravel, etc. that require clarification. It is considered appropriate that the assessment of these applications condition the need for discussions with the relevant road authorities (in the case Roads and Maritime Services and Council) to formulate appropriate traffic management processes and road upgrades.	The EIS for the Limondale Sun Farm is under preparation and no details on access, timing of construction, etc are known. It is very unlikely that construction of these projects would start at the same time.
Roads and Maritime Services has assessed the Development Application based on the documentation provided and would raise no objection to the development proposal subject to the Consent Authority ensuring that the development is undertaken in accordance with the information submitted as amended by the inclusion of the conditions of consent detailed in the RMS submission (refer to Appendix A).	Noted. All conditions of consent detailed in the RMS submission have been incorporated within Section 3 of this submissions report.

2.4.7 DRE

Issue	Response
EIS does not include DRE agency consultation or requirements and as there is no evidence of consultation with Iluka, it is unclear if direct consultation with the titleholder has occurred (page 109 – Mining).	Maoneng has had consultation with Iluka Pty Ltd. Iluka confirmed by email (Appendix C) that they have been adequately consulted and did not require any more details at this stage.
DRE requires records of future consultation conducted, including any agreements reached between parties, must be documented in full to DRE.	Maoneng is maintaining a consultation log in relation to future consultation between parties (e.g. Iluka) with the DRE. Any agreements reached between parties, will be documented in full to DRE. This requirement has been incorporated into the mitigation measures in Section 3 of this submissions report.
The Proponent is required to conduct detailed and authentic consultation with the intent of reaching collaborative works agreement with Iluka Pty Ltd regarding: • the Sunraysia Solar Farm proposal and intended power transmission line location, • the distribution of heavy mineral sand deposits in the area with respect to sterilisation; • the potential for interference between the solar farm and future (potential) mining operations, • the potential cumulative impact of the Limondale Sun Farm proposal on exploration of EL7626, and • access arrangements for further mineral exploration in EL7626.	Maoneng has had consultation with Iluka Pty Ltd. Iluka confirmed by email (Appendix C) that they have been adequately consulted and did not require any more details at this stage.

2.4.8 Balranald Shire Council

Issue	Response
Potential interactions with other major projects (IIuka Mineral Sands and goFarm)	Maoneng has had consultation with Iluka Pty Ltd. Iluka confirmed by email (Appendix C) that they have been adequately consulted and did not require any more details at this stage.
EIS does not provide a clear strategy to deal with construction worker accommodation	During the construction period, key management personnel would reside in Balranald but the majority of staff/tradespersons are expected to come from neighbouring larger cities such as Swan Hill and Mildura.
EIS does not flag any significant contribution to the local area and suggests that a VPA should be considered given the scale of the project. This could focus on the provision of:	Section 8.7.3 of the EIS includes a safeguard that commits Maoneng to include initiatives to promote the renewable energy within the local community. Maoneng has further consulted and reached an agreement with Balranald Shire Council to support

Issue	Response
1. Funding and provision of information display material for the Balranald Discovery Centre to explain and promote the project. 2. Scholarships for local student support, training and skill development.	the development of the Balranald Discovery Centre and a Scholarship program to be co-administered by the Balranald Central School.

2.4.9 Forestry NSW

Issue	Response
Acknowledgement of the proponent's intention to liaise with FCNSW regarding the process of clearing crown timbered land (CTL). Prior to clearing activities on CTL, FCNSW and the proponent shall arrange a meeting at either the proposed solar farm site or one of FCNSW Western's regional offices (i.e. Dubbo or Deniliquin). FCNSW will assist the proponent in the application of necessary authorities in order to take such timber.	The need to liaise with FCNSW in relation to intention to clear and notification of the FCNSW prior to clearing activities has been incorporated into the mitigation measures in Section 3 of this submissions report.
FCNSW's records indicate that the entirety of Lot 7301/1157986 is held as *Timber Reserve* (TR38825). Both land parcels are described as dual purpose *Timber Reserve* and *Travelling Stock Route* (Reserve 17969)	Noted
As the owner of timber rights on land administered under the *Western Lands Act 1901*, FCNSW must be consulted prior to the establishment of Biobanking Agreements on such lands.	Noted. This has been added as a safeguard in Section 3 of this submissions report.

3 UPDATED MITIGATION MEASURES

This submissions report proposes a number of changes to the safeguards and mitigation measures detailed in the EIS. It is noted that the final detail of the construction and operational management measures will need to reflect the final detailed project design. As many elements of the detailed design will be determined in a competitive tender process, the commitments below are objective-oriented and require consultation, rather than being overly prescriptive at this stage. Some measures are of interest to several agencies and therefore, development of plans in consultation with these agencies is proposed.

Table 3-1 provides the full list of safeguards and mitigation measures and incorporates the changes as a result of the submissions report. Changes have been highlighted in grey.

Table 3-1 Revised safeguards and mitigation measures

No.	Environmental Safeguard	Solar farm		
		C	O	D
Biodiversity				
BIO 1	• Preparation of Flora and Fauna Management Plan (FFMP) that would incorporate mitigation strategies below and a landscaping strategy. The FFMP would form part of the Sunraysia Solar Farm Construction Environmental Management Plan.	**C**		
BIO 2	• Native vegetation to be retained (EEC and trees) would be delineated (fencing or other method), and construction activities would be excluded from these areas. Clearing and construction contractors would be given inductions that make clear the importance of these features.	**C**		
BIO 3	• A 'Clearing and Grubbing Plan' would be developed. This would include; ○ best practice methods for the removal of woody vegetation and non-woody vegetation ○ Where trees are to be retained, an adequate tree protection zone ○ A provision for mulch reuse onsite, particularly to stabilise disturbed areas. Hollow-bearing limbs should be retained on-site as habitat logs. ○ An unexpected threatened species finds procedure	**C**		
BIO 4	• Stockpile and compound sites would be located using the following criteria: ○ Within the Development Envelope. ○ In areas of low ecological conservation significance (i.e. cropped land, and avoiding drip line of native trees).	**C**		
BIO 5	• The location of transmission line towers will be designed to minimise native vegetation clearing	**C**		
BIO 6	• Use non barbed-wire on exterior fencing, unless required for public safety.	**C**		
BIO 7	• Rehabilitation would be undertaken in all areas disturbed during construction. Where plantings are to be carried out they will utilise local native species to increase the diversity of the existing vegetation, as well as to improve the connectivity between patches in the landscape.	**C**		

No.	Environmental Safeguard	Solar farm		
		C	O	D
	• Any supplementary planting within native vegetation must not disturb the existing ecosystem and be with local species.			
BIO 8	• Prepare a weed management plan that; ○ Is consistent with DPI's *Prime Fact 1063 Infrastructure proposals on rural land* (DPI 2013) ○ Allows for management of declared noxious weeds in accordance to the requirements stipulated by the *Noxious Weeds Act 1993* ○ Develops a protocol for weed hygiene in relation to plant, machinery and importation and management of fill	**C**	**O**	
BIO 9	• Vegetation groundcover, particularly beneath the low edge of the panels, would be monitored and any bare areas or erosion addressed (i.e. planting, jute mesh armouring etc.) to resist erosion and weed infestation.		**O**	
BIO 10	• Carry out refuelling of plant and equipment, chemical storage and decanting at least 50 m away from farm dams in impervious bunds. Ensure that dry and wet spill kits are readily available	**C**		
BIO 11	• If night work is unavoidable, ensure lights are directed away from remnant vegetation.	**C**		
BIO 12	• Develop a pest management plan, to cover all pest management issues at the site.	**C**	**O**	
BIO 13	• A Biodiversity Offset Plan must be developed in accordance with the Biodiversity Offset Strategy submitted, and in consultation with OEH. The Biodiversity Offset Plan must be implemented within two years following the start of construction. • As the owner of timber rights on land administered under the *Western Lands Act 1901*, FCNSW must be consulted prior to the establishment of Biobanking Agreements on such lands if these are considered as part of the BOS.	**C**		
BIO 14	• Prior to clearing activities on crown timbered land, FCNSW and the proponent shall arrange a meeting at either the proposed solar farm site or one of FCNSW Western's regional offices (i.e. Dubbo or Deniliquin). FCNSW will assist the proponent in the application of necessary authorities in order to take such timber.	**C**		
BIO 15	• The installation of the security fence must be undertaken so as not to disturb any native vegetation.	**C**		
Aboriginal heritage				
Arch 1	• The proposed works must be designed to avoid the site Sunraysia Solar Open Site 1 as described in the ACHA report.	**C**		
~~Arch 2~~	~~• The development proposal would be able to proceed with no additional archaeological investigations.~~	~~**C**~~		
Arch 3	• If complete avoidance of the recorded sites within the proposed solar farm area (Sunraysia Solar Oven 1 and Sunraysia Solar Oven 2) is not possible, the artefact identified should be collected and moved to a safe area within the	**C**		

No.	Environmental Safeguard	Solar farm		
		C	O	D
	property, as close as possible to their original location, but which will not be subject to ground disturbance. The collection and relocation should be undertaken by representatives of the registered Aboriginal parties prior to construction. A new AHIMS site card will need to be completed identifying the new location of the moved artefacts. The collection and relocation must be undertaken in accordance the requirement 26 of the CoP (OEH 2016a).			

Arch 4	• If Sunraysia Solar Open Site 1 cannot be avoided, further archaeological research ~~should~~ must be undertaken. This would include, but may not be exclusive to:
	  • Detailed program of subsurface investigation
	  • Dating of any in situ deposits
	  • Assessment of significance based on detailed investigation
	  • Dependent on significance, avoidance or salvage (surface and subsurface)
	  • ~~in the form of surface salvage, which should be accompanied by excavations in order to establish the presence or absence sub surface deposits. Surface salvage and excavations would need to be conducted prior to any earthworks taking place. A technical report should be produced describing the surface salvage and excavations methodology and results.~~
		C		

Arch 5	• ~~Sunraysia prepares a Cultural Heritage Management Plan (CHMP) to address the potential for finding additional Aboriginal artefacts during the construction of the Solar Farm. The CHMP will outline an unexpected finds protocol to deal with construction activity. Preparation of the CHMP should be undertaken in consultation with the registered Aboriginal parties.~~
	• A cultural heritage management plan (CHMP) must be prepared in consultation with OEH and registered Aboriginal parties to address contingencies for:
	  • Unanticipated find protocols
	  • Reporting of suspected human remains
	  • ACH component of site induction for employees and contractors
		C		

Arch 6	• In the unlikely event that human remains are discovered during the construction, all work must cease in the immediate vicinity. OEH, the local police and the registered Aboriginal parties should be notified. Further assessment would be undertaken to determine if the remains were Aboriginal or non-Aboriginal.	**C**		
Arch 7	• Further archaeological assessment would be required if the proposal activity extends beyond the area of the current investigation. This would include consultation with the registered Aboriginal parties and may include further field survey. • Any subsequent alterations to the development footprint that are outside the study areas of the ACH assessment and pre-clearance surveys should be assessed in accordance with the	**C**	**O**	**D**

No.	Environmental Safeguard	Solar farm		
		C	O	D
	Due Diligence Code of Practice for the Protection of Aboriginal Objects in NSW.			
Arch 8	• Any Aboriginal Objects located within the activity area discovered during any phase of the project must be reported to OEH in the prescribed format: Aboriginal Heritage Information Management System (AHIMS) site card (s89a).	**C**	**O**	**D**
Arch 9	• AHIMS Aboriginal Site Impact Recording Form (SSD – Part 4) required for any new objects discovered.	**C**	**O**	**D**
Visual				

V 1	• The mitigation measures detailed in the visual impact assessment (NGH Environmental 2016, Appendix E) including the following must be implemented:
	  • Onsite vegetation screening for viewers for which a medium impact is confirmed following construction of the solar farm (refer to verification process below). This would be aimed at 'breaking up' not blocking views of onsite infrastructure.
	  • General methods to reduce visual impact. This would centre on the colour, form and positioning of infrastructure, to reduce the overall visual contrast of the project.
	  • A process for verification of predicted and actual impacts. This would improve the reliability of the measures and provide a trigger to undertake additional mitigation if required.
		C	**O**	**D**

Land use				
~~LU 1~~	~~• Construction and operations personnel would drive carefully and below the designated speed limit, to minimise disturbance to livestock, crops and pasture, and dust generation.~~	~~**C**~~	~~**O**~~	~~**D**~~
LU 2	• ~~The site would be rehabilitated to allow continued agricultural land uses following decommissioning of the Sunraysia SF.~~ The proponent shall prepare a decommissioning management plan with rehabilitation objectives and strategies for returning the land to rangeland agricultural production in consultation with DPI Agriculture (landuse.ag@dpi.nsw.gov.au).			**D**
LU 3	• Prepare a pest and weed management plan to manage the occurrence of noxious weeds and pest species across the site during construction and operation. The plans must be prepared in accordance with the Balranald Weed Management Policy and NSW DPI requirements. • Where possible integrate weed and pest management with adjoining landowners.	**C**	**O**	
LU 4	• Allow continued grazing on the site during operation.		**O**	
LU 5	• The proponent will prepare a plan in consultation with DPI detailing the proposed installation of canals and water reticulation infrastructure to manage rainfall runoff.	**C**		
Soils and water				
SW 1	• An erosion and sediment control plan must be prepared prior to construction and decommissioning phase and any upgrades that may disturb soils and implemented. The plan must be prepared in accordance with:	**C**		**D**

