EPURON

Modification Application

NEVERTIRE SOLAR FARM

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TABLES

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ACRONYMS AND ABBREVIATIONS

dB(A).	A measure of A-weighted *(c.f.)* sound levels
DPE	Department of Planning and Environment
EIS	Environmental Impact Statement
EMFs	Electromagnetic fields
EPBC Act	*Environmental Protection and Biodiversity Conservation Act 1999* (Cwth)
EP&A Act	*Environmental Planning and Assessment Act 1979* (NSW)
FBA	Framework for Biodiversity Assessment
GDE	Groundwater Dependant Ecosystem
ha	Hectares
Heritage Act	*Heritage Act 1977* (NSW)
IF	Isolated Find
kL	Kilolitre
kV	Kilovolts
LGA	Local Government Area
m	Metres
MW	Megawatt
NSW	New South Wales
OEH	(NSW) Office of Environment and Heritage, formerly Department of Environment, Climate Change and Water
PV	Photovoltaic
SSD	State Significant Development, as defined by section 89C of the EP&A Act *(c.f.)*

1 INTRODUCTION

1.1 BACKGROUND

Development Consent for the Nevertire Solar Farm was issued by the NSW Department of Planning and Environment (DPE) on the 5 July 2017. The approval allows for the construction, operation and decommissioning of a photovoltaic (PV) solar farm that would produce up to 105 Megawatts (MW AC) of electricity, and associated infrastructure. The Nevertire Solar Farm is approved to be constructed approximately 1km west of the Nevertire township and 90km west of Dubbo, within the Warren Shire Council Local Government Area (LGA).

The Nevertire Solar Farm Environmental Impact Statement (EIS) prepared by NGH Environmental (February 2017) and placed on public display March 2017, included the solar farm development footprint impacting on potential Sloane's Froglet (*Crinia sloanei*) breeding habitat. The potential Sloane's Froglet breeding habitat is located in the south-western portion of the site (Lot 26 DP 755292). Because properly timed surveys could not be completed in time for lodgement of the Submissions Report (prepared April 2017), the development footprint was adjusted for the Submissions Report. In removing the impact on the potential Sloane's Froglet breeding habitat, the requirement for offsetting for this species was also removed.

Since obtaining Development Consent for the Nevertire Solar Farm, the proponent Nevertire Solar Pty Ltd (Nevertire Solar), has commissioned targeted surveys for the threatened Sloane's Froglet (*Crinia sloanei*) within the previously identified potential breeding habitat for the species. The surveys undertaken by an ecologist on 31st July and 1st August 2017 found no evidence of the species and concluded they were unlikely to occur at the site (refer to Appendix D).

Due to the findings of these targeted surveys, Nevertire Solar are seeking a modification to expand the solar farm development footprint into the south-western portion of the site. The expansion of development footprint would increase it from approximately 177 ha to 200 ha.

The expanded development footprint, while substantially the same as the approved project, would not be consistent with the existing Development Consent.

1.2 AIM AND SCOPE OF THIS MODIFICATION REPORT

This Modification Report:

- Describes the proposed modification, its justification and benefits.
- Identifies the planning context of the proposed modification, including any conditions of consent with which the modified project cannot comply.
- Describes consultation undertaken with reference to the proposed modification.
- Identifies and assesses any changes to the nature and level of impacts that would occur as a consequence of the proposed modification.
- Considers whether additional mitigation strategies would be required to manage the impacts of the proposed modification.

Concludes that on balance, the modified project would be substantially the same and result in minor additional impacts which can be managed and is therefore considered justifiable.

2 MODIFICATION DESCRIPTION

2.1 PROPOSED MODIFICATION

The modified solar farm development footprint is illustrated in Appendix A in comparison to the approved footprint.

The key infrastructure components of the modified project are equivalent to the approved project, as described in the EIS. They include:

- Solar arrays comprised of approximately 364,000 modules (solar panels).
- Mounting frames: single axis-tracker units or fixed mounting frames.
- Inverter stations: between 24 and 55 inverter stations, each containing an inverter between 2.2 and 4.92MW capacity and a 400V/22-33kV transformer.
- Cabling, electrical connections and switch-gear, attached to the mounting frame structures, to interconnect modules.
- Underground cabling interconnecting arrays and inverter stations.
- An onsite substation containing one 22-33/132kV transformer and associated switchgear.
- Internal access tracks to allow for proposal maintenance of modules, inverters and vegetation management.
- Permanent staff amenities and offices with a small number of permanent parking spaces for the minimal staff required and occasional visitors.
- Perimeter security fencing: a chain-link/ barbed-wire security fence up to 3 m in height.
- Specific native vegetation screening from specific visual impact locations.

The modification proposed is to expand the solar farm development footprint into the south-western portion of the site. The development footprint would increase from the approved 177 ha to approximately 200 ha.

The south-western portion of the site is previously disturbed due to farming activities and is relatively flat. This area is already fragmented and surrounded by crops. The modified development footprint would be more similar to that shown in the publicly exhibited EIS. However, the development footprint will continue to avoid a dam with remnant vegetation in the south-western portion of the site, approximately 0.84ha. The modified development footprint would result in the dam and native vegetation to be surrounded by project infrastructure (a 10m buffer on above ground infrastructure is proposed in this area). A 40m buffer from Boggy Cowal would be retained. The expansion would not involve the removal of any native vegetation. No other changes to the project are proposed in the modification.

2.2 JUSTIFICATION FOR THE MODIFICATION

Expansion of the development footprint would make best use of the site for the generation of electricity over the 25-30 year life of the project. The area of expansion is a cropped paddock that is flat and therefore suitable for the installation of panel mounts and access tracks. The area of expansion has good exposure to the solar resource making it highly suitable for accommodating solar arrays.

2.3 PROJECT BENEFITS

The benefits of the Nevertire Solar Farm would remain unchanged. The project would still result in a number of benefits such as:

- Generation of approximately 263,000 MWh per annum of renewable electricity which is enough to supply electricity for 44,000 average NSW households (AER, 2014).
- Displacement of approximately 221,000 tonnes of CO_2 equivalent greenhouse gas emissions per year (Department of Environment and Energy, 2016).
- Diversification of fuel sources for electricity generation on the NEM, therefore increasing energy security.
- Creation of local job opportunities.
- Injection of expenditure in the local area.
- Development of a new land use thereby diversifying the regional economy.

3 PLANNING CONTEXT

3.1 ENVIRONMENTAL PLANNING AND ASSESSMENT ACT 1979

Under Section 96 of the *Environmental Planning and Assessment Act 1979* (EP&A Act), a State Significant Development (SSD) can be modified. This can be done where the modified development remains 'substantially the same' as the original approved development. An applicant can apply to the Minister for Planning to modify an SSD approval and lodge a request for assessment of a modification with the Department of Planning and Environment.