No.	Environmental Safeguard	Solar farm		
		C	O	D
	• Managing Urban Stormwater: Soils and Construction, Volume 1, 4th edition (Landcom 2004), known as 'the Blue Book'. • Volume 2A Installation of Services (DECC 2008a).			
SW 2	• The internal access track network must be built as a priority to minimise soil loss.	**C**		
SW 2	• Groundcover plantings must be placed and maintained below the solar panels and any other disturbed areas to minimise erosion.		**O**	
SW 3	• The proposal site must be monitored following heavy rain or wind events to ensure no erosion and sedimentation has occurred. Any issues recorded must be promptly rectified to prevent any further soil loss.	**C**	**O**	**D**
SW 4	• A Spill Response Plan must be prepared and include measures to: ○ Manage the storage of any potential contaminants onsite ○ Mitigate the effects of soil and water contamination by fuels or other chemicals (including emergency response and EPA notification procedures). ○ Prevent contaminants affecting adjacent pastures and dams.	**C**	**O**	**D**
Transport				
TT 1	~~A traffic control plan must be prepared and approved by RMS prior to construction and decommissioning.~~ A Traffic Management Plan must be prepared in consultation with the relevant road authorities (Council and Roads and Maritime Services) to outline measures to manage traffic related issues associated with the development, particularly during the construction or decommission process. The appointed transport contractor must be involved in the preparation of this plan. The plan must address all light and heavy traffic generation to the development site and detail the potential impacts associated with the development, the mitigation measures to be implemented, and the procedures to monitor and ensure compliance. This plan must address, but not necessarily be limited to the following; i) Require that all vehicular access to the site be via the approved access route. ii) Details of traffic routes to be used by heavy and light vehicles, and any associated impacts and any road-specific mitigation measures. iii) Details of measures to be employed to ensure safety of road users and minimise potential conflict with project generated traffic, iv) Proposed hours for construction activities, as night time construction presents additional traffic related issues to be considered. v) The management and coordination of the movement of vehicles for construction and worker related access to the site and to limit disruption to other motorists, emergency vehicles, school bus timetables and school zone operating times, vi) loads, weights and lengths of haulage and construction related vehicles and the number of movements of such vehicles, vii) procedures for informing the public where any road access will be restricted as a result of the project,	**C**		**D**

No.	Environmental Safeguard	Solar farm		
		C	O	D
	viii) any proposed precautionary measures such as signage to warn road users such as motorists about the construction activities for the project, ix) a Driver Code of Conduct to address such items as; appropriate driver behaviour including adherence to all traffic regulations and speed limits, safe overtaking and maintaining appropriate distances between vehicles, etc and appropriate penalties for infringements of the Code, x) details of procedures for receiving and addressing complaints from the community concerning traffic issues associated with truck movements to and from the site, xi) Construction and operations personnel would drive carefully and below the designated speed limit, to minimise disturbance to livestock, crops and pasture, and dust generation			
TT 2	• Balranald-Tooleybuc Road must be upgraded prior to starting any other works on the proposal site.	**C**		
TT 3	• Ongoing consultation with stakeholders including Roads and Maritime Services, Balranald Council, local landholders and emergency services must be undertaken to inform them of changes to road use and conditions during construction and decommissioning.	**C**		**D**
TT 4	• A direct contact phone number must be provided to all stakeholders to enable any issues or concerns relating to traffic and access to be rapidly identified and addressed.	**C**	**O**	**D**
TT 5	• To minimise traffic impacts, car pooling and buses would be organised to transport personnel to and from the proposal site.	**C**		**D**
TT6	• The Proponent must engage an appropriately qualified person to prepare a Road Dilapidation Report for all road routes to be used during the construction (and decommissioning) activities, in consultation with the relevant road authority (Roads and Maritime Services and Council). This report is to address all road related infrastructure. Reports must be prepared prior commencement of, and after completion of, construction (and decommissioning). Any damage resulting from the construction (or decommissioning) traffic, except that resulting from normal wear and tear, must be repaired at the Proponent's cost. The applicant is accountable for this process, rather than the proposed haulage contractor. Such work shall be undertaken at a time as agreed upon between the Proponent and relevant road authorities.	**C**		**D**
TT7	• Prior to the commencement of construction on-site, the Proponent must undertake all works to upgrade any road, its associated road reserve and any public infrastructure in that road reserve, to a standard suitable for use by heavy vehicles to meet any reasonable requirements that may be specified by the relevant roads authority. The design and specifications, and construction, of these works must be completed and certified by an appropriately qualified person to be to a standard to accommodate the traffic generating requirements of the project. On Classified Roads the geometric road design and pavement design must be to the satisfaction of the Roads and Maritime Services.	**C**		
TT8	• As a minimum the intersection of the access road with Yanga Way is to be constructed and the roadside maintained so as to provide the required Safe Intersection Sight Distance (SISD) with a reaction time of 2.5 seconds in either direction in accordance with the	**C**		

No.	Environmental Safeguard	Solar farm		
		C	O	D
	Austroads Publications as amended by the supplements adopted by Roads and Maritime Services for the posted speed limit. Compliance with this requirement is to be certified by an appropriately qualified person prior to construction of the vehicular access.			
TT9	• As a minimum the intersection of the access road with Yanga Way is to be constructed with a Channelised Right Turn -Short (CHR(s)) and Basic Left Turn (BAL) intersection treatment in accordance with the Austroads Guide to Road Design as amended by the supplements adopted by Roads and Maritime Services for the posted speed limit on Yanga Way. The intersection is to be constructed to the standards required for an approved road train route.	**C**		
TT10	• As a minimum the access road is to be constructed to provide for 2 way movement and be sealed for at least 50 metres from its intersection with Yanga Way. The intersection shall be designed and constructed so that vehicles turning between Yanga Way and the access road are not required to cross to the opposing travel lane in order to perform a turn manoeuvre. The intersection shall be line marked in accordance with Australian standards.	**C**		
TT11	• A management plan to provide measures to suppress dust generation from the development site and the transportation route shall be prepared and implemented to the satisfaction of Council and Roads and Maritime Services.	**C**	**O**	**D**
TT12	• No external lighting of any infrastructure associated with the project is permitted at night that may cause distraction to road users other than low intensity security lighting.	**C**	**O**	**D**
TT13	• Reflection of sunlight from the solar panels (glare) would not cause a nuisance, disturbance or hazard to the travelling public. In the event of glare from the solar plant being evident from a public road, the proponent shall immediately implement glare mitigation measures such as construction of a barrier (e.g. fence) or other approved device to remove any nuisance, distraction and/or hazard caused as a result of glare from the solar panels.		**O**	
TT14	• The intersection of the access roadway and Yanga Way is to be designed and constructed so as not to interfere with the capacity of the current roadside drainage network and to prevent water from proceeding onto, or ponding within, the carriageway of Yanga Way. If a culvert is to be installed and is to be located within the required clear zone of Yanga Way for the posted speed zone it is to be constructed with a traversable type headwall.	**C**		
TT15	• Any substantial damage or disturbance to the road reserve of Yanga Way is to be restored to match surrounding landform in accordance with Council requirements.	**C**	**O**	**D**
TT16	• Yanga Way is part of the State Road network. For works on the State Road network the developer is required to enter into a Works Authorisation Deed (WAD) with Roads and Maritime Services before finalising the design or undertaking any construction work within or connecting to the road reserve. The Works Authorisation Deed documentation is to be submitted for each specific change to the state road network for assessment and approval by Roads and Maritime Services prior to commencement of any works within the road reserve. The applicant is to contact	**C**		

No.	Environmental Safeguard	Solar farm		
		C	O	D
	the Land Use Manager for the South West Region on Ph. 02 69236611 for further detail.			
TT17	• Any works within the road reserve of Yanga Way requires approval under Section 138 of the Roads Act, 1993 from the road authority (Council) and concurrence from Roads and Maritime Services prior to commencement of any such works. The developer is responsible for all public utility adjustment/relocation works, necessitated by the development and as required by the various public utility authorities and/or their agents.	**C**		
TT18	• All works associated with the project shall be at no cost to the Roads and Maritime Services.	**C**	**O**	**D**
TT19	• ensure that access to the Cut Line is maintained at all times.	**C**	**O**	**D**
Hazards				
EMF 1	• All electrical equipment would be designed in accordance with relevant codes and industry best practice standards in Australia.	**C**		
Aviation				
AV 1	• The materials and colour of onsite infrastructure will, where practical, be non-reflective and in keeping with the materials and colouring of the landscape.	**C**		
Bushfire				
BF 1	• All electrical equipment would be designed in accordance with all applicable codes and industry best practice standards in Australia.	**C**		
BF 2	• Buildings would comply with the Building Code of Australia (BCA).	**C**		
BF 3	• Safety management processes to highlight to all staff and contractors through an induction process the potential hazards of activities onsite. This should include preparation and compliance with job-specific WMSs and emergency preparation/response drills.	**C**	**O**	**D**
BF 4	• The NSW RFS be provided with a contact point for the proposal, during construction and operation.	**C**	**O**	**D**
BF 5	• Designation of a Sunraysia onsite safety representative responsible for ensuring implementation of safeguards. This representative would also regularly consult with the local NSW RFS to ensure familiarity with the Sunraysia Project and assist the RFS and emergency services as much as possible if there is a fire on-site during construction.	**C**	**O**	**D**
BF 6	• Basic training of all staff in the use of fire-fighting equipment.	**C**	**O**	**D**
BF 7	• Appropriate fire-fighting equipment would be held on site to respond to any fires that may occur at the site during construction of the Sunraysia Project. This equipment will include fire extinguishers, a 1000 litre water cart retained on site as a precautionary basis, particularly during blasting and welding operations. Equipment lists would be detailed in Work Method Statements (WMS's).	**C**		**D**
BF 8	• Slashing of vegetation on construction site before construction starts and as required to manage fuel loads.	**C**	**O**	**D**
BF 9	• Ensure bulk matter fuel loads across the site are monitored during spring and that grazing pressure is available over spring		**O**	

No.	Environmental Safeguard	Solar farm		
		C	O	D
	and summer to minimise vegetation bulk and fuel loads prior to the bushfire danger period.			
BF 10	• 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.	**C**	**O**	**D**
BF 11	• Maintain a permanent source of water on site for firefighting purposes during operation. The volume and location where water should be kept would be finalised in consultation with NSW RFS.	**C**	**O**	**D**
BF 12	• The use of a Hot Works Permit system to ensure a number of pre-requisites are satisfied prior to works commencing. Fire extinguishers would be present during all hot works.	**C**	**O**	
BF 13	• Where possible restrict the performance of Hot Works to specific areas (such as the Construction Compound temporary workshop areas).	**C**	**O**	
BF 14	• The detailed design of the facility will be maintained to Asset Protection Zone standards as outlined within section 4.1.3 and Appendix 5 of 'Planning for Bush Fire Protection 2006' and the NSW Rural Fire Service's document 'Standards for asset protection zones'.	**C**	**O**	
BF 15	• The Project Environmental Management Plan should include an Emergency / Bushfire Management Plan.	**C**	**O**	**D**
Resource use and waste generation				
RW 1	• Waste and energy management would be incorporated into the Construction Environmental Waste Management Plan, this would cover the risks associated with construction of the WRSF.	**C**		
RW 2	• If required, the proponent must obtain relevant licensing under the *Water Management Act 2000* before commencing any works which intercept or extract groundwater or surface water.	**C**	**O**	**D**
Air Quality				

AQ 1	• The CEMP would include protocols to minimise and control dust. Measures may include:
	  • Use of a water cart (truck) to wet the access track and exposed dusty surfaces as appropriate to the conditions of the site.
	  • Stabilisation of any disturbed areas that expose soil and increase erosion risks.
		C		**D**

AQ 2	• Works must cease if airborne dust cannot be controlled.	**C**		**D**
AQ 3	• Groundcover must be maintained to minimise dust from wind erosion.		**O**	
AQ 4	• Construction plant and vehicles must be maintained according to manufacturer's requirements.	**C**		**D**
AQ 5	• Alternative sources of energy (solar panels) must be considered for any temporary compound sites.	**C**		**D**
Socio-economic				
SOE 1	• Community consultation will be undertaken in accordance with the Sunraysia Solar Farm Community Consultation Plan (NGH Environmental 2016).	**C**	**O**	**D**

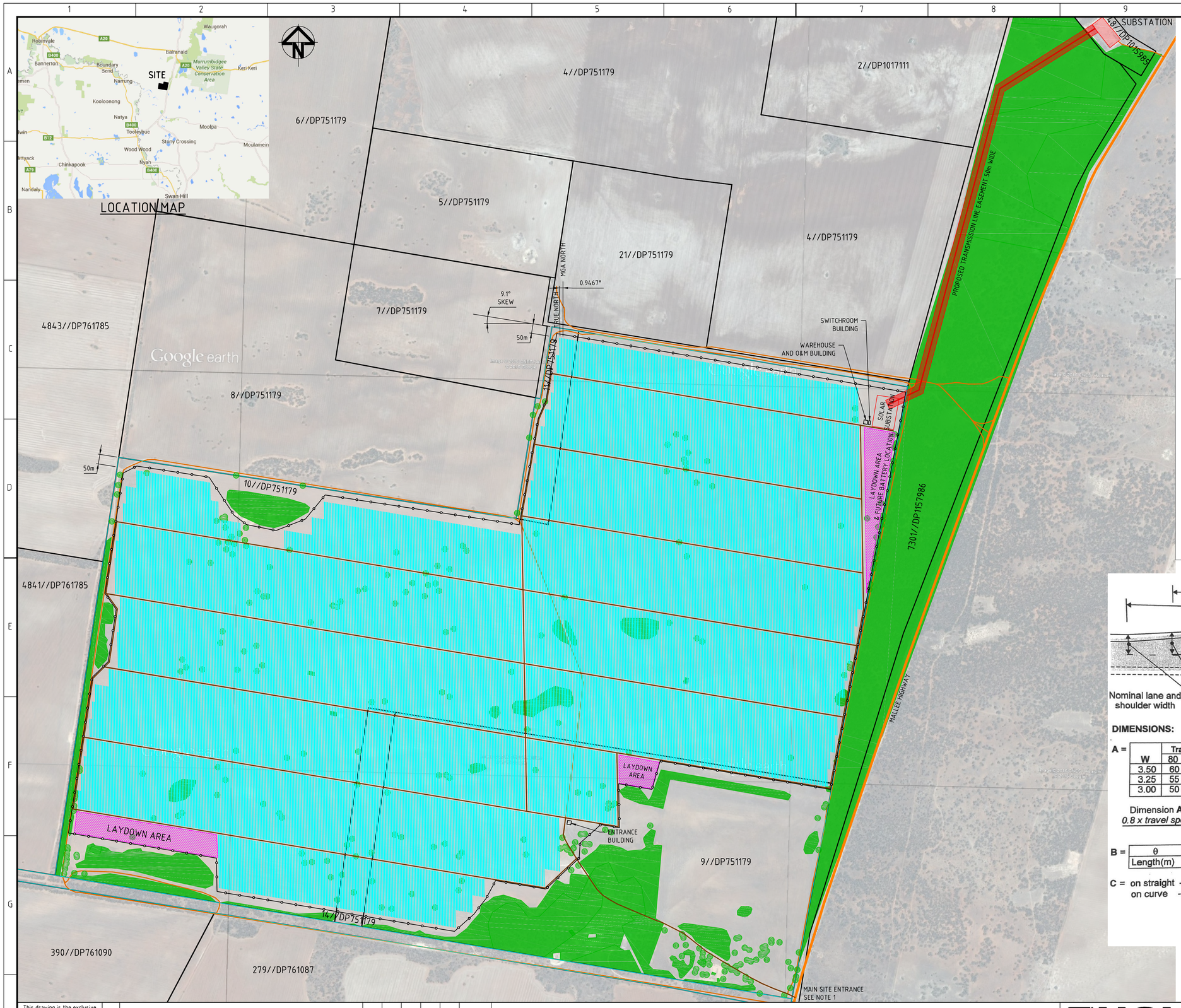
No.	Environmental Safeguard	Solar farm		
		C	O	D
SOE 2	• The workforce must be engaged locally where feasible to minimise pressures on local accommodation. • Temporary accommodation at the proposal site through temporary demountables should be considered during the peak construction period to minimise pressure on available accommodation.	**C**		**D**

SOE 3	• Maoneng to commit to initiatives to promote the renewable energy sector within the local community. Initiatives could include:
	  • expanding the existing Discovery Centre with elements of Renewable Energy Integration.
	  • supporting the Balranald Central School by providing scholarship support for students.
	  • assisting in the training and skilling of work related to renewable energy.
		C	**O**	**D**

SO 4	• Records of consultation conducted, including any agreements reached between parties (e.g. Iluka Pty Ltd), must be documented in full to DRE.	**C**	**O**	**D**
Cumulative impact				
C 1	• All construction management plans prepared for the proposal must take into consideration the Limondale Sun Farm project should both projects occur concurrently.	**C**		

APPENDIX A INFRASTRUCTURE PLAN

LOCATION MAP



LEGEND:

- NEXTRACKER TRACKER
- NEW ACCESS ROAD
- FENCE
- LOT BOUNDARIES
- EXISTING DIRT ROAD
- EXISTING MAIN ROAD
- VEGETATION
- DAM

PROJECT DESCRIPTION:

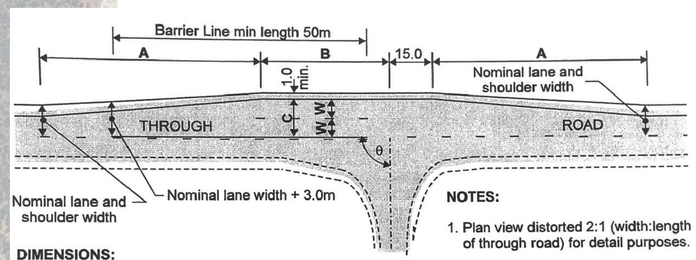
LATITUDE	34°48'4.91"S
LONGITUDE	143°30'9.94"E

SOLAR PV SYSTEM:

AZIMUTH	0°
TRACKER TYPE	NEXTRACKER AT 8m CENTRES
TOTAL CAPACITY	200MWac
FENCE LENGTH	14237m
4m ROAD LENGTH	31700m.

NOTES:

1 INTERSECTION AT THE MAIN SITE ENTRANCE TO BE UPGRADED TO RTA ROAD DESIGN GUIDE TYPE 'AUR' TO SUIT 100km/h TRAVEL SPEED. REFER FIGURE 4.8.24
2. BUILDING MAXIMUM HEIGHT OF 8.5m



DIMENSIONS:

A =

W	Travel Speed (km/h) 80	90	100	110
3.50	60	70	75	85
3.25	55	65	70	80
3.00	50	60	65	75

Dimension **A** based on formula:

$$\frac{0.8 \times \text{travel speed(km/h)} \times \text{Lane Width(W)}}{3.6}$$

B =

θ	70°	90°	110°
Length(m)	40	35	30

C = on straight - 2 x **W** (nominal lane width).
on curve - 2 x **W** (nominal lane width) + corresponding widening for curve radius; refer Section 2 - **Table 2.2.2**
*(See additional notes on **Figure 4.5.3**)*

NOTES:

1. Plan view distorted 2:1 (width:length of through road) for detail purposes.
2. Broken separation lines where shown assume overtaking sight distance available. If not, barrier line should be used.
3. 1.0m shoulder should be widened adjacent to safety barrier or when catering for bicycles
4. Layout to be linemarked as shown. **Do not use continuity lines**

Figure 4.8.24 - Type "AUR" Right Turn Treatment
NOT TO SCALE

0 200 400 600 800 1000m
1 : 10000

AMDT	AMENDMENT DETAILS	DESIGN	CHK'D	DRAWN	CHK'D	APP'D	DATE
E	ALL SURROUNDING LOT BOUDARIES ADDED FROM NSW GLOBE	AS	MS	AS	-	-	12/04/2017
D	BOUDARIES 2//DP1017111 (Neighbour) AND 4//DP751179 (Neighbour) ADDED FROM NSW GLOBE	AS	MS	AS	-	-	03/04/2017
C	PROPOSED TRANSMISSION LINE EASEMENT MOVED EAST BY 35m TO AVOID NEIGHBOURING PROPERTY	AS	MS	AS	-	-	02/03/2017
B	FENCE REVISED AND INTERSECTION DETAIL UPDATED.	AS	MS	AS	-	-	09/01/2017
A	ORIGINAL ISSUE	AS	MS	AS	-	-	19/10/2016

Plot Date: 12/04/17 - 13:31 Cad File: I:\tenders_TC-10962 Maoneng - Balranald Sunraysia TKLP Solar Farm\07 Drawings\1Primary\TC-10962-DP1-002 - Balranald DA Site Layout.dwg

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12 APR 2017
FOR INFORMATION

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DESIGNED	MS
CHECKED	GS
DRAWN	AS
CHECKED	-
APPROVED	-
A1	SCALE @ A1 1:10000

UGL

TC-10962 MAONENG
BALRANALD SUNRAYSIA TKLP SOLAR FARM
OVERALL SITE
NEXTRACKER LAYOUT
PLAN

UGL DRAWING No. TC-10962-DP1-002 | SHEET - | AMDT E

CONFIRM SCALE 100mm ON A1 ORIGINAL

APPENDIX B SUBMISSIONS

Submission to the Sunraysia solar farm (on exhibition)

I write in support of the Sunraysia solar farm.

As a trenchant opponent of wind farms, especially our local Jupiter wind farm, also currently on exhibition, I find myself favourably drawn to this proposal.

The major reasons for my support, of the solar option in general and for this proposal in particular, are:

In NSW, the sun shines everywhere. Site selection is therefore much more flexible. You are only governed by a reasonable proximity to the grid.

Solar can't be blamed for a "South Australian like" grid collapse between dusk and dawn. In that period, they are predictably reliable. Wind farms never are. (although both suffer from unpredictability and intermittency during daylight hours on cloudy and still days)

The Planning process is much simplified. The SEARs were issued on June 17th, 2016. Epyc, the Jupiter developer, has been wasting everyone's time for over three years. The Sunraysia Solar Farm caught up in 6 months.
Solar farms support the political desire to fast-track renewables projects.
There will be fewer submissions and even fewer submissions in opposition.

A solar farm proposal is unlikely to generate reams of correspondence to the Secretary and departmental management and planners.

The Department's involvement with the application will be most likely finished at approval stage. The Department and its management won't be drawn into appeals before the Land and Environment Court. Nor into ongoing scuffles when the wind farm breaches its terms of consent.

No "Solar Farm Guidelines", draft or otherwise, are required.

Fewer ongoing modifications should be required. They may even be accomplished by "administrative action" as opposition will be light or non-existent.

There should be less stress on departmental planners and management. Those Jupiter people, who you could be saddled with for life, will be silent, or heaven forbid, on your side.
The same goes for politicians.

The Sunraysia solar farm has 3 non-associated residences within 5 kms (compared to our 273), only one under 2kms (compared to our 63). It proves that renewable energy projects can be built in the right place. There will be no Residents Against Sunraysia Solar Farm (RASSF). If there is, he or she will be lonely.

The maximum height of infrastructure on the farm itself will be 8 metres (just like a large rural shed). The solar panels themselves will be in the 3 to 4 metre range. Solar farms don't need to be closer to the sun, so can stay off the ridges and be built in less conspicuous areas. They lend themselves, technically to a flat and boring landscape. Even if there are a handful of residences around a solar farm the Visual Impact will be at a much lower level.

Vegetation mitigation will be where it should be, next to the development, not up against the walls of the one visually impacted residence, with all its attendant issues, not the least being bushfire danger. If the solar farm burns, it will be insured. There will be no family possessions to lose. There is no emotion if it goes. No-one is going to say, "we lost our beautiful solar farm in the fire".

Aerial firefighting is not disrupted. Neither is general or agricultural aviation.

A solar farm is highly reversible on decommissioning. It doesn't leave a hundred thousand tonnes of concrete just under the surface. There also may be some scrap value. Not all 750000 solar panels will be defective. Not all will be 30 years old.
There is no noise during operations, therefore no ongoing arguments and litigation about excessive noise.
There will be no barotrauma, because solar farms don't move.
The odd passing pelican may come in for a landing on this glass lake, but none of our precious wedgetails will be sliced and diced.

Solar farms last longer and are easier, simpler and cheaper to build and maintain. A defective panel is much easier to fix or replace than a turbine.

Traffic and transport is much simplified. The largest sections of plant will be the skids that hold the localized transformers.

There will be no need for a Planning Assessment Commission meeting as this solar farm is unlikely to attract 25 objections.
There is no need for a Community Consultative Committee.
There is no community disruption. There may well be community acceptance

A solar farm will actually create local jobs. You can't wash panels from a control room in Dusseldorf.
There is also a lot of local skilled labor, typically available in a rural area, required during construction.
Of course there is no Community Enhancement Fund as there is no need to bribe the local populace. There may be one Benefit Sharing Agreement.

There will never be the need for a Senate enquiry on solar farms.
There will never be the need for a Solar Farm Commissioner.
There will be no political pain, as with a wind farm, only gain. Solar renewables will not influence local election outcomes.

The renewables industry has already decided. Wind farm developers like Epuron and Infigen are proposing solar projects as alternatives.
Solar farms are much more acceptable to the local communities. They don't divide them.
The economic benefits are more rational. Local property values are not destroyed.

The Sunraysia developer seems to know what they are doing, having developed the recently commissioned Mugga Lane Solar Park.

This of course is of no help to Epyc. If they switched overnight to a solar proposal, it would still be in the wrong place.

Long before oil became a dirty word, Castrol ran a hugely successful series of advertisements based on the theme of differentiation; "Oils aint oils, Sol"

Similarly, renewables aint renewables.

Therefore I support this solar farm, but not the maniacal economy destroying rush to renewables whilst the three biggest emitters, China, India and the US laugh at us.
I support it, because the only alternative renewables solution on offer, a wind farm, is demonstrably much worse.

See
http://majorprojects.planning.nsw.gov.au/?action=view_submission&job_id=7680&submission_id=192571

'Sunraysia Solar Farm is a sustainable ecological development that addresses the need to mitigate the risk of climate change .
It is estimate that it will take 12 months to complete the project and it will have a 30 year lifespan .It is clean energy . There are no carbon emissions , It will assist in achieving the Renewable energy target and our Paris Climate Agreement target . As green house gasses are primarily due to the burning fossil fuels. This provides 80 % of the power in NSW.'

Planning Services
Resource Assessments
Contact: Rose-Anne Hawkeswood
Phone: 9274 6324
Email: rose-anne.hawkeswood@planning.nsw.gov.au

Mr Qiao Han
Group Vice President
Maoneng Australia
Level 4, 5 Talavera Rd
Macquarie Park NSW 2112

Dear Mr Han

Sunraysia Solar Farm (SSD 7680)

The public exhibition of the Environmental Impact Statement (EIS) for the Sunraysia Solar Project concluded on Sunday 5 March 2017.

The Secretary requests that you prepare and submit a report detailing your responses to the issues raised in submissions. The submissions can be viewed on the Department of Planning and Environment's website at www.majorprojects.planning.nsw.gov.au.

Please ensure that you respond to the full range of matters and recommendations raised in submissions.

In addition, the Department requests that you:

- ensure that vegetation clearing accurately accounts for the relocation of the transmission line easement as shown in the revised constraints map provided to the Department on 2 March 2017; and
- provide a revised map infrastructure plan (Appendix B) showing the cadastral boundaries of the solar farm site and neighbouring properties.

Please provide your response to the Department by **Friday 14 April 2017**.

If you wish to discuss this matter, please contact Rose-Anne Hawkeswood on 9274 6324.