Clause 96 (1A) refers to modifications involving minimal environmental impact. It states that;

> *A consent authority may, on application being made by the applicant or any other person entitled to act on a consent granted by the consent authority and subject to and in accordance with the regulations, modify the consent if:*
>
> > *(a) it is satisfied that the proposed modification is of minimal environmental impact, and*
> >
> > *(b) it is satisfied that the development to which the consent as modified relates is substantially the same development as the development for which the consent was originally granted and before that consent as originally granted was modified (if at all).*

This Modification Report addresses these stipulations. Section 5 addresses the nature and level of environmental impact that would result from the modification and finds that the additional impacts would be minimal.

Section 2 sets out the description of the modified proposal, which can be seen to be substantially the same as the development for which the consent was originally granted.

3.2 CONDITIONS OF CONSENT

Considering whether the modified project was able to meet specific conditions of consent, a consistency review was undertaken, provided in Appendix B. The review found the modification of the development footprint would not meet two Development Consent conditions.

Condition 2 of Schedule 2 of the Development Consent states that the development must be *'generally in accordance with the EIS'.* Given the change in the development footprint by 23 ha, the modified layout may be considered as not complying with this condition of consent.

Condition 6 of Schedule 2 of the Development Consent requires that:

> *Over time, the Applicant may upgrade the solar panels and ancillary infrastructure on site provided these remain within the approved development footprint of the site. Prior to carrying out any such upgrades, the Applicant must provide revised layout plans of the development to the Secretary incorporating the proposed upgrades.*

As above, given the change in the development footprint by 23 ha, the modified layout may be considered as not complying with this condition of consent.

All other conditions of consent can be met by the modified project.

4 CONSULTATION

Consultation regarding the proposed modification has been undertaken with agencies and affected members of the community.

Nevertire Solar consulted with representatives from DPE. An email was sent on 10th August 2017 outlining the proposed modification and seeking comment. DPE responded on 11 August 2017.

NGH Environmental emailed OEH on 10th August 2017 outlining the proposed modification and seeking comment on biodiversity matters. In a phone meeting, NGH Environmental explained the key changes and assessment of impacts. A letter was received from OEH on 7 September 2017, regarding this modification which concluded OEH were satisfied with the report. Refer to Appendix E.

Nevertire Solar consulted with neighbours and members of the community using the development footprint contained in the publicly exhibited EIS. This layout included development within the south-western portion of the site.

No further consultation was required with Registered Aboriginal Parties, as the consultation undertaken in accordance with clause *80C of the National Parks and Wildlife Amendment (Aboriginal Objects and Aboriginal Places) Regulation 2010* was based on the layout provided within the publicly exhibited EIS. This layout included development within the south-western portion of the site.

5 CHANGES TO THE NATURE AND MAGNITUDE OF IMPACTS

5.1 COMPARISON OF ASSESSED, APPROVED AND MODIFIED LAYOUTS

As discussed, the development footprint presented within the publicly exhibited EIS did include assessment of the development of the south-western portion of the site as well as the removal of the remnant native vegetation surrounding a dam in this area. It therefore assessed the impacts of the currently proposed expanded footprint within this area. The development footprint totalled 200 ha.

For the Submissions Report (upon which the Development Consent is based), the development footprint was reduced, excluding the south-western portion of the site (identified as potential Sloane's froglet habitat) and a dam and associated remnant native vegetation. This reduced the impact on native vegetation and removed the requirement for offsetting and further targeted surveys. The development footprint totalled 177 ha in the Submissions Report.

The proposed modification layout lies between these two layouts, but is closer to that presented in the EIS. It now includes all potential Sloane's froglet habitat in the south-western portion of the site, but avoids the dam and native vegetation surrounding the dam. Therefore, the modification development footprint has an increased level of impact than that presented within the Submissions Report and Development Consent. However, the modification development footprint has an equivalent or marginally reduced level of impact compared to the publicly exhibited EIS., approximately 0.83 ha.

Table 5-1 outlines the change in development footprint impact areas for the publicly exhibited EIS, Submissions Report (Development Consent) and Modification. Due to rounding, the publicly exhibited EIS and modified development footprint appear as the same area of impact. The modified development footprint will now avoid 0.84 ha of native vegetation.

Table 5-1 Area of impact for each development footprint presented.

Report	Area of impact
Publicly exhibited EIS – February 2017	200 ha
Submissions Report and Development Consent July 2017	177 ha
Modification August 2017	<200 ha

With regard to mitigation measures, the change to the development footprint within the Submission Report resulted in:

- The removal of three biodiversity related mitigation measures that had been included in the EIS. As the potential Sloane's froglet habitat and all native vegetation were avoided in the Submissions Report layout, no further surveys or offset commitments were required and these measures were removed.
- An update of one water management mitigation measure. The measure was updated to ensure the proposal would be undertaken in accordance with DPI Water's Guidelines for Controlled Activities on Waterfront Land (2012) to reduce potential impacts to the waterway and Groundwater Dependent Ecosystems. It was not specifically related to the change in the development footprint.

No *new* mitigation measures were included in the Submissions Report and it is considered that the current environmental management commitments (contained within the consent and the Submissions Report) are sufficient to address the modified layout with the exception of biodiversity measures (this is further discussed below). With the retention of the 40m buffer of Boggy Cowal, the modified layout is still consistent with the updated water mitigation measure.

5.2 ASSESSMENT OF CHANGES TO IMPACT TYPES AND IMPACT MAGNITUDE

In order to assess whether the modification would result in any changes to nature or magnitude of impacts, the modification was evaluated against the environmental assessment carried out for the project. Appendix C provides an assessment of whether the environmental impacts associated with the modification have been adequately assessed. Specifically, it identifies any changes in the nature or magnitude of impacts assessed in the EIS and Submissions Report for the proposal, in comparison with the modified layout. It addresses all environmental factors assessed for the project.

The findings of this assessment are summarised in Table 5-2 and key issues are discussed below.

5.2.1 New impact type

The assessment found the modification development footprint would result in one additional impact type that was not assessed in the EIS or Submissions Report. This relates the native vegetation being retained around the dam in the south-west corner of the site. Where the approved layout would have been located 10 m from this vegetation and to the east only, the modification layout would now surround this area. While a buffer of 10m to above ground infrastructure would be maintained to protect the remnant, indirect impacts to this remnant would now occur that were not previously assessed.

The 0.84ha of native vegetation was identified as moderate to good Poplar Box - Belah woodland on clay-loam soils on alluvial plains of north-central NSW within the Biodiversity Assessment Report on the basis of overstorey cover (NGH Environmental 2017). OEH noted it could be potential habitat for the Koala, although it is isolated within the cropped paddock. It is known to contain five hollow-bearing trees. The hollows were identified as potential habitat for of microbats, parrots, owls and arboreal mammals although nocturnal surveys did not target this area. The dam is constructed (not natural) and currently dry, however has potential to provide suitable foraging habitat for groups such as wading birds and ducks, in addition to suitable breeding habitat for frogs. Due to a sparse covering of aquatic vegetation the habitat is considered to be low quality (Figure 5-1). The remnant is surrounded by cropping land and therefore subject to noise, dust and soil disturbance as part of sowing and harvesting activities.

Figure 5-1 Dam located within the south western portion of the site, surrounded by native vegetation.