Yours sincerely,

16/3/17

Clay Preshaws
A/Director
Resource Assessments
as nominee of the Secretary

NSW GOVERNMENT | Office of Environment & Heritage

Your reference: SSD 7680
Our reference: DOC17/91146
Contact: Miranda Kerr
Ph: (02) 6022 0607

Ms Rose-Anne Hawkeswood
Resource Assessments
Department of Planning & Environment
GPO Box 39
SYDNEY NSW 2001

Dear Ms Hawkeswood

RE: Sunraysia Solar Farm, Balranald LGA - Environmental Impact Statement (SSD 7680)

I refer to your email dated 3 February 2017 seeking comment from the Office and Environment and Heritage (OEH) on the Environmental Impact Statement (EIS) for the Sunraysia Solar Farm (SSD 7680). We have reviewed the information provided against our requirements sent to the Department of Planning and Environment on 6 June 2017.

OEH considers that the EIS **does not** meet the environmental assessment requirements with respect to biodiversity. We recommend that additional information is provided by the proponent before the development is approved. Detailed comments regarding biodiversity assessment are provided in **Attachment A.**

The assessment of the proposed development, apart from some components relating to paddock trees, is appropriate and conforms with requirements of the Framework for Biodiversity Assessment (FBA). However, the minimum requirements for the Biodiversity Offset Strategy (BOS) have not been met. A BOS should be submitted with the Biodiversity Assessment Report (BAR), and include assessment of the number and type of credits that may be created at the offset site (FBA Section 12, page 47). While an area of potential offset has been identified, there is insufficient information to determine whether this will meet the offset needs of the proposal.

Recommended conditions of development consent for Aboriginal cultural heritage (ACH) are provided in **Attachment A**. All plans required as a Condition of Approval that relate to ACH should be developed in consultation with OEH, to ensure that issues identified in this submission are adequately addressed.

If you have any questions regarding this matter please contact Miranda Kerr on 6022 0607 or email miranda.kerr@environment.nsw.gov.au.

Yours sincerely

P.E 3/3/17

PETER EWIN
Senior Team Leader Planning
South West Region
Regional Operations Group
Office of Environment & Heritage

Enclosure Attachment A – Detailed comments for the Sunraysia Solar Farm, Balranald LGA - Environmental Impact Statement (SSD 7680)

PO Box 544 Albury NSW 2640
Second Floor, Government Offices
512 Dean Street Albury NSW 2640
Tel: (02) 6022 0624 Fax: (02) 6022 0610
ABN 30 841 387 271
www.environment.nsw.gov.au

ATTACHMENT A – Detailed comments for Sunraysia Solar Farm, Balranald, Environmental Impact Statement (SSD_7680)

Aboriginal cultural heritage

The ACH component of the EIS (Sections 7.2 and Appendix G) has been undertaken in accordance with the *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales* (OEH2010a). The Aboriginal component of the community engagement strategy (Sections 5.2 and Appendix H and I) substantively complies with the *Aboriginal Cultural Heritage Consultation Requirements for Proponents* (OEH 2010b).

Overall, the assessment of ACH is sound. In summary,

- Consultation with Registered Aboriginal Parties has been undertaken in accordance with OEH (2010b);
- The archaeological assessment was undertaken in accordance with OEH (2010a);
- The report documenting outcomes of consultation and assessment has been produced in accordance OEH;
- Sunraysia Open Site 1 (AHIMS 47-6-0813) was located during field assessment and the powerline was realigned to avoid the object;
- The assessment considers salvage and relocation of movable heritage components of site Sunraysia Solar Oven 1; and
- The project appropriately considers the principles of Ecologically Sustainable Development and has applied them appropriately in relation to ACH.

Survey coverage as documented in Barber *et al.* 2016 was appropriate for intercepting ACH within the study area, which included:

Sunraysia Solar Open Site 1	Hearth/Artefact scatter	Moderate scientific/High social
Sunraysia Solar Open Site 2	Hearth	Low scientific
Sunraysia Solar Open Site 2	Hearth	Low scientific

The study acknowledges that there is a probability that further ACH will be present within the area, however, due to land use history, these are unlikely to be uncompromised *in situ* deposits.

It is acknowledged that the Sunraysia Solar Farm project qualifies as a SSD under the *Environmental Planning and Assessment Act* 1979 (EP&A Act). As such the project does not require an Aboriginal Heritage Impact Permit (AHIP) under s90 of the *National Parks and Wildlife Act* 1974 (NP&W Act). This is the only section of the NP&W Act that is switched off, all other aspects of Part 6 of the Act are still required to be adhered too.

Based on consideration of the above, we recommend the following conditions of development consent:

- Any Aboriginal Objects located within the activity area discovered during any phase of the project must be reported to OEH in the prescribed format: Aboriginal Heritage Information Management System (AHIMS) site card (s89A).
- AHIMS Aboriginal Site Impact Recording Form (SSD – Part 4) required for any new objects discovered and also existing sites:
    - Sunraysia Solar Oven 1 (AHIMS 47-6-0814)
    - Sunraysia Solar Oven 2 (AHIMS 47-6-0815)
- Sunraysia Solar Oven 1 includes lithic artefact component. Collection and relocation of this element is required to be undertaken prior to the construction phase. This should be undertaken in accordance with recommendation 3 (Barber *et al.* 2016: 44) and Requirement 26 of the CoP (OEH 2010a)
- As per recommendation 4 (Barber *et al.* 2016: 44) the proposed powerline alignment identified and mapped to avoid Sunraysia Solar Open Site 1 is required to be used. If the former easement is adopted, and the total avoidance of AHIMS 47-6-0813 is not achievable,

then further archaeological investigation must occur. This would include, but may not be exclusive too:

- Detailed program of subsurface investigation;
- Dating of any in situ deposts;
- Assessment of significance based on detailed investigation; and
- Dependent on significance, avoidance or salvage (surface and subsurface).

- The proponent is to prepare a Cultural Heritage Management Plan (CHMP) in consultation with OEH to address contingencies for:
  - Unanticipated finds protocols;
  - Reporting of suspected human remains; and
  - ACH component of site induction for employees and contractors.
- Any subsequent alterations to the development footprint that are outside the study areas of the ACH assessment and pre-clearance surveys should be assessed in accordance with the Due Diligence Code of Practice for the Protection of Aboriginal Objects in New South Wales.

Biodiversity

The Biodiversity Assessment Report (BAR) does not meet the requirements for biodiversity assessment specified in the Framework for Biodiversity Assessment (FBA). We require additional information to assess if unavoidable impacts to biodiversity, including threatened entities, can be adequately offset.

Spatial data requirements for the FBA have not been fully met. Appendix 7 of the FBA lists the information, maps and data that are expected to submitted with the BAR. Our EIS review would have been greatly assisted by having a spatial representation of the construction and operational footprint.

Operational footprint

We understand that the site access and internal tracks will be determined during the detailed design phase. However, any additional vegetation clearing to upgrade existing roads from one to two lanes needs to be specified and assessed for impacts to threatened species and communities. It is unclear if the vegetation clearing and soil disturbance for construction of the perimeter security fence has been included in the impact assessment. The width of the cleared corridor required for the proposed 2.3 km transmission line should also be specified in the EIS or the BAR.

3.1.1 Vegetation Communities

The vegetation mapping and classification appear to be well documented. We recommend checking the extent of the patches of PCT 170 'Chenopod sandplain mallee woodland' to the west of the central (north-south) vehicle track, at the approximate coordinates Easting 728201 Northing 6145470 (GDA94, Zone 54). The area of vegetation mapped in the EIS appears to be around two hectares smaller than vegetation evident on the most recent aerial imagery available to OEH.

4.3.2 Targeted Surveys

Paddock Trees

The recording and assessment of paddock trees and hollows is unclear. We require additional information about how many trees are within area mapped as non-native vegetation (cropping), and details about the calculations. The BAR should include a better explanation for why 41 of the paddock trees were inaccessible during the field survey.

We acknowledge that the FBA does not adequately explain how paddock trees should be assessed. Advice from the OEH BioBanking Team on other SSD projects that use the FBA is that the assessment should be undertaken with the paddock tree calculator, which is available from the OEH website (www.environment.nsw.gov.au/biobanking/vegbenchmarkdatabase.htm). Further details can be found in Appendix 3 of the BBAM & Credit Calculator Ops Manual (OEH 2009), accessed through a link on that website.

5.1.2 Construction Phase

OEH generally support the proposed measures to minimise clearance of habitat for construction in Table 5-2 (page 46). We recommend modifying the fifth measure, which proposes mulching native trees that have been removed and applying the mulch for site stabilisation. Hollow-bearing limbs should be retained on-site as habitat logs.

Vegetation screening appears to be proposed in areas that support existing native vegetation. Any supplementary planting within native vegetation must not disturb the existing ecosystem and be with local species. A landscaping strategy should be included with the flora and fauna management plan proposed in Table 5.2.

Biodiversity Offset Strategy (BAR, page 77)

The minimum requirements for the Biodiversity Offset Strategy (BOS) have not been met. A BOS should be submitted with the BAR, and include assessment of the number and type of credits that may be created at the offset site (FBA Section 12, page 47).

The BAR identifies a potential offset area on the proposal site, and states that the BOS will be developed post-approval. We do not consider that the approach proposed on page 77 will provide certainty that impacts associated with the approval will be adequately offset. We recommend that the areas of vegetation proposed as offset be assessed using the FBA to generate a credit profile to determine if the areas identified are adequate to offset the impacts of the proposal. Depending on the outcomes of this assessment we can then determine if additional offset is required or if other measures allowed under the Offsets Policy for Major Projects are appropriate.

References

Barber M, Ruhl J & Bradley K (2016) *Aboriginal cultural heritage assessment: Sunraysia Solar Farm, Balranald.* Unpublished report produced by NGH Environmental for Sunraysia Solar Farm Two Pty Ltd, Balranald, NSW.

NGH (2017) *Environmental Impact Statement: Sunraysia Solar Farm, Balranald.* EIS produced by NGH Environmental for Sunraysia Solar Farm Two Pty Ltd, Balranald, NSW.

OEH (2009) *BioBanking Assessment Methodology and Credit Calculator Operational Manual.* Department of Environment and Climate Change (NSW)

OEH (2010a) *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales.* Office of Environment and Heritage, Sydney.

OEH (2010b) *Aboriginal Cultural Heritage Consultation Requirements for Proponents.* Office of Environment and Heritage, Sydney.

OEH (2010c) *Due Diligence Code of Practice for the Protection of Aboriginal Objects in New South Wales.* Office of Environment and Heritage, Sydney.

OEH (2010d) *Guide to investigating, assessing and reporting on Aboriginal cultural heritage in New South Wales*, Sydney.

NSW EPA

Our Ref EF13/5566; DOC17/99281-12
Sender's Ref SSD No 7680

The Senior Planning Officer
Resource Assessments
Department of Planning and Environment
GPO Box 39
SYDNEY NSW 2001

Dear Ms Hawkeswood

Re Sunraysia solar farm project – SSD No 7680

I refer to your electronic mail dated 3 February 2017 to the Environment Protection Authority (EPA) requesting our comments on the Environmental Impact Statement prepared for the proposed 200 megawatt solar photovoltaic plant to be located on the Tooleybuc-Balranald Road about 17 kilometres south of Balranald.

The EPA has responsibilities for pollution control and environmental management for scheduled activities under the *Protection of the Environment Operations Act 1979*. Based on the information provided the proposed activity is not a scheduled activity under the Act and the proposed solar farm does not require an Environment Protection Licence. On this basis the EPA has no further comments to make in relation to this proposal.

If you have any further enquiries about this matter please contact Jason Price by telephoning 02 6969 0700.

Yours sincerely

28.2.2017

CRAIG BRETHERTON
Manager Regional Operations South West
Environment Protection Authority

PO Box 397 Griffith NSW 2680
Suite 7-9 Level 1 Griffith City Plaza 130-140 Banna Avenue Griffith
Tel: (02) 6969 0700 Fax: (02) 6969 0710
ABN 43 692 285 758
www.epa.nsw.gov.au

Department of Primary Industries

OUT17/9276

Ms Rose-Anne Hawkeswood
Resource Assessments
NSW Department of Planning and Environment
GPO Box 39
SYDNEY NSW 2001

Rose-anne.hawkeswood@planning.nsw.gov.au

Dear Ms Hawkeswood

Sunraysia Solar Farm (SSD 7680)
Comment on the Environmental Impact Statement (EIS)

I refer to your email of 3 February 2017 to the Department of Primary Industries (DPI) in respect to the above matter. Comment has been sought from relevant divisions of DPI. Views were also sought from NSW Department of Industry - Lands that are now a division of the broader Department and no longer within NSW DPI.
Any further referrals to DPI can be sent by email to landuse.enquiries@dpi.nsw.gov.au.

DPI has reviewed the EIS and provides the following recommendations:

- The Project Environmental Management Plan should include an Emergency / Bushfire Management Plan based on the safeguards documented in the EIS.
- The proponent should confirm that the landholder has an agreement with the proponent to cover: site and water resource access, operational and farming protocols and risk management, timing of construction, decommissioning and rehabilitation measures.
- The proponent should provide a concept map detailing the proposed installation of canals and water reticulation infrastructure to manage rainfall runoff to enable proper assessment.
- The EIS has identified a number of potential sources for water demand for the project during and post construction, but has not provided an assessment of the security, potential impacts and adequacy of existing water licenses. The proponent should assess and confirm these details prior to project approval to understand the water supply risks and to ensure any requirement for additional licensing is identified early and WMA approvals can be excluded where appropriate under Section 89J of the EP&A Act.
- The proponent should confirm whether 3 dams identified in the EIS within the footprint of the proposed solar arrays are to be removed. If so, an impact assessment should be undertaken.
- The EIS identifies a reserve to be established for ‘Roadway’. Appropriate action relating to this road would be to make Application for Closure and Subsequent Disposal.

- The proponent must obtain relevant licensing under the *Water Management Act 2000* before commencing any works which intercept or extract groundwater or surface water.
- Any approval for the project should include the following Condition of Consent:
    - The proponent shall prepare a decommissioning management plan with rehabilitation objectives and strategies for returning the land to rangeland agricultural production in consultation with DPI Agriculture (landuse.ag@dpi.nsw.gov.au).