Being surrounded by PV panels, the native vegetation associated with the dam would have permanent array infrastructure within 10m of this vegetation. During operation, the arrays, up to 3m, could deter species from using the habitat. Ground dwelling species would be fenced out of the area as the perimeter fence would now include this area. Birds and bats may be deterred by the look of the panels or onsite activities. These features mean that the fenced off remnant would have less connection to the vegetation and Boggy Cowal to the west (approximately 216m). It is noted that operational traffic onsite would be of low level and unlikely to have a noticeable impact on use of the area. It is noted that current cropping activities would also deter species periodically (by comparison). Additionally, during operation, there is the potential for indirect impacts including a solar array microclimate and light spill to affect the use of this area.

Impact would be greater during construction. Noise associated with construction is likely to deter birds and bats. During peak construction (between 6 and 9 months), approximately 300 workers are expected to be onsite. Resident species utilising hollows in this area may be impacted during this time although limited if any night works are anticipated. Additional indirect risks include:

- Accidental spills and contamination resulting in pollution and degradation of the habitat.
- Weed encroachment
- Erosion and sedimentation -resulting in pollution and degradation of habitat.
- Dust generation, can inhibit the function of plant species and communities as well as impact on soils and dams through erosion and sedimentation.
- Increased vehicle traffic will increase the collision risk with fauna.

These risks can be managed.

The fencing out of the vegetation and the construction program would constitute additional impacts not previously assessed for the project. The 0.84 ha area of habitat contains hollows but is generally considered of low value given its small size and isolation. It is likely the vegetation to the west surrounding Boggy Cowal provides better habitat for threatened species including a higher abundance of hollows. On balance, the impacts identified are present to some extent given the current cropping and agricultural activities; operational impacts may be lower than existing disturbances, once the solar farm is constructed. A new mitigation measure is proposed to reduce the potential impacts on the waterway, vegetation and habitat features during construction. An alternative would be to remove the habitat and offset the small number of credits it would generate through payment into the OEH Offset Fund.

New mitigation measure:

- *A 10 m buffer (or buffer defined in accordance with the Australian Standard 4970-2009 Protection of Trees on Development Sites) would be established around the remnant native vegetation and dam to minimise indirect impacts to this area of habitat.*

5.2.2 Changed magnitude of impact

Based on the Appendix C assessment, and summarised in Table 5-2, the modification development footprint would have:

- An increased impact than that presented within the Submissions Report and Development Consent (and *marginally less* impact than that presented within the EIS) for five environmental factors:
    - Biodiversity
    - Soils
    - Hydrology, water use and water quality
    - Land Use impacts
    - Resource use and waste generation
- An increased impact than that presented within the Submissions Report and Development Consent (and *equivalent* impacts to that presented within the EIS) for four environmental factors.
    - Aboriginal Heritage
    - Noise and vibration
    - Visual Amenity
    - Climate and air quality
- An equivalent impact to that presented within the Submissions Report and Development Consent (and within the EIS) for five environmental factors.
    - Traffic, transport and road safety
    - Magnetic fields
    - Historic Heritage
    - Bush fire risk
    - Community and socio-economic

Table 5-2 Summary of the assessment of the changes and magnitude of environmental impact (Extract from Appendix C).

Relevant EIS section	Environmental factor	Comment
6.2	Biodiversity	The modification development footprint impact area would be: • Greater than that presented within the Submissions Report and Development Consent; and additional 23 ha of array would be constructed in areas that are currently cropped. No native vegetation would be directly impacted. • Marginally less than that presented within the EIS; 0.84ha of native vegetation and habitat features (5 hollows and a dam) would be avoided. One new impact type was identified for the modification development footprint. There is the potential to fragment and increase indirect impacts on the dam and native vegetation surrounding the dam located in the south-western portion of the site. A new mitigation measure is proposed: • A 10 m buffer (or buffer defined in accordance with the Australian Standard 4970-2009 Protection of Trees on Development Sites) would be established around the remnant native vegetation and dam to minimise indirect impacts to this area of habitat.
6.3	Aboriginal heritage	The modification development footprint impact area would be: • Greater than that presented within the Submissions Report and Development Consent; and additional 23 ha of array would be constructed in areas that are currently cropped. • Marginally less than that presented within the EIS; 0.84 ha would be avoided. It is considered that all development footprints have the same nature and level of impact. The modified development would still result in the potential to directly impact the three recorded isolated finds. Additionally, the recorded scarred tree would continue to be avoided. The existing mitigation strategy will remove identified artefacts within the modified layout. Consultation has been undertaken referencing the larger EIS layout. No changes to mitigation measures or additional consultation are required.
6.4	Noise and vibration	On the basis of larger development footprint (23 ha), the modification would result in a marginal increase in potential noise and vibration impacts during construction than presented in the Submission Report. The noise assessment provided within the EIS assessed a marginally larger footprint (by 0.84 ha). The modified layout would not change the findings or mitigation strategy presented in the EIS due to the closest receiver being the same distance away from the development footprints.

Relevant EIS section	Environmental factor	Comment
		There would be no changes in the nature of the potential noise and vibration and existing mitigation measures are sufficient to address the modified layout.
6.5	Visual amenity	The modification has the potential to increase the visual impacts compared to the Submission Report and Approved Layout. The modification results in extending the solar array by 23 ha in the south-west corner of the site. If it were unmitigated, this would increase the visual impact for the two receivers (the closest residential receiver and a roadside viewpoint representing traffic along the Mitchell Highway) south of the site. These two receivers were assessed as a medium impact within the VIA which assessed the larger array footprint. Onsite screening was proposed to break up the views of the proposed infrastructure for these viewpoints and this remains a commitment of the project. Considering the impacts assessed in the EIS (and VIA), the visual impact of the modified layout would be marginally reduced with the retention of native vegetation around the dam; this additional vegetation, while sparse, will contribute to 'breaking up' and therefore softening the view of the arrays from southern viewpoints. The vegetation screening proposed for the approved layout would sufficiently reduce the potential impacts of the modification development footprint as it extends along the full length of the southern boundary, breaking up the views for the closest residential receiver and traffic along the Mitchell Highway. Refer to Appendix F; photomontages, which uses the EIS layout, demonstrate how effective the proposed screening would be at a distance representative of the closest residential receiver, and view seen from the southern roadside. There would be no changes in the nature of the potential visual impacts and existing mitigation measures are sufficient to address the modified layout.
7.1	Soil	The modification development footprint impact area would be: • Greater than that presented within the Submissions Report and Development Consent; and additional 23 ha of array would be constructed in areas that are currently cropped. • Marginally less than that presented within the EIS; 0.84 ha would be avoided. There would be no changes in the nature of the potential soil impacts and existing mitigation measures are sufficient to address the modified layout.
7.2	Hydrology, water use and water quality	The modification development footprint impact area would be:

Relevant EIS section	Environmental factor	Comment
		• Greater than that presented within the Submissions Report and Development Consent; and additional 23 ha of array would be constructed in areas that are currently cropped. • Marginally less than that presented within the EIS; 0.84 ha would be avoided. There would be no changes in the nature of the potential water impacts and existing mitigation measures are sufficient to address the modified layout.
7.3	Traffic, transport and road safety	It is considered there would be no changes in the level or nature of the potential impacts relating to traffic. Existing mitigation measures are sufficient to address the modified layout.
7.4	Land use impacts (including mineral resources)	The modification development footprint impact area would be: • Greater than that presented within the Submissions Report and Development Consent; and additional 23 ha of array would be constructed in areas that are currently cropped. • Marginally less than that presented within the EIS; 0.84 ha would be avoided. There would be no changes in the nature of the potential land use impacts and existing mitigation measures are sufficient to address the modified layout.
7.5	Resource use and waste generation	The modification development footprint impact area would be: • Greater than that presented within the Submissions Report and Development Consent; and additional 23 ha of array would be constructed in areas that are currently cropped. • Marginally less than that presented within the EIS; 0.84ha would be avoided. There would be no changes in the nature of the potential resource use and waste impacts and existing mitigation measures are sufficient to address the modified layout.
7.6	Magnetic fields	It is considered there would be no changes in the level or nature of the potential impacts relating to magnetic fields. Existing mitigation measures are sufficient to address the modified layout.
7.7	Climate and air quality	The modification would result in a marginal increase in potential climate and air quality impacts as that of the Submission Report and Approved Layout, 23 ha. The assessment of climate and air quality impacts provided within the EIS assesses the potential impacts of the modification development footprint.

Relevant EIS section	Environmental factor	Comment
		There would be no changes in the nature of the potential climate and air quality impacts and existing mitigation measures are sufficient to address the modified layout.
7.8	Historic heritage	It is considered there would be no changes in the level or nature of the potential impacts relating to historic heritage. Existing mitigation measures are sufficient to address the modified layout.
7.9	Bush fire risk	It is considered there would be no changes in the level or nature of the potential impacts relating to bush fire risk. Existing mitigation measures are sufficient to address the modified layout.
7.10	Community and Socio-economic	It is considered there would be no changes in the level or nature of the potential impacts relating to community and socio-economic. Existing mitigation measures are sufficient to address the modified layout.

6 SUMMARY

6.1 CONDITIONS OF CONSENT

A consistency review of the Conditions of Consent for the Nevertire Solar Farm, provided in Appendix B, found the modification of the development footprint would not meet two of the Development Consent conditions:

- Condition 2 of Schedule 2
- Condition 6 of Schedule 2

Both of these relate to the expanded development footprint; an increase of 23 ha.

The development footprint provided in the Development Consent would require an update based on the modified layout (provided in this Modification Report in Appendix A) in order to make the modification compliant.

All other conditions of consent can be met by the modified project.

6.2 IMPACT TYPES AND MAGNITUDE

This assessment has demonstrated that the proposed modification would have either an equivalent or lesser (by 0.84 ha of native vegetation that would now be retained within the array) environmental impact than that assessed within EIS. However, the environmental impact would be either an equivalent or marginally greater (by 23 ha of cropped paddock that would now be used for the array infrastructure) impact than that assessed within the Submissions Report and allowed for by the Development Consent.

It was identified that the modification would result in one new impact type, fragmentation of the 0.84 ha of native vegetation and dam that is now being avoided and will be surrounded by above on ground infrastructure. The fragmentation has potential to result in indirect impacts on the vegetation and habitat features. The risk was considered low due to the quality of the vegetation and habitat, and with the implementation of an additional mitigation measure to minimise the potential impacts. Table 6-1 outlines the new biodiversity mitigation measure proposed for the modified development footprint.

Table 6-1 The following additional environmental safeguard is proposed.

Environmental Safeguard	C	O	D
• A 10 m buffer (or buffer defined in accordance with the Australian Standard 4970-2009 Protection of Trees on Development Sites) would be established around the remnant native vegetation and dam to minimise indirect impacts to this area of habitat	C	O	D

No other changes to mitigation strategies are required.

7 DEVELOPMENT CONSENT CONCLUSION

This modification report outlines Nevertire Solar ’s proposal to expand the Approved Nevertire Solar Farm development footprint into the south-western portion of the site. The expansion of the development footprint would increase it from 177 ha to 200 ha; an increase of 23 ha. This area was assessed in the proposal’s EIS but subsequently avoided in the layout presented in the Submissions Report and Development Consent for the project.

The modification would allow Nevertire Solar to utilise adjacent cropped land. The south-western portion of the site is previously disturbed due to farming activities and is relatively flat. The expansion of the development footprint would not involve the removal of any native vegetation. Recently undertaken targeted surveys for the threatened Sloane’s Froglet (*Crinia sloanei*) within the previously identified potential breeding habitat found no evidence of the species and concluded they were highly unlikely to occur or be impacted by the development.

This assessment has found that the proposed modification is substantially the same as the approved project. Minor changes to the conditions of consent and mitigation measures would address the additional impacts identified. The benefits of expanding the development footprint are considered to be justified in the context of the environmental assessment and ability to effectively mitigate associated impacts.

8 REFERENCES

NGH Environmental, 2017a, Nevertire Solar Farm Aboriginal Cultural Heritage Assessment, report prepared for Nevertire Solar Pty Ltd.

NGH Environmental, 2017b, Nevertire Solar Farm Biodiversity Assessment Report, report prepared for Nevertire Solar Pty Ltd.

NGH Environmental, 2017c, Nevertire Solar Farm Environment Impact Statement, report prepared for Nevertire Solar Pty Ltd.

NGH Environmental, 2017d, Nevertire Solar Farm Submissions Report, report prepared for Nevertire Solar Pty Ltd.