Yours sincerely

Mitchell Isaacs
Director, Planning Policy & Assessment Advice
1 March 2017

DPI appreciates your help to improve our advice to you. Please complete this three minute survey about the advice we have provided to you, here:
https://goo.gl/o8TXWz

All communications to be addressed to:
Headquarters
15 Carter Street
LIDCOME NSW 2141

Headquarters
Locked Bag 17
GRANVILLE NSW 2142

Telephone: 1300 NSW RFS
e-mail: csc@rfs.nsw.gov.au

Facsimile: 8741 5433

Department of Planning and Environment
GPO Box 39
SYDNEY NSW 2001

Your Ref: SSD 7680
Our Ref: D17/454

ATTENTION: Rose-Anne Hawkeswood

22 February 2017

Dear Sir/Madam,

Request for Comment for Sunraysia Solar Farm Project Exhibition

I refer to your email dated 10 February 2017 inviting comment on the Exhibition of the Environmental Impact Statement for the above State Significant Development.

1. The NSW Rural Fire Service advises that site proposed for the extent of solar arrays and associated infrastructure should be maintained to Asset Protection Zone standards as outlined within section 4.1.3 and Appendix 5 of 'Planning for Bush Fire Protection 2006' and the NSW Rural Fire Service's document 'Standards for asset protection zones'.

2. The NSW Rural Fire Service advises that the development has in place suitable fire mitigation measures to ensure that a fire occurring within the site cannot escape the site.

For any enquiries regarding this correspondence please contact Deborah Dawson on (02) 4472 0600.

Yours faithfully,

Nika Fomin
Manager Planning and Environment Services East

The RFS has made getting information easier. For information on Planning for Bush Fire Protection 2006, visit the RFS web page at www.rfs.nsw.gov.au and search under Planning for Bush Fire Protection 2006.

Transport
Roads & Maritime
Services

3 March 2017

SWT16/00058
SF2017/029878
MM

The Manager
Department of Planning & Environment
GPO Box 39
SYDNEY NSW 2001

Attention: Rose-Anne Hawkeswood

SSD 7680 - PROPOSED "SUNRAYSIA" SOLAR FARM DEVELOPMENT, LOTS 9, 10, 11 & 14 DP751179, TOOLEYBUC-BALRANALD ROAD, BALRANALD.

I refer to your correspondence regarding the subject Application which was referred to the Roads and Maritime Services for assessment and comment.

Roads and Maritime Services has reviewed the Environmental Impact Statement (EIS) dated January 2017 prepared by NGH Environmental for the Sunraysia Solar Farm project. From the information provided it is understood that the proposal is for the establishment and operation of a 200 MW solar photovoltaic (PV) plant and associated infrastructure, including a transmission line on the subject site. The subject site has frontage to the Balranald-Tooleybuc Road (MR694), also referred to as Yanga Way, which is a classified road, within a 100 km/h speed zone. Yanga Way is an approved road train route.

The development will comprise of a series of mounted photovoltaic modules (approximately 750,000 solar panels) erected in arrays with single axis tracking. The panel structures will stand about 3 metres above ground level however the mounting system and panel orientation will depend on the panel technology adopted. Generally the panels will be orientated towards the predominate sun direction either in a north facing or east west facing orientation or a combination of these. The submitted documentation indicates that the Solar Farm will be undertaken in 2 stages with 100 MW in each stage. It is understood that the anticipated total construction period will be between 7 to 12 months

Due to the characteristics of such a project it is appropriate that the development be considered as 2 distinct phases, the Construction phase and Operational phase. This is considered appropriate as the significant proportion of traffic generation and the transportation of the large components will occur during the construction and decommissioning stages of the development. It is anticipated that the operational phase of the development will generate limited traffic.

Section 8.2 of the EIS outlines transport issues and details safe guards and mitigation measures for traffic generation including works to the intersection with Yanga Way and a Traffic Management Plan to be developed with input from the relevant roads authorities.

The submitted documentation considers the heavy and light vehicle traffic generation for construction of the facility. However it fails to define the preferred haulage routes for the components to the site, or source of other products, such as the aggregate, water and sand. Whilst the transportation of the components may be addressed, it's the frequency and volumes of the other material and the smaller construction and worker vehicles that can represent issues for the road network. These issues need to be finalised to allow for the proper assessment of the impacts on the road network. Therefore any consent for this development will require the preparation of an appropriate Traffic Management Plan. The submitted documentation indicates that a Traffic Management Plan will be completed. As the proposal relies on access via the classified and local road network this plan should be finalised in consultation with the relevant road authorities, in this case being both the Roads and Maritime Services and Balranald Shire Council.

The documentation indicates that access to the site is via Yanga Way and a new intersection to be constructed on Yanga Way. It is appropriate to require that all access to the development site be via the new intersection and not various other dirt tracks that access the site. Given the potential traffic generation, including light vehicles, the submitted reports propose the construction of an Auxiliary Right Turn (AUR) intersection treatment at the intersection of the access road with Yanga Way. The Austroads Guide to Road Design proposes that Auxiliary Right Turn (AUR) treatments be replaced with Channelised Right Turn -Short (CHR(s)) treatments. Roads and Maritime Services requires that as a minimum the intersection be constructed as a Channelised Right Turn - Short (CHR(s)) and Basic Left Turn (BAL) intersection treatment and that the access road be sealed for at least 50 metres from its intersection with Yanga Way.

It is noted that there is an application for the Limondale Sun Farm proposed to be located on land adjoining to the north of the site of the Sunraysia Solar Farm. It is noted that the proposed access arrangements for this other solar farm may be via an intersection with Yanga Way immediately north of the Sunraysia Solar Farm site. It would be appropriate that consideration be given to the use of the same access point to Yanga Way for both developments however this would be dependent on the relative timing of construction of each proposal so as not to be simultaneous.

The cumulative traffic impact needs to be assessed should both the Sunraysia Solar Farm and the Limondale Sun Farm projects be constructed simultaneously. However based on the information provided a number of unanswered variables exist, such as timing of construction, transportation routes, source of and transportation of materials such as sand and gravel, etc. that require clarification. It is considered appropriate that the assessment of these applications condition the need for discussions with the relevant road authorities (in the case Roads and Maritime Services and Council) to formulate appropriate traffic management processes and road upgrades.

The construction workforce is proposed to be housed in Balranald, Swanhill, Mildura and surrounding localities. Given the distances required to be travelled and the construction workforce numbers it would be appropriate to consider options to address driver fatigue for the construction period of the development. The submitted documentation refers to car pooling and buses being organised to transport personnel to and from the development site.

The development proposes a number of mitigating measures to be undertaken to address any perceived impact on visual amenity or glare. This includes the establishment of additional plantings to screen the development from view along Yanga Way. This is proposed to shield the facility from the most frequent and direct views from Yanga Way and will minimise distraction of the motorist on Yanga Way.

Roads and Maritime is mainly concerned with the provision of safe access between the subject site and the public road network and the impact of the development on the safety and efficiency of the road network. Roads and Maritime emphasises the need, particularly during the construction phase of this development, to minimise the impacts on the existing road network and maintain the safety, efficiency and standard of maintenance along the existing road network and to minimise the impact and distraction to the road user. As the subject site is to be accessed via the intersection with Yanga Way which is located within a 100 km/h speed zone the following conditions are proposed for road safety reasons.

Roads and Maritime Services has assessed the Development Application based on the documentation provided and would raise no objection to the development proposal subject to the Consent Authority ensuring that the development is undertaken in accordance with the information submitted as amended by the inclusion of the following as conditions of consent (if approved):-

1. A Traffic Management Plan shall be prepared in consultation with the relevant road authorities (Council and Roads and Maritime Services) to outline measures to manage traffic related issues associated with the development, particularly during the construction or decommission process. The appointed transport contractor shall be involved in the preparation of this plan. The plan shall address all light and heavy traffic generation to the development site and detail the potential impacts associated with the development, the mitigation measures to be implemented, and the procedures to monitor and ensure compliance. This plan shall address, but not necessarily be limited to the following;

    i) Require that all vehicular access to the site be via the approved access route.
    ii) Details of traffic routes to be used by heavy and light vehicles, and any associated impacts and any road-specific mitigation measures.
    iii) Details of measures to be employed to ensure safety of road users and minimise potential conflict with project generated traffic,
    iv) Proposed hours for construction activities, as night time construction presents additional traffic related issues to be considered.
    v) The management and coordination of the movement of vehicles for construction and worker related access to the site and to limit disruption to other motorists, emergency vehicles, school bus timetables and school zone operating times,
    vi) loads, weights and lengths of haulage and construction related vehicles and the number of movements of such vehicles,
    vii) procedures for informing the public where any road access will be restricted as a result of the project,
    viii) any proposed precautionary measures such as signage to warn road users such as motorists about the construction activities for the project,
    ix) a Driver Code of Conduct to address such items as; appropriate driver behaviour including adherence to all traffic regulations and speed limits, safe overtaking and maintaining appropriate distances between vehicles, etc and appropriate penalties for infringements of the Code,
    x) details of procedures for receiving and addressing complaints from the community concerning traffic issues associated with truck movements to and from the site,

2. The Proponent must engage an appropriately qualified person to prepare a Road Dilapidation Report for all road routes to be used during the construction (and decommissioning) activities, in consultation with the relevant road authority (Roads and Maritime Services and Council). This report is to address all road related infrastructure. Reports must be prepared prior commencement of, and after completion of, construction (and decommissioning). Any damage resulting from the construction (or decommissioning) traffic, except that resulting from normal wear and tear, must be repaired at the Proponent's cost. The applicant is accountable for this process, rather than the proposed haulage contractor. Such work shall be undertaken at a time as agreed upon between the Proponent and relevant road authorities.

3. Prior to the commencement of construction on-site, the Proponent must undertake all works to upgrade any road, its associated road reserve and any public infrastructure in that road reserve, to a standard suitable for use by heavy vehicles to meet any reasonable requirements that may be specified by the relevant roads authority. The design and specifications, and construction, of these works must be completed and certified by an appropriately qualified person to be to a standard to accommodate the traffic generating requirements of the project. On Classified Roads the geometric road design and pavement design must be to the satisfaction of the Roads and Maritime Services.

4. As a minimum the intersection of the access road with Yanga Way is to be constructed and the roadside maintained so as to provide the required Safe Intersection Sight Distance (SISD) with a reaction time of 2.5 seconds in either direction in accordance with the Austroads Publications as amended by the supplements adopted by Roads and Maritime Services for the posted speed limit. Compliance with this requirement is to be certified by an appropriately qualified person prior to construction of the vehicular access.

5. As a minimum the intersection of the access road with Yanga Way is to be constructed with a Channelised Right Turn -Short (CHR(s)) and Basic Left Turn (BAL) intersection treatment in accordance with the Austroads Guide to Road Design as amended by the supplements adopted by Roads and Maritime Services for the posted speed limit on Yanga Way. The intersection is to be constructed to the standards required for an approved road train route.

6. As a minimum the access road is to be constructed to provide for 2 way movement and be sealed for at least 50 metres from its intersection with Yanga Way. The intersection shall be designed and constructed so that vehicles turning between Yanga Way and the access road are not required to cross to the opposing travel lane in order to perform a turn manoeuvre. The intersection shall be line marked in accordance with Australian standards.

7. A management plan to provide measures to suppress dust generation from the development site and the transportation route shall be prepared and implemented to the satisfaction of Council and Roads and Maritime Services.

8. No external lighting of any infrastructure associated with the project is permitted at night that may cause distraction to road users other than low intensity security lighting.

9. Reflection of sunlight from the solar panels (glare) shall not cause a nuisance, disturbance or hazard to the travelling public. In the event of glare from the solar plant being evident from a public road, the proponent shall immediately implement glare mitigation measures such as construction of a barrier (e.g. fence) or other approved device to remove any nuisance, distraction and/or hazard caused as a result of glare from the solar panels.

10. The intersection of the access roadway and Yanga Way is to be designed and constructed so as not to interfere with the capacity of the current roadside drainage network and to prevent water from proceeding onto, or ponding within, the carriageway of Yanga Way. If a culvert is be installed and is to be located within the required clear zone of Yanga Way for the posted speed zone it is to be constructed with a traversable type headwall.

11. Any damage or disturbance to the road reserve of Yanga Way is to be restored to match surrounding landform in accordance with Council requirements.

12. Yanga Way is part of the State Road network. For works on the State Road network the developer is required to enter into a Works Authorisation Deed (WAD) with Roads and Maritime Services before finalising the design or undertaking any construction work within or connecting to the road reserve. The Works Authorisation Deed documentation is to be submitted for each specific change to the state road network for assessment and approval by Roads and Maritime Services prior to commencement of any works within the road reserve. The applicant is to contact the Land Use Manager for the South West Region on Ph. 02 69236611 for further detail.

13. Any works within the road reserve of Yanga Way requires approval under Section 138 of the Roads Act, 1993 from the road authority (Council) and concurrence from Roads and Maritime Services prior to commencement of any such works. The developer is responsible for all public utility adjustment/relocation works, necessitated by the development and as required by the various public utility authorities and/or their agents.

14. All works associated with the project shall be at no cost to the Roads and Maritime Services.

Under the provisions of the Environmental Panning & Assessment Act, the Consent Authority, is responsible to consider any likely impacts on the natural or built environment. Depending on the level of environmental assessment undertaken to date and nature of the works, it may be necessary for the developer to undertake further environmental assessment for any ancillary road works required as a condition on the development.

Any enquiries regarding this correspondence may be referred to the Manager, Land Use for Roads and Maritime Services (South West Region), Maurice Morgan, phone (02) 6923 6611.

Please forward a copy of the Notice of Determination for this Development Application to the Roads and Maritime Services at the same time as advising the applicant.