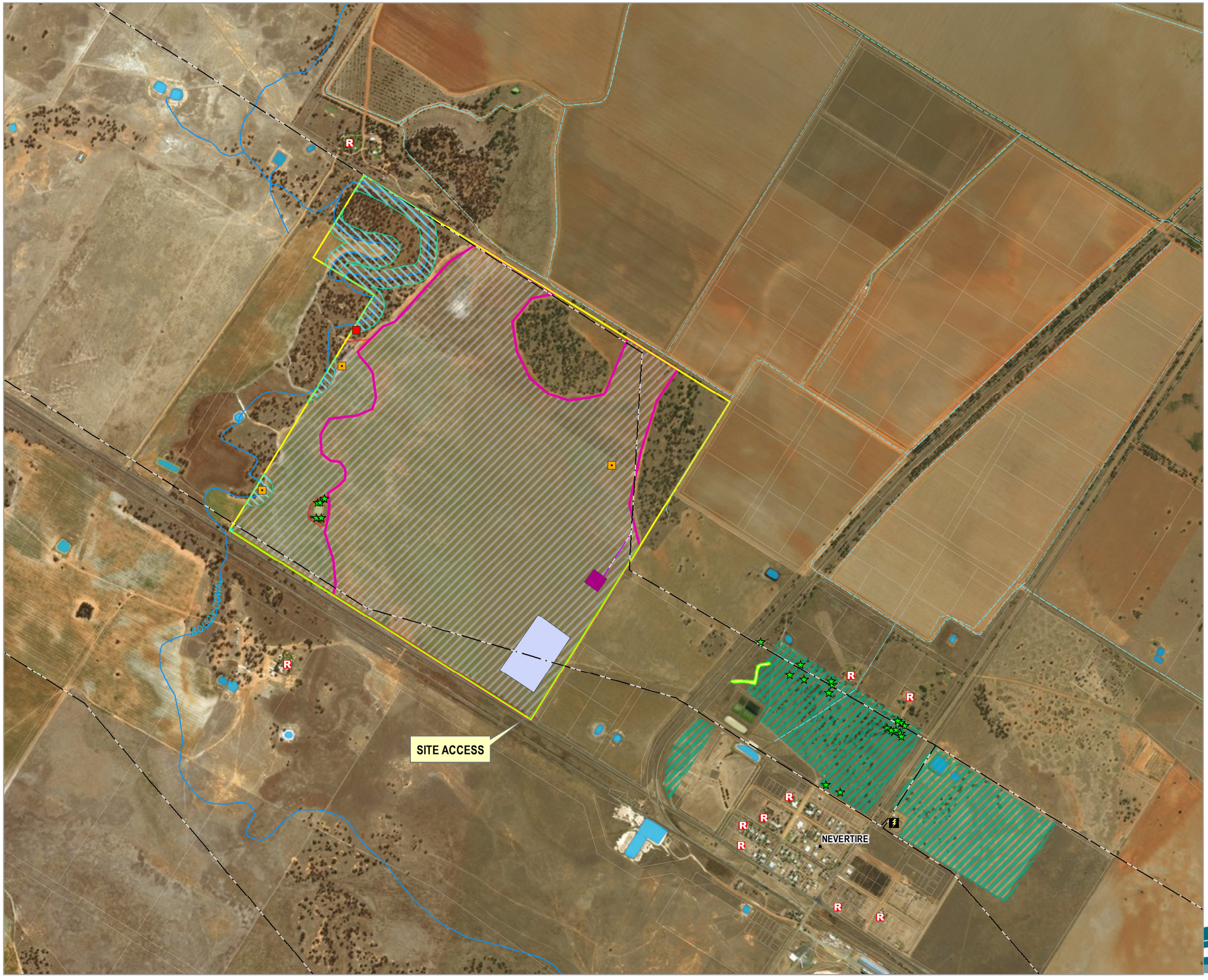
NGH Environmental, 2017e, Nevertire Solar Farm Visual Impact Assessment, report prepared for Nevertire Solar Pty Ltd.

APPENDIX A LAYOUTS

A. 1 Comparison of EIS, Submissions Report and Modification Layout

A. 2 Modification Layout (proposed to replace that shown in the consent)

NEVERTIRE SOLAR FARM



- Residence
- Vegetated buffer (Poplar Box – Belah Woodland community species): 5m wide
- Isolated find (Aboriginal artefacts)
- Scarred tree (Aboriginal site)
- Hollow bearing tree
- Myall Woodland (PCT 27) EEC
- Boggy Cowal avoidance buffer (40m)
- Substation
- Proposed transmission line (indicative)
- Existing transmission (Tx) line
- Canal / drain
- Drainage line
- Farm dam or other water body
- Travelling stock reserve
- Proposal site (Lot 26 DP 755292)
- Cadastre
- Proposed substation, maintenance building and staff amenities
- Construction office, carpark and laydown area
- Approved development footprint
- Modification development footprint

0 100 200 400 Metres

A3 @ 1:15000
Ref: SW097_20170808
Author: SP Date: 15/08/2017

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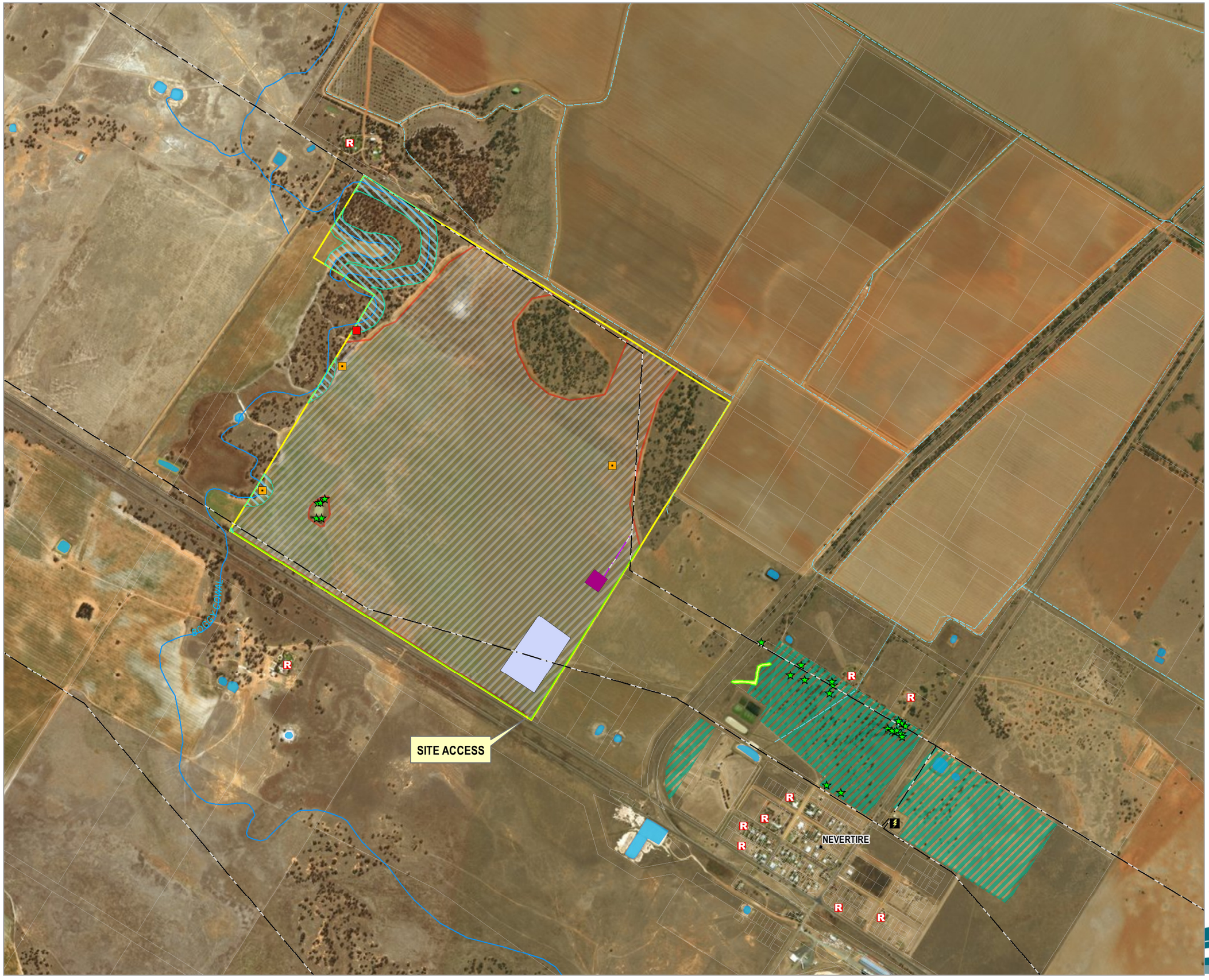

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- Canal / drain
- Drainage line
- Farm dam or other water body
- Travelling stock reserve
- Proposal site (Lot 26 DP 755292)
- Cadastre
- Proposed substation, maintenance building and staff amenities
- Construction office, carpark and laydown area
- Development footprint

0 100 200 400 Metres

A3 @ 1:15000
Ref: SW097_20170808
Author: SP Date: 8/08/2017

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APPENDIX B CONSISTENCY REVIEW CHECKLIST

This checklist assesses whether the conditions of consent can be met by the modified layout.