Yours faithfully

Per:
Mr Lindsay Tanner
Regional Manager
South West Region

NSW GOVERNMENT | Department of Industry

OUT17/8964

Rose-Anne Hawkeswood
Senior Planning Officer
Resource Assessments & Planning Services
Department of Planning & Environment
GPO Box 39
SYDNEY NSW 2001

Rose-Anne.Hawkeswood@planning.nsw.gov.au

Dear Rose-Anne

Sunraysia Solar Farm Project (SSD 7680) - Exhibition

I refer to your email dated 3 February 2017 inviting the the Department of Industry - Division of Resources & Energy (DRE) to provide comments on the Sunraysia Solar Farm Project (SSD 7680) submitted by Sunraysia Solar Farm Two Pty Ltd (the Proponent).

DRE has reviewed and assessed the adequacy of information in the *Sunraysia Solar Farm, Balranald Environmental Impact Statement* dated January 2017 and notes the following:

The proposal is aligned to Government's NSW Renewable Energy Action Plan, and would deliver positive social aspects, driving investment and growth in regional NSW and provide alternate income streams. Increasing solar energy in NSW will help the Government meet its commitment to support the national Renewable Energy Target of 33,000 gigawatt hours (GWh) by 2020.

The proposal is located next to the Exploration Licence (EL) 7626 (Fig. 1) held by Iluka Resources Limited (Iluka) within the Loxton-Parilla Heavy Mineral Potential Resource Area. This area has been identified as having significant potential to host buried heavy mineral sand deposits. The area of the proposal is situated between two identified deep, high grade heavy mineral sands deposits.

DRE has assessed that the probability of overlap between the area of the proposal and the identified heavy mineral sands deposits or the area which may be required for any potential mining footprint of those deposits is minimal.

In consideration of the economic and technical investment by Iluka into exploration, the potential economic significance of the deposits to both Iluka and the State, and the proposed power transmission line transecting Iluka's exploration tenure, DRE requires the following:

Details of consultation undertaken in the EIS does not include DRE agency consultation or requirements (Appendix H – Consultation Results), and as there is no evidence of consultation with Iluka, it is unclear if direct consultation with the titleholder has occurred (page 109 – Mining).

DRE requires records of future consultation conducted, including any agreements reached between parties, must be documented in full to DRE.

The Proponent is required to conduct detailed and authentic consultation with the intent of reaching collaborative works agreement with Iluka Pty Ltd regarding:

- the Sunraysia Solar Farm proposal and intended power transmission line location,
- the distribution of heavy mineral sand deposits in the area with respect to sterilisation;
- the potential for interference between the solar farm and future (potential) mining operations,
- the potential cumulative impact of the Limondale Sun Farm proposal on exploration of EL7626, and
- access arrangements for further mineral exploration in EL7626.

To assist in achieving these requirements, DRE provides the below contact details for the Titleholder:

Tom Blackwell,
Project Manager,
Balranald Mineral Sands Project
Phone: (03) 5551 2402
Email: tom.blackwell@iluka.com.

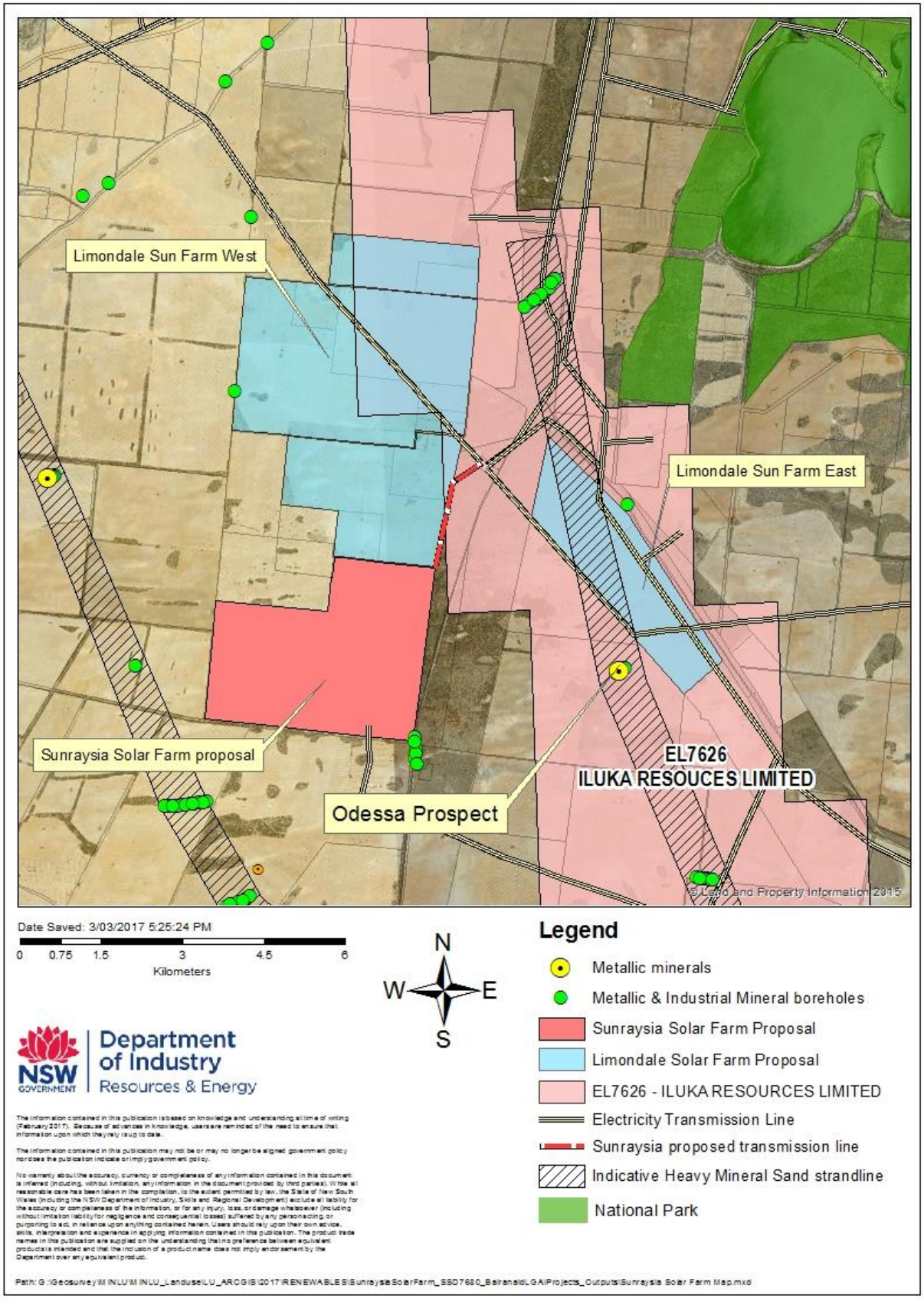
The context, rationale and detail behind this recommendation are provided in the supplemental information included below for further assistance.

Should you have any enquires regarding this matter please contact Steve Cozens, Senior Project Officer, Royalty & Advisory Services on 9842 8573.

Yours sincerely

Zane West
Manager Royalties & Advisory Services
7 March 2017

Figure 1: Sunraysia Solar Farm Proposal – Exploration Licence (EL) 7626



Supplementary Information – Balranald Heavy Mineral Sand projects

Australia is the world's largest producer of Heavy Mineral Sands (HMS e.g. rutile, zircon, ilmenite and leucoxene). The Murray Basin, containing the Loxton-Parilla Heavy Mineral Potential Resource Area in the Balranald region of south western NSW, is emerging as a world-class HMS province with a total output in 2015 of ~110 Ktpa zircon, ~170 Ktpa of rutile from two mines in NSW (operated by Cristal Mining Australia).

Iluka Resources Limited (Iluka), the largest producer of HMS in Australia, are in the initial stages of developing the Balranald Mineral Sands Project (Mining Lease 1736), approximately 14km North West of Balranald. The core assets of the project include the West Balranald and Nepean deposits, which contain a combined resource of 16.3 million tonnes of heavy mineral sands.

The Balranald Mineral Sands Project is projected to annually produce around 0.5 million tonnes of heavy mineral concentrate worth up to $150 million per annum for about 15 years. Mining is proposed to commence at the West Balranald deposit and later progress to the Nepean deposit. Iluka Resources Limited's planned production combined with that of their competitor Cristal Mining Australia, would allow New South Wales to challenge Western Australia as Australia's largest producer of heavy mineral sands. The Balranald region is in need of economic stimulus and the local population is mostly supportive. Iluka Resources Limited are currently in the process of transitioning their focus of activity from their Victorian mining operations to the Balranald Project in NSW.

The Balranald Project will have a long term positive economic impact on a remote regional area of NSW.

Sunraysia Solar Farm Proposal

The proposed Sunraysia and Limondale Solar Farm sites are located approximately 30km to the South of the core assets of the Balranald Mineral Sands Project. The Sunraysia proposal is situated between two identified heavy mineral sands deposits (Odessa and N309). The Odessa deposit is considered a second order exploration priority relative to the core assets of the Balranald Project. At the time of submittal of the Sunraysia proposal, the combined area of the Odessa and N309 deposits, and the area of the Sunraysia solar proposal, were held under exploration licence EL7626 by Iluka.

The area of EL7626 was reduced upon submittal of the application for renewal on 11th October 2016 in compliance with the requirements for reduction of tenure area under the Mining Act 1992. The title will remain in force until a determination has been made by the decision maker regarding the renewal application. The licence EL7626 now only covers the Odessa deposit and does not overlap with the Sunraysia proposal. However, the location of the proposed power transmission corridor does transect EL7626 and the Odessa deposit (Figure 1).

The Odessa and N309 deposits are large (generally 80m wide by 2km long), deep (approximately 60 – 70m), extremely high grade (average grade of up to 33% HM). Based on currently available information, these deposits are potentially economically viable. Their economic viability will viability will increase subsequent to the development of the Balranald Mine due to their proximity to the central mining operation. Although Iluka do not currently have exploration tenure on the N309 deposit, DRE considers the deposit to be a significant potential mineral resource and has

considered the potential for sterilisation of the State's resources accordingly, independent of the title holder's current tenure.

DRE has considered the potential area required for a hypothetical future open cut mining operation for the N309 and Odessa deposits. Based on currently available information from broad spaced drilling of these deposits, and considering a low 25º to 30º angle of repose of a potential open cut pit, DRE has determined that the potential proximity of a final pit top for hypothetical mining proposals on the N309 and Odessa Deposits could be as close as 250m and 500m respectively. DRE is therefore satisfied that there is unlikely to be a direct intersect between the solar farm proposal and a hypothetical future mining operation on the Odessa and N309 deposits. However, these distances represent very close proximity for a mining operation, and there may be interference between possible future operations. The proponent should consult further with Iluka on this matter.

Limondale Solar Farm Proposal

The Limondale Sun Farm proposal consists of two parts which are adjacent and contiguous to the north (West Limondale) and proximal to the north east (East Limondale) of the Sunraysia Solar Farm proposal. Both parts of the Limondale proposal are coincident with the EL7626 and the Odessa Deposit. Additionally the proposed Sunraysia transmission line intersects EL7626. DRE has concerns regarding the cumulative impact of multiple solar farm proposals on Iluka Resource's ability to comprehensively complete their exploration program, and consequently on the subsequent assessment and development of the economic potential of the in-situ heavy mineral sands resource contained within EL 7626. The proponent should consult further with Iluka on this matter.

BALRANALD SHIRE COUNCIL

ALL COMMUNICATIONS
MUST BE ADDRESSED TO
THE GENERAL MANAGER

Contact: RS:NMR:626

PCU069694

70 Market Street, Balranald NSW 2715
PO Box 120, Balranald NSW 2715
Tel: 03 5020 1300
Fax: 03 5020 1620
Email: council@balranald.nsw.gov.au
Web: www.visitbalranald.com.au

23 February 2017

Planning Services
Department of Planning & Environment
Att: Executive Director – Resource Assessments and Business Systems
GPO Box 39
SYDNEY NSW 2001

Dear Sir,

Re: Sunraysia Solar Farm

Thank you for the opportunity to make a submission on the Development Application for the Balranald Sunraysia Solar Farm.

Council supports the project and the opportunities it brings.

However, Council has concerns, the major one relates to the potential interactions with other major projects such as the Iluka Mineral Sands project and the major expansion of intensive horticulture (goFarm – 7000 hectares of almonds). Both these projects demand considerable workers during construction / planning stages.

The EIS does not provide a clear strategy to deal with construction worker accommodation. From a community perspective this should be located in an adjacent area to the Balranald urban area to deliver maximum local benefit.

Council notes that the EIS does not flag any significant contribution to the local area and suggests that a VPA should be considered given the scale of the project. This could focus on the provision of:

1. Funding and provision of information display material for the Balranald Discovery Centre to explain and promote the project.
2. Scholarships for local student support, training and skill development.

Please contact Councils Acting Director of Infrastructure and Development, Bob Stewart, on 03 5020 1300 or by email on bstewart@balranald.nsw.gov.au if you require further information.

Yours faithfully,

Aaron Drenovski
GENERAL MANAGER

Forestry Corporation of NSW ABN 43 141 857 613

Western Region
Cnr Monash and Chelmsford Streets
Dubbo NSW 2830
(PO Box 865 Dubbo NSW 2830)

T: 02 6841 4205
E: jarod.dashwood@fcnsw.com.au

Rose-Anne Hawkeswood
Senior Planning Officer
Resource Assessments
NSW Department of Planning and Environment
GPO Box 39
Sydney NSW 2001

2 March 2017

Dear Rose-Anne

RE: SUNRAYSIA SOLAR FARM PROJECT (SSD 7680) – REVIEW OF ENVIRONMENTAL IMPACT STATEMENT

Forestry Corporation of NSW (FCNSW) has reviewed the EIS and provides the following comment:

1. Acknowledgement of the proponent's intention to liaise with FCNSW regarding the process of clearing crown timbered land (CTL).