Condition ID		Condition of Consent	Do proposed changes affect ability to meet condition?
Administrative Conditions			
Obligation to Minimise Harm to the Environment			
1		In addition to meeting the specific environmental performance criteria established under this consent, the Applicant must implement all reasonable and feasible Measures to prevent and minimise material harm to the environment from construction, operation, upgrades and decommissioning of the development must be implemented.	Consistent
Terms of Consent			
2.		The applicant must carry out the development a) In accordance with the EIS b) In accordance with the conditions of this consent	Not consistent - the development footprint has changed that was presented within the conditions of consent.
3.		If there is any inconsistency with the above documents, the most recent document must prevail to the extent of the inconsistency. However, the conditions of this consent must prevail to the extent of any inconsistency.	NA
4.		The Applicant must comply with any reasonable requirement/s of the Secretary arising from the Department's assessment of: a) Any strategies, plans or correspondence that are submitted in accordance with this consent; b) Any reports, reviews, or audits commissioned by the Department regarding compliance with this consent; and c) Implementation of actions or measures contained in these documents.	Consistent
Final Layout Plans			
5.		Prior to the commencement of construction, the Applicant must submit detailed plans of the final layout of the development to the Secretary, including details on the siting of solar panels and ancillary infrastructure.	Consistent
Upgrading of Solar Panels and Ancillary Infrastructure			
6.		Over time, the Applicant may upgrade the solar panels and ancillary infrastructure on site provided these remain within the approved development footprint of the site. Prior to carrying out any such upgrades, the Applicant must provide revised layout plans of the	Not consistent - the development footprint has changed that was presented within

		development to the Secretary incorporating the proposed upgrades.	the conditions of consent.
Work as Executed Plans			
7.		Prior to the commencement of operations, or following the upgrade of solar panels or ancillary infrastructure, the Applicant must submit work as executed plans of the development to the Department..	Consistent
Notification of Department			
8.		Prior to the commencement of construction, operations, upgrading or decommissioning of the development or the cessation of operations, the Applicant must notify the Department in writing of the date of commencement or cessation, of the relevant phase. If any of these phases of the development are to be staged, then the Applicant must notify the Department in writing prior to the commencement of the relevant stage, and clearly identify the development that would be carried out during the relevant stage.	Consistent
Structural Adequacy			
9.		The Applicant must ensure that all new buildings and structures, and any alterations or additions to buildings and structures, are constructed in accordance with the relevant requirements of the *Building Code of Australia*.	Consistent
Demolition			
10.		The Applicant must ensure that all demolition work on site is carried out in accordance with *Australian Standard AS 2601-2001: The Demolition of Structures*, or its latest version.	Consistent
Protection of Public Infrastructure			
11.		Unless the Applicant and the applicable authority agree otherwise, the Applicant must: a) Repair, or pay the full cost associated with repairing, any public infrastructure that is damaged by the development; and b) Relocate, or pay for the full costs associated with relocating, any public infrastructure that needs to be relocated as a result of the development. This condition does not apply to the upgrade and maintenance of the road network.	Consistent
Operation of Plant and Equipment			
12.		The Applicant must ensure that all plant and equipment used onsite, or in connection with the development is: a) Maintained in a proper and efficient condition b) Operated in a proper and efficient manner	Consistent
Environmental Conditions			
Transport			
1.		The Applicant must ensure that the:	Consistent

	Heavy Vehicle Restrictions	a) Development must not generate more than: • 45 heavy vehicles movements a day during construction, upgrading or decommissioning; or • 20 heavy vehicle movements a day during operations on the public road network. b) Length of any vehicles used for the development does not exceed 36.5 metres, unless the Secretary agrees otherwise.	
2.		The Applicant must keep accurate records of the number of heavy vehicles entering or leaving the site each day.	Consistent
3.	Access Route	All vehicular traffic associated with the development must travel to and from the project site via the Mitchell Highway and the approved site entry point.	Consistent
4.	Road Upgrades	Prior to the commencement of construction, the Applicant must upgrade the intersection with the Mitchell Highway to provide a new Channelised Right turn lane and an Auxiliary Left turn lane treatment to be able to accommodate the largest vehicle accessing the intersection, to the satisfaction of RMS, and in accordance with the Austroads Guide to Road Design (as amended by RMS supplements), unless the RMS agrees otherwise.	Consistent
5.	Site Access	Prior to the commencement of construction, the Applicant must construct the site entry point to be sealed for a minimum of 40 metres from the edge of the Mitchell Highway east bound travel lane to cater for the largest vehicle accessing the site, to the satisfaction of RMS and in accordance with the Austroads Guide to Road Design (as amended by RMS supplements), unless the RMS agrees otherwise.	Consistent
6.	Operating Condition	The applicant must ensure: a) The internal project site roadways are constructed as all-weather roadways. b) There is sufficient parking onsite, and no parking occurs on the public road network in the vicinity of the site. c) All vehicles are loaded and unloaded onsite, and enter and leave the site in a forward direction; and d) Vehicles leaving the site are in a clean condition and do not result in dirt being tracked onto the public road network.	Consistent
7.	Traffic Management Plan	Prior to the commencement of any road upgrades required under this consent, the Applicant must prepare a Traffic Management Plan for the development to the satisfaction of the Secretary. This plan must be prepared in consultation with the RMS and Council, and include: a) Details of the entire transport route to be used for development – related traffic;	Consistent

		b) The origin, destination, number, loads, weights and lengths, frequency, including peak and daily traffic volumes and destination of vehicles accessing/exiting the site; c) Details of the measures that would be implemented to minimise traffic safety issues and disruptions to local users of the transport route/s during construction, upgrading or decommissioning works, including: • temporary traffic controls, including detours and signage; • notifying the local community about project related traffic impacts, • minimising potential for conflict within school buses, rail services and other motorists as far as practicable; • scheduling of haulage vehicle movements to minimise convoy length or platoons; • responding to local climate conditions that may affect road safety such as fog, dust, wet weather; • responding to any emergency repairs or maintenance requirements. d) A driver's code of conduct that addresses: • travelling speeds; • procedures to ensure that drivers adhere to the designated transport routes; and • procedures to ensure the driers implement safe driving practises and manage driver fatigue, particularly if using roads through Nevertire. Following approval, the Applicant must implement the plan.	
Landscaping			
8.	Vegetated Buffer	The Applicant must establish and maintain a mature vegetation buffer around the site at the locations outlined in the figure, the satisfaction of the Secretary. This buffer must: a) Be planted prior to the commencement of operations; b) Be effective at screening views of the solar panel and ancillary infrastructure on site from surrounding residences within 3 years of the commencement of construction; c) Minimise the glare from solar panels on road users; and d) Be properly maintained and kept free of weeds.	Consistent
9.	Landscaping Plan	Prior to the commencement of construction, the Applicant must prepare a detailed Landscaping Plan for the site in consultation with RMS, OEH and Council, to the satisfaction of the Secretary. The plan must include:	Consistent

		a) Include a description of measures that would be implemented to ensure that the vegetated buffer achieves the objectives of conditions 8(b)-(d) of this consent; b) Include a program to monitor and report on the effectiveness of these measures; and c) Include details on who would be responsible for monitoring, reviewing and implementing the plan, and timeframes for completion of actions. Following approval, the Applicant must implement the plan.	
Land Management			
10.		The Applicant must protect vegetation and fauna habitat outside the approved disturbance area.	Consistent
11.		Following any construction or upgrading on site, the Applicant must: a) Restore the ground cover of the site as soon as practicable, using suitable species; b) Maintain ground cover; and c) Keep this ground cover free of weeds.	Consistent
Amenity			
12.	Construction, Upgrading and Decommissioning Hours	Unless the Secretary agrees otherwise, the Applicant may only undertake construction, upgrading or decommissioning actives on site between: a) 7am-6pm, Monday to Friday; b) 8am-1pm, Saturdays; and c) At no time on Sundays or public holidays. The following construction, upgrading or decommissioning activities may be undertaken outside these hours without the approval of the Secretary: • The delivery of materials as requested by the NSW Police Force or other authorities for safety reasons; or • Emergency work to avoid the loss of life, property and/or material harm to the environment	Consistent
13.	Noise	The Applicant must minimise the noise generated by any construction, upgrading or decommissioning activities on site in accordance with the best practice requirements outlined in the Interim Construction Noise Guideline (DECC, 2009), or its latest version.	Consistent
14.	Dust	The Applicant must minimise the dust generated by the development.	Consistent
15.	Visual	The Applicant must: a) Minimise the off-site visual impacts of the development, including the potential for any glare or reflection from the solar panels; b) Ensure the visual appearance of all ancillary infrastructure (including paint colours) blends	Consistent

		in as far as possible with the surrounding landscape; and c) Not mount any advertising signs or logos on site, except where required for safety purposes.	
16.	Lighting	The Applicant must: a) Minimise the off-site lighting impacts of the development; and b) Ensure that all external lighting associated within the development: • Is installed as low intensity lighting (except where required for safety or emergency purposes); • Does not shine above the horizontal • Complies with *Australian Standard AS4282 (INT) 1997 – Control of Obtrusive Effects of Outdoor Lighting*, or its latest version.	Consistent
Heritage			
17.	Discovery of Human Remains	If human remains are discovered on site, then all work surrounding the area must cease, and the area must be secured. The Applicant must notify OEH as soon as possible following the discovery, and work must not recommence in the area until this is authorised by OEH.	Consistent
18.	Chance Finds Protocol	Prior to the commencement of construction, the Applicant must prepare a Chance Finds Protocol for the development in consultation with the Aboriginal Stakeholders, and to the satisfaction of OEH. Following approval, the Applicant must implement the Chance Finds Protocol.	Consistent
19.	Management of Aboriginal Heritage Items	The Applicant must carry out the following in consultation with OEH and the Aboriginal stakeholders: a) Record the identified heritage items on site and submit the standard documentation to the Aboriginal Heritage Information Management System prior to construction; b) Relocate any heritage items that would be disturbed by the development to suitable alternative locations on the site prior to construction; and c) Protect all heritage items on site, including those that would remain in situ as well as those that are relocated, from any impact.	Consistent
Soil and Water			
20.	Water Pollution	The Applicant must ensure that the development does not cause any water pollution, as defined under Section 120 of the POEO Act.	Consistent
21.	Soil Erosion	The Applicant must: a) Minimise any soil erosion associated with the construction, upgrading or decommissioning of the development in accordance with the relevant requirements in the *Managing Urban*	

		Stormwater: Soils and Construction (Landcom, 2004) manual, or its latest version; and b) Ensure the solar panels and associated infrastructure are designed, constructed and maintained to avoid causing any tunnel erosion on site.	
Hazards			
22.	Storage and handling of Dangerous Goods	The Applicant must: a) Store and handle all dangerous or hazardous materials on site in accordance with *AS1940-2004: The storage and handling of flammable and combustible liquids*, or its latest version; b) Ensure the substation is suitably bunded; and c) Minimise any spills of hazardous materials or hydrocarbons, and clean up any spills as soon as possible after they occur.	Consistent
23.	Operating Conditions	The Applicant must: a) Minimise the fire risks of the development. b) Ensure that the development: • Complies with the relevant asset protection requirements in the RFS's *Planning for Bushfire Protection 2006* (or equivalent;) and • is suitably equipped to respond to any fires on site; and c) assist the RFS and emergency services as much as practicable if there is a fire in the vicinity of the site.	Consistent
24.	Emergency response	Prior to the commencement of operations, the Applicant must prepare an Emergency Response Plan for the development in consultation with the RFS and Fire & Rescue NSW. This plan must identify the fire risks and controls of the development, and the procedures that would be implemented if there is a fire on site or in the vicinity of the site. A copy of the plan must be kept on site in a prominent position adjacent to both site entry points at all times.	Consistent
Waste			
25		The Applicant must: a) Minimise the waste generated by the development; b) Classify all waste generate on site in accordance with the EPA's *Waste Classification Guidelines 2014* (or its latest version); c) Store and handle all waste on site in accordance with its classification; d) Not receive or dispose of any waste on site; and e) Remove all waste from the site as soon as practicable, and ensure it is sent to	Consistent

		appropriately licensed waste facility for disposal.	
Decommissioning and Rehabilitation			
26.		Within 18 months of the cessation of operations, unless the Secretary agrees otherwise, the Applicant shall rehabilitate the site to the satisfaction of the Secretary. This rehabilitation must comply with the objectives in table 1.	Consistent
Environmental Management and Reporting			
Environmental Management			
1.	Environmental Management Strategy	Prior to the commencement of construction, the Applicant must prepare an Environmental Management Strategy for the development to the satisfaction of the Secretary. This strategy must: a) Provide the strategic framework for environmental management of the development; b) Identify the statutory approvals that apply to the development; c) Describe the role, responsibility, authority and accountability of all key personnel involved in the environmental management of the development; d) Describe the procedures that would be implemented to: • Keep the local community and relevant agencies informed about the operation and environmental performance of the development; • Receive, handle, respond to, and record complaints; • Resolve any disputes that may arise; • Respond to any non-compliance; • Respond to emergencies; and e) include: • Copies of any plans approved under the conditions of this consent; and • A clear plan depicting all the monitoring to be carried out in relation to the development. Following the Secretary's approval, the Applicant must implement the Environmental Management Strategy.	Consistent
2.	Revision of Strategies and Plans	The Applicant must: a) Update the strategies and plans required under this consent to the satisfaction of the Secretary prior to carrying out any upgrading or decommissioning activities on site; and b) Review and, if necessary, revise the strategies and plans required under this consent to the satisfaction of the Secretary within 1 month of the:	Consistent