   Prior to clearing activities on CTL, FCNSW and the proponent shall arrange a meeting at either the proposed solar farm site or one of FCNSW Western's regional offices (i.e. Dubbo or Deniliquin). FCNSW will assist the proponent in the application of necessary authorities in order to take such timber

2. FCNSW's records indicate that the entirety of Lot 7301/1157986 is held as *Timber Reserve* (TR38825). Both land parcels are described as dual purpose *Timber Reserve* and *Travelling Stock Route* (Reserve 17969)

3. As the owner of timber rights on land administered under the *Western Lands Act 1901*, FCNSW must be consulted prior to the establishment of Biobanking Agreements on such lands.

If you have any further queries on this matter, please contact Jarod Dashwood on 6841 4205.

Yours Faithfully

Jarod Dashwood
Forest Occupancy Supervisor
FCNSW WESTERN REGION

APPENDIX C ILUKA PTY LTD CONSULTATION

Gmail by Google

Qiao Han <qiao.han@maoneng.co>

Sunraysia Solar Farm Development - Balranald

Blackwell, Tom <Tom.Blackwell@iluka.com> Tue, Mar 28, 2017 at 3:55 PM
To: Qiao Han <qiao.han@maoneng.co>

Qiao,

In conclusion of the recent phone discussions with you regarding the Sunraysia Solar Farm development, it appears that the development will not have significant impacts on the proposed Iluka mineral sands development.

Iluka does not require any more details regarding the development at this point, confirm that we have been adequately consulted and wish you the best for the development.

Regards

Tom Blackwell

Iluka Project Manager

0427987976

From: Qiao Han [mailto:qiao.han@maoneng.co]
Sent: Monday, 13 March 2017 4:11 PM
To: Blackwell, Tom <Tom.Blackwell@iluka.com>
Subject: Sunraysia Solar Farm Development - Balranald

Hi Tom,

Thank you for taking the time to review our solar farm development application in Balranald (Sunraysia Solar Farm or SSF).

We have received a submission from NSW Department of Industry (Division of Resources and Energy) and have been asked to discuss the details of project a little more with you.

Thanks again for the quick phone call for sharing further thoughts around each other's developments.

As discussed, our development is quite simple and site specific with respect to proximity of existing electrical infrastructure. Sunraysia Solar Farm will not be intersecting any Heavy Mineral Sand strandlines as indicated in the attachment and based on the limited information which we have around Iluka's operations, it is understood that the proposed mining operations would also have minimal impact on surrounding environment.

I will be in Balranald this Friday (17th of March 2017) and Tuesday (4th of April 2017).

Happy to make time to talk again or meet up.

–

茂能
MAONENG

Qiao Han / Group Vice President
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APPENDIX D BIODIVERSITY OFFSET STRATEGY

Biodiversity Offset Strategy

SUNRAYSIA SOLAR FARM

APRIL 2017

www.nghenvironmental.com.au

Document Verification

Project Title: Sunraysia Solar Farm

Project Number:	16-194
Project File Name:	Biodiversity Offset Strategy

Revision	Date	Prepared by (name)	Reviewed by (name)	Approved by (name)
Final	13/04/17	Aleksei Atkin Brooke Marshall	Raphael Morgan Nick Graham-Higgs	Nick Graham-Higgs

NGH Environmental Pty Ltd (ACN: 124 444 622. ABN: 31 124 444 622) and NGH Environmental (Heritage) Pty Ltd (ACN: 603 938 549. ABN: 62 603 938 549) are part of the NGH Environmental Group of Companies.

www.nghenvironmental.com.au

e: ngh@nghenvironmental.com.au

Bega - ACT and South East NSW
suite 1, 216 carp st (po box 470)
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8/27 yallourn st (po box 62)
fyshwick act 2609 (t 02 6280 5053)

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8 trawalla st
the gap qld 4061 (t 07 3511 0238)

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

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

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

CONTENTS

TABLES

FIGURES

1 BACKGROUND

Sunraysia Solar Farm Pty Ltd proposes to develop approximately 800 ha of the 1000 ha proposal site. The Sunraysia SF would include the following elements:

- PV modules using crystalline or thin-film technology with solar tracking system.
- Battery storage
- A site office and maintenance building
- An access road from Yanga Way to the site
- Internal access tracks to allow for site maintenance
- Perimeter security fencing
- Grid connection to the substation to the north via an overhead line (220kV) within a 50-metre-wide easement; and
- Native vegetation screening, where required to break up views of infrastructure

An Environmental Impact Statement (EIS) was prepared to assess the impacts of the proposal, which included the preparation of a Biodiversity Assessment Report (BAR) in accordance with the NSW Framework for Biodiversity Assessment (FBA) (NSW Office of Environment and Heritage, 2014a).

The EIS was submitted in January 2017, and a review was undertaken by relevant approval bodies, including the NSW Department of Planning and Environment (DP&E), and the NSW Office of Environment and Heritage (OEH). A response to the EIS submission was provided by OEH on the 3rd of March, 2017, which assessed the EIS as not meeting the environmental assessment requirements with respect to biodiversity, as the BAR did not contain a Biodiversity Offset Strategy to account for impacts to native vegetation.

2 SCOPE OF THIS BOS

This Biodiversity Offset Strategy (BOS) aims to identify and match the offset requirements for the project in accordance with the FBA. Under the FBA, ecosystem and species credit requirements identified for the project can be offset in a number of ways, including:

a) Retiring credits via a BioBanking agreement
b) Contributing money to supplementary measures
c) Contributing money to a BioBanking Fund

This BOS has been provided to demonstrate that the vegetation retained on site is of a suitable quantum to provide an adequate offset for the unavoidable impacts to native vegetation generated by the proposal. It is considered precautionary in that is considers all PCTs listed in the credit profile however, it is noted that under the rules of the FBA only EECs and threatened species habitat require offsets (Section 9.4 FBA 2014):

> *9.4.1.1 The assessor is not required to determine an offset for the impacts of development on PCTs that are:*
>
> *(a) in a vegetation zone with a site value score of <17, and the PCT has not been identified as a CEEC or EEC*
>
> *(b) not associated with threatened species habitat according to Section 6.4, and are not identified as a CEEC or EEC.*

Option a) Retiring credits via a BioBanking agreement would be utilised to retire the required credits. Where possible, the BOS will aim to match ecosystem and species credits on a 'like for like' basis through the retirement of biodiversity credits, in accordance with the credit profiles provided in the project's credit report. Where this is not possible, supplementary measures may be investigated in consultation with the consent authority.

3 REQUIREMENT TO OFFSET

The BAR determined that 391 ecosystem credits would be required to be offset for the project. No species credits are required to be offset for the project.

This is comprised of three Plant Community Types (PCTs).

Table 3-1 Impact and Offset Credit Summary

Plant Community Type		**Impact area / Credits generated by clearing**	
Number	Name	Area (Ha)	Credits
58	Black Oak - Western Rosewood open woodland on deep sandy loams mainly in the Murray Darling Depression Bioregion	1.23	53
170	Chenopod sandplain mallee woodland/shrubland of the arid and semi-arid (warm) zones	9.59	291
23	Yarran tall open shrubland of the sandplains and plains of the semi-arid (warm) and arid climate zones	1.29	47
	Total	**12.11**	**391**

4 IDENTIFICATION OF SUITABLE OFFSETS

A preliminary BioBanking Assessment has been undertaken to provide certainty to consent authorities that a suitable quantum of ecosystem credits to form an appropriate offset to unavoidable impacts are available within the retained patches of vegetation within the proponent's land.

4.1.1 Field Survey

Field survey of the Sunraysia Solar Farm site was conducted in November 2016. As part of this survey, vegetation mapping was conducted within both the impact footprint and adjacent areas. Data gained from the completion of BioMetric plots within the impact area undertaken in accordance with the Biobanking Assessment Methodology (OEH, 2014c) informed the identification of Plant Community Types (PCT) through the NSW Vegetation Information System Database (OEH, 2016). These PCTs were then mapped within both the impact area and within the proposed offset area through the identification of diagnostic canopy species. BioMetric plots were undertaken within the impact area, but not within the proposed offset area. Identification of communities based on canopy species was considered appropriate, as each PCT present within the site were identifiable based on the canopy, for example Mallee *Eucalyptus dumosa/socialis*, Belah *Casuarina pauper*, Yarran *Acacia melvillei* and Black Box *Eucalyptus largiflorens*.

Boundaries between these communities were walked on foot, and mapped using a hand-held GPS device and a handheld GIS mapping device. Photographs were taken within vegetation polygons to provide evidence of the dominant canopy species. Aerial photographic imagery was also interpreted to assess boundaries of vegetation communities and community extents.

4.1.2 BioBanking Assessment

Preliminary BioBanking credit calculations have been completed to determine the quantum of ecosystem credits potentially available within the proposed offset area. As no BioMetric vegetation plots have been undertaken within the proposed offset area, plot data was insufficient to meet the minimum requirements for the calculator. In order to provide data, plot and transect data from the impact area were used to estimate the credit value within the offset area, with plot values being averaged or replicated where appropriate to provide an indication of the vegetation quality and structure. It is considered with a high degree of certainty that the quality of vegetation within both the impact and offset areas are of a similar nature, having been subjected to a similar historical regime of land use. Following confirmation from consent authorities that the proposed offset is acceptable, plot data would be collected prior to the submission of a formal BioBanking Agreement to provide evidence of actual site conditions.

Whilst inputting details within the calculator, **no management actions** were included within the calculations. As such, it is considered likely that the credit value of the proposed offset site would be higher with these management actions implemented. Appropriate management actions would be discussed with OEH, and be incorporated into the preparation of a management plan for management zones within the proposed offset. Mandatory management actions include:

- management of grazing for conservation;
- weed control;
- application of ecological fire management;
- management of human disturbance;
- retention of regrowth and remnant native vegetation;
- replanting or supplementary planting where natural regeneration will not be sufficient;

- retention of dead timber;
- erosion control; and
- retention of rocks.

Additional management actions which may be undertaken within the proposed offset site include:

- control of feral and/or overabundant native herbivores;
- vertebrate pest management of pigs;
- vertebrate pest management of foxes and/or miscellaneous species; and
- nutrient control.

5 PRELIMINARY RESULTS

5.1.1 Field Survey

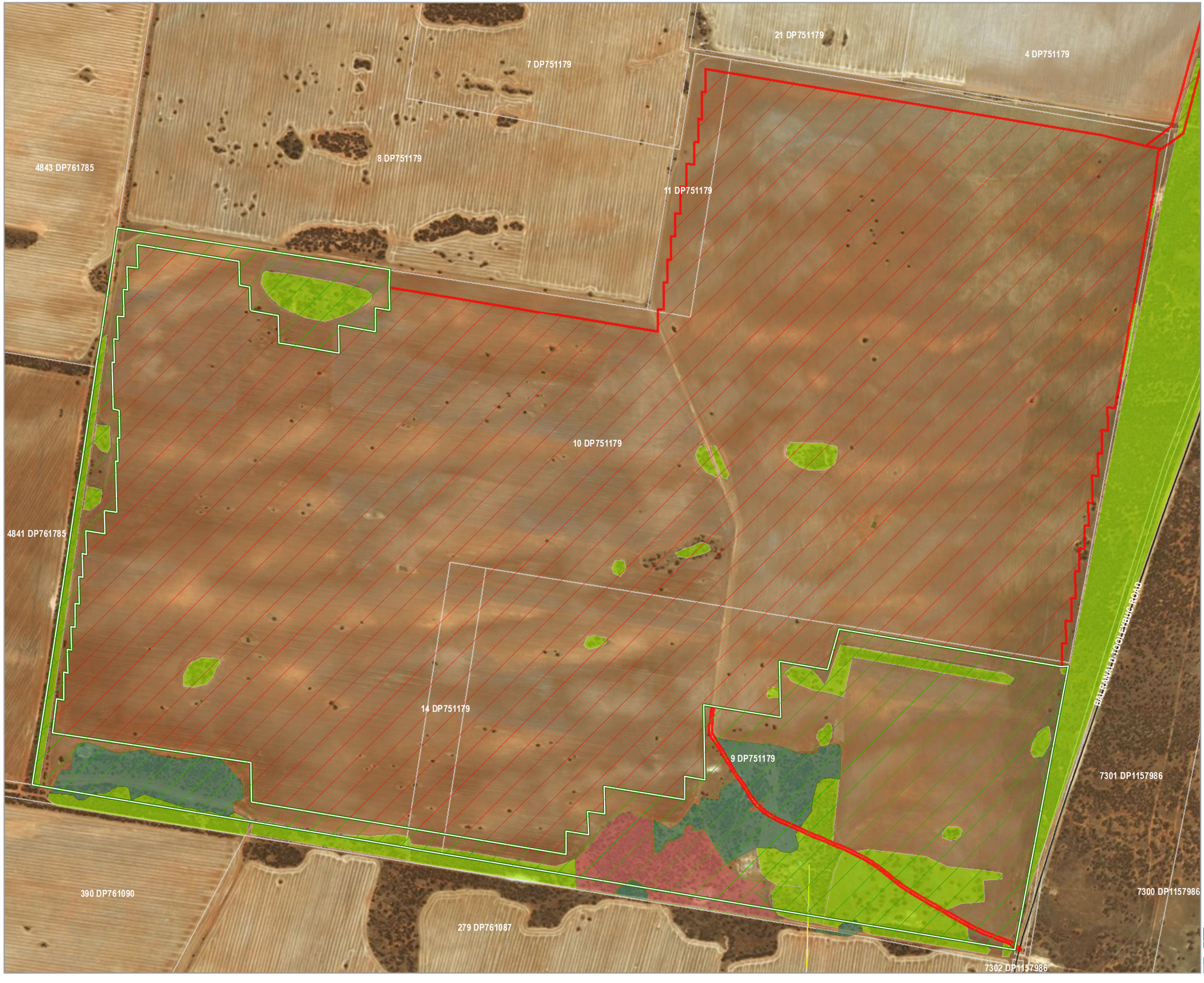
The field survey resulted in the mapping of approximately 106 ha of vegetation communities outside the proposed impact area but within the site boundaries. These areas are available to be secured as in perpetuity offsets for the project.

The areas of these communities are summarised in Table 5-1 below, and are shown on Figure 5-1 below.

Table 5-1 Areas of vegetation communities mapped during field survey

Plant Community Type	Community	Area
58	Black Oak - Western Rosewood open woodland on deep sandy loams mainly in the Murray Darling Depression Bioregion	0.00
170	Chenopod sandplain mallee woodland/shrubland of the arid and semi-arid (warm) zones	58.56
16	Black Box grassy open woodland wetland of rarely flooded depressions in south western NSW (mainly Riverina Bioregion and Murray Darling Depression Bioregion)	17.14
23	Yarran tall open shrubland of the sandplains and plains of the semi-arid (warm) and arid climate zones	30.42
	Total	**106.12**

SUNRAYSIA SOLAR FARM



Potential offset area
Proposal area

Plant Community Type
- PCT 16
- PCT 170
- PCT 23

Local road
Existing transmission lines
Cadastre

0 125 250 500 Metres

A3 @ 1:13665
Ref: SW095_offset
Author: SP

ngh environmental

www.nghenvironmental.com.au

Photographs 5.1 to 5.3 below show examples of the quality of these communities within the proposed offset area.

Photograph 5-1 Chenopod sandplain mallee woodland within the southern portion of the proposed offset area

Photograph 5-2 Black Box grassy open woodland within the central portion of the proposed offset area

Photograph 5-3 Yarran tall open shrubland within the south-western portion of the proposed offset area

One threatened species, the Regent Parrot (eastern subspecies) *Polytelis anthopeplus subsp. monarchoides* was identified within the proposed offset area, in proximity to the access track. It is considered likely that the population of this species occurring within the locality would utilise the proposed offset area as a foraging and roosting habitat resource.

5.1.2 Ability to meet offset requirement

Two of the three vegetation communities that require offsets are found on the areas investigated:

1. Chenopod mallee woodland (PCT 170)
2. Yarran Tall open shrubland (PCT 23).

PCT 23 is consistent with the TSC Act listing for the *Acacia melvillei* Shrubland in the Riverina and Murray-Darling Depression bioregions Endangered Ecological Community.

Based on these preliminary biobanking calculations, the offset areas investigated meet:

- 173% of the offset requirements for Chenopod mallee woodland (PCT 170)
- 585% of the offset requirements for Yarran tall open shrubland (PCT 23).

The offset area has also generated 148 credits for Black Box grassy woodland. This vegetation community does not require offsetting for the development.

The offset area does not contain Black Oak – Western Rosewood Open Woodland (PCT 58). A 53 credit deficit remains for this PCT. Currently there are no credits for this PCT available for purchase on the biobanking credits register.

The proponent proposes to apply for a variation in accordance with the variation rules, and utilise the excess ecosystem credits generated by PCT 23 to act as an offset for PCT 58. PCT 23 conforms to these rules as:

- all reasonable steps to secure a matching ecosystem credit have been taken by the proponent (there are no credits available for PCT 58 on the BioBanking Credit Register, and purchase of additional land for the purpose of offsetting is considered economically unfeasible), and
- the required ecosystem credit is not for a PCT associated with a CEEC listed on the TSC Act or an ecological community listed on the EPBC Act, and
- the PCT is from the same vegetation formation (Semi-arid woodlands [shrubby sub-formation] has a percent cleared value of the PCT in the major catchment area equal to or greater than the percent cleared of the PCT to which the required ecosystem credit relates (PCT 58 is 50% cleared, PCT 23 is 70.83% cleared)

Assuming a variation is approved, the credits generated by the approximately 30 ha of PCT 23 within the proposed offset area would generate enough credits to account for the total credits required to offset impacts to both PCT 23 and PCT 58 within the impact area (total of 100 ecosystem credits required), whilst still having a 175 credit surplus. Table 5-2 below summarises the credit requirement generated by the development and the proposed offset area.

Table 5-2 Impact and Offset Credit Summary

Plant Community Type		**Impact**		**Offset**	
Number	Name	Area (Ha)	Credits	Area (Ha)	Credits
16	Black Box grassy open woodland wetland of rarely flooded depressions in south western NSW (mainly Riverina Bioregion and Murray Darling Depression Bioregion)	0.00	0	17.01	148
58	Black Oak - Western Rosewood open woodland on deep sandy loams mainly in the Murray Darling Depression Bioregion	1.23	53	0.00	0
170	Chenopod sandplain mallee woodland/shrubland of the arid and semi-arid (warm) zones	9.59	291	58.58	506
23	Yarran tall open shrubland of the sandplains and plains of the semi-arid (warm) and arid climate zones	1.29	47	30.74	275
	Total	**12.11**	**391**	**106.33**	**929**

It should be noted that the total areas of PCTs are based on the total polygon size of the patches of the vegetation, and have been used for the purposes of providing a preliminary BioBanking Assessment. A portion of these polygons of the community fall outside the property boundary of that owned by the proponent, and as such, the total area of these communities available to act as an offset is smaller than that utilized within the preliminary BioBanking Assessment. Nonetheless, it is considered likely that even with the reduced areas of these communities, when additional management actions are incorporated into the calculations, the proposed offset site still provide a surplus of credits and an adequate number to satisfy the offset requirements of the proposal.

Total areas of these communities occurring within the property boundary are detailed in Table 5-3 below.

Table 5-3 Total areas of plant communities within property boundary

Plant Community Type	Community	Area (Ha)
58	Black Oak - Western Rosewood open woodland on deep sandy loams mainly in the Murray Darling Depression Bioregion	0.00
170	Chenopod sandplain mallee woodland/shrubland of the arid and semi-arid (warm) zones	45.76
16	Black Box grassy open woodland wetland of rarely flooded depressions in south western NSW (mainly Riverina Bioregion and Murray Darling Depression Bioregion)	14.30
23	Yarran tall open shrubland of the sandplains and plains of the semi-arid (warm) and arid climate zones	29.42
	Total	**89.48**

6 CONCLUSION

Approximately 106 ha of vegetation, including approximately 30 ha of *Acacia melvillei* Shrubland in the Riverina and Murray-Darling Depression bioregions EEC, have been mapped as occurring within and adjacent to the proposed offset area for the Sunraysia Solar Farm. Of this area of vegetation, approximately 89.5 ha occurs within the boundary of the lot owned by the proponent. Vegetation mapping of the area was conducted during the process of surveys for the project's impact assessment, and a preliminary BioBanking assessment was prepared of the total area of mapped vegetation using plot data gained from sites within the impact area, considered to be of the same vegetation condition as those found within the proposed offset area.

The preliminary BioBanking Assessment found that the three Plant Community Types within the proposed offset area generated 929 Ecosystem credits, including 275 ecosystem credits for the EEC vegetation. The proposed offset area does not produce credits for one PCT, PCT 58 Black Oak - Western Rosewood open woodland on deep sandy loams mainly in the Murray Darling Depression Bioregion, and as such a variation is proposed to be sought to utilise excess credits generated by PCT 23 to act as an offset to impacts to this community. This proposed variation conforms to the variation rules stipulated within the Framework for Biodiversity Assessment. As such, a surplus of credits is likely to be generated by the proposed offset site to those required to offset the proposed impact.

It is proposed that a Biodiversity Offset Plan be prepared to:

1. Demonstrate the final offset area meets the FBA requirements; and
2. Detail management measures appropriate to the site.

The Biodiversity Offset Plan will be prepared in consultation with relevant consent authorities and detail the extent, preferred layout and management of the proposed offset. We propose to prepare and implement the Biodiversity Offset Plan within two years of construction.

7 REFERENCES

NSW Office of Environment and Heritage (OEH) 2014a *Framework for Biodiversity Assessment - NSW Biodiversity Offsets Policy for Major Projects*

NSW Office of Environment and Heritage (OEH) 2014b *NSW Biodiversity Offsets Policy for Major Projects*

NSW Office of Environment and Heritage (OEH) 2014c *BioBanking Assessment Methodology*

NSW Office of Environment and Heritage (OEH) 2016 *NSW Vegetation Information System: Classification 2.1*

APPENDIX A BIOBANKING REPORTS

BioBanking credit report

This report identifies the number and type of credits required at a BIOBANK SITE

Date of report: 29/03/2017 Time: 1:35:35PM Calculator version: v4.0

Biobank details

Proposal ID:	205/2017/4295B
Proposal name:	Test Balranald Solar Farm
Proposal address:	The Cut Line Balranald NSW 2715
Proponent name:	Maoneng Australia
Proponent address:	level 4, 5 Talavera Rd Macquarie park NSW 2113
Proponent phone:	9199 8599
Assessor name:	Matthew Hingee
Assessor address:	18/21 MARY ST Surrey Hills NSW 2010
Assessor phone:	02 8202 8333
Assessor accreditation:	205

Additional information required for approval:

- ☐ Use of local benchmark
- ☐ Expert report...
- ☐ Request for additional gain in site value

Ecosystem credits summary

Plant Community type	Area (ha)	Credits created
Black Box grassy open woodland wetland of rarely flooded depressions in south western NSW (mainly Riverina Bioregion and Murray Darling Depression Bioregion)	17.01	148.00
Chenopod sandplain mallee woodland/shrubland of the arid and semi-arid (warm) zones	58.58	506.00
Yarran tall open shrubland of the sandplains and plains of the semi-arid (warm) and arid climate zones	30.74	275.00
Total	106.33	929

Credit profiles

1. Black Box grassy open woodland wetland of rarely flooded depressions in south western NSW (mainly Riverina Bioregion and Murray Darling Depression Bioregion), (MU514)

Number of ecosystem credits created	148
IBRA sub-region	South Olary Plain, MU Basin Sands (Part A) - Murray

2. Chenopod sandplain mallee woodland/shrubland of the arid and semi-arid (warm) zones, (MU534)

Number of ecosystem credits created	506
IBRA sub-region	South Olary Plain, MU Basin Sands (Part A) - Murray

3. Yarran tall open shrubland of the sandplains and plains of the semi-arid (warm) and arid climate zones, (MU609)

Number of ecosystem credits created	275
IBRA sub-region	South Olary Plain, MU Basin Sands (Part A) - Murray

Species credits summary

Additional management actions

Additional management actions are required for:

Vegetation type or threatened species	Management action details
Black Box grassy open woodland wetland of rarely flooded depressions in south western NSW (mainly Riverina Bioregion and Murray Darling Depression Bioregion)	Control of feral pigs
Black Box grassy open woodland wetland of rarely flooded depressions in south western NSW (mainly Riverina Bioregion and Murray Darling Depression Bioregion)	Exclude commercial apiaries
Black Box grassy open woodland wetland of rarely flooded depressions in south western NSW (mainly Riverina Bioregion and Murray Darling Depression Bioregion)	Exclude miscellaneous feral species
Black Box grassy open woodland wetland of rarely flooded depressions in south western NSW (mainly Riverina Bioregion and Murray Darling Depression Bioregion)	Feral and/or over-abundant native herbivore control
Black Box grassy open woodland wetland of rarely flooded depressions in south western NSW (mainly Riverina Bioregion and Murray Darling Depression Bioregion)	Fox control
Black Box grassy open woodland wetland of rarely flooded depressions in south western NSW (mainly Riverina Bioregion and Murray Darling Depression Bioregion)	Maintain or re-introduce natural flow regimes
Chenopod sandplain mallee woodland/shrubland of the arid and semi-arid (warm) zones	Exclude miscellaneous feral species
Chenopod sandplain mallee woodland/shrubland of the arid and semi-arid (warm) zones	Feral and/or over-abundant native herbivore control
Chenopod sandplain mallee woodland/shrubland of the arid and semi-arid (warm) zones	Fox control
Chenopod sandplain mallee woodland/shrubland of the arid and semi-arid (warm) zones	Maintain or re-introduce natural flow regimes
Yarran tall open shrubland of the sandplains and plains of the semi-arid (warm) and arid climate zones	Exclude commercial apiaries
Yarran tall open shrubland of the sandplains and plains of the semi-arid (warm) and arid climate zones	Feral and/or over-abundant native herbivore control
Yarran tall open shrubland of the sandplains and plains of the semi-arid (warm) and arid climate zones	Fox control

BioBanking Credit Calculator

Ecosystem credits

Proposal ID :	205/2017/4295B
Proposal name :	Test Balranald Solar Farm
Assessor name :	Matthew Hingee
Assessor accreditation number :	205
Tool version :	v4.0
Report created :	29/03/2017 13:37

Assessment circle name	Landscape score	TS subzone number	Vegetation zone name	Vegetation type name	Condition	Management zone name	Management zone area	Current site value	Future site value	Gain in site value	Total credit created for management zone
1	12.00	MU534_Moderate/Good_1	MU534_Moderate/Good	Chenopod sandplain mallee woodland/shrubland of the arid and semi-arid (warm) zones	Moderate/Good	MZ1	58.58	51.85	71.50	19.65	506
1	12.00	MU609_Moderate/Good_1	MU609_Moderate/Good	Yarran tall open shrubland of the sandplains and plains of the semi-arid (warm) and arid climate zones	Moderate/Good	MZ1	30.74	44.62	65.71	21.09	275
1	12.00	MU514_Moderate/Good_1	MU514_Moderate/Good	Black Box grassy open woodland wetland of rarely flooded depressions in south western NSW (mainly Riverina Bioregion and Murray Darling Depression Bioregion)	Moderate/Good	MZ1	17.01	40.00	60.56	20.56	148

BioBanking Credit Calculator

Species credits

Proposal ID :

Proposal name :

Assessor name :

Assessor accreditation number :

Tool version : v4.0

Report created : 29/03/2017 13:37

Scientific name	Common name	Species TG value	Biobank on identified population?	Number found?	Units	Number of credits
			No			