		• Submission of an incident report under condition 3 below; or • Any modification to the conditions of consent.	
Incident Reporting			
3.		The Applicant must immediately notify the Secretary and any other relevant agencies of any incident on site. Within 7 days of the date of the incident, the Applicant must provide the Secretary and any relevant agencies with a detailed report on the incident, and such further reports as may be requested.	Consistent
Access to information			
4.		The Applicant must: a) Make the following information publicly available on its website as relevant to the stage of the development: • The EIS; • The final layout plans for the development; • Current statutory approvals for the development; • The proposed staging plans for the development if the construction, operation or decommissioning of the development is to be staged; • How complaints about the development can be made; • A complaints register; • Any other matter required by the Secretary; and b) Keep this information up to date, to the satisfaction of the Secretary.	Consistent
Mitigation measures			
	Biodiversity	• All hollow bearing trees identified would be avoided by the works.	Consistent
		• Preparation of a Flora and Fauna Management Plan (FFMP) that would incorporate protocols for: o Protection of native vegetation to be retained o Best practice removal and disposal of vegetation o Weed management o Unexpected threatened species finds o Rehabilitation of disturbed areas The FFMP would form part of the Nevertire Solar Farm Construction Environmental Management Plan (CEMP).	Consistent

		• Stockpiling materials and equipment and parking vehicles will be avoided within the dripline (extent of foliage cover) of any native tree. • Prior to the commencement of work, a physical vegetation clearing boundary at the approved clearing limit is to be clearly demarcated and implemented. The delineation of such a boundary may include the use of temporary fencing, flagging tape, parawebbing or similar.	
		• Where possible, use non barbed-wire on exterior fencing to minimise bird collision risks.	Consistent
		• Where possible, landscape plantings will be comprised of local indigenous species with the objective of increasing the diversity of the existing vegetation. Planting locations would be designed to improve the connectivity between patches in the landscape where consistent with landscaping outcomes.	Consistent
		• If night work is unavoidable, ensure any floodlights are directed away from vegetation.	Consistent
		• Weed and hygiene protocols will be prepared and implemented.	Consistent
		• During operation direct lights away from vegetation.	Consistent
		• Weed and planting protocols will be prepared and implemented	Consistent
		• Feral species to be monitored and a management plan to be prepared and implemented to reduce feral species abundance	Consistent
	Aboriginal Heritage	• The sites Nevertire Isolated Find 1, Nevertire Isolated Find 2 and Nevertire Isolated Find 3 are salvaged by an archaeologist and/or the Warren LALC prior to the proposed work commencing. The final storage place for the artefacts should be negotiated with the registered Aboriginal party.	Consistent
		• The development must avoid the site Nevertire Scarred Tree 1, as per the current design plans detailed in this report. A minimum 10m buffer around the tree should be in place to protect the root zone.	Consistent
		• Nevertire Solar 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	Consistent

		outline an unexpected finds protocol to deal with construction activity. Preparation of the CHMP should be undertaken in consultation with the registered Aboriginal party.	
		• 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.	Consistent
		• 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 party and may include further field survey.	Consistent
	Noise and vibration	• Implement noise control measures such as those suggested in Australian Standard 2436-2010 "Guide to Noise Control on Construction, Demolition and Maintenance Sites", to reduce predicted construction noise levels.	Consistent
		• Additionally, during construction: o Use less noisy plant and equipment where feasible and reasonable o Plant and equipment to be properly maintained. o Provide special attention to the use and maintenance of 'noise control' or 'silencing' kits fitted to machines to ensure they perform as intended. o Strategically position plant on site to reduce the emission of noise to the surrounding neighbourhood and to site personnel. o Avoid any unnecessary noise when carrying out manual operations and when operating plant. o Any equipment not in use for extended periods during construction work should be switched off. • Establish good relations with people living in the vicinity of the site at the beginning of proposal and maintain. Keep people informed, take complaints seriously, deal with complaints expeditiously. The community liaison member of staff should be adequately experienced.	Consistent

	Visual impact	• The materials and colour of onsite infrastructure will, where practical, be non-reflective and in keeping with the materials and colouring of existing infrastructure or of a colour that will blend with the landscape. Where practical: o Buildings will non-reflective and in eucalypt green, beige or muted brown. o Pole mounts will be non-reflective. • Security fencing posts and wire would be non-reflective; green or black rather than grey would reduce the industrial character of the fence.	Consistent
		• A Visual Impact Management Plan would be prepared to address the 'as built' visual impacts of the proposed solar farm. The plan would include: o Onsite vegetation screening for viewpoints 13, 30 and 39. This would be aimed at 'breaking up' not blocking views of onsite infrastructure, although sections of denser plantings may be considered for the residence to the immediate south of the site (Receiver 42), in consultation with this landowner (draft plan provided as Figure 6-13 of the EIS to show location of screening. Additional guidance on screening is provided in the VIA, Appendix G). o Verification of predicted and actual impacts. A post construction audit would be undertaken to assess the effectiveness of the screening layout with reference to the final constructed infrastructure and augment the former if required. • The final screening plan would be developed in consultation with the affected landowners (the residence 340m south-west of the site and managers of the Noel Waters Oval (where they wish to be consulted).	Consistent
		• Parking areas, material stock piles and other construction activities would be located as far as practical from nearby residences or screened (by existing vegetation or constructed screens) for the period of construction.	Consistent
		• Night lighting would be minimised to the maximum extent possible (i.e. manually operated safety lighting at main component locations). It would be directed away from the Mitchell Highway, so as not to cause light spill that may be hazardous to drivers.	Consistent

	Soils	• The array would be designed to allow sufficient space between panels to establish and maintain ground cover.	Consistent
		• A soil and water management plan, and erosion and sediment control plans, would be prepared, implemented and monitored during the proposal, in accordance with Landcom (2004), to minimise soil (and water) impacts. These plans would include provisions to: o Carry out soil testing prior to any impacts, to inform any soil treatments (such as application of gypsum in compacted areas and top soil management) and provide baseline information for the decommissioning rehabilitation. o Install, monitor and maintain erosion controls. o Ensure that machinery leaves the site in a clean condition to avoid tracking of sediment onto public roads which may cause risks to other road users through reduced road stability. o Manage topsoil: In all excavation activities, separate subsoils and topsoils and ensure that they are replaced in their natural configuration to assist revegetation. Stockpile topsoil appropriately so as to minimise weed infestation, maintain soil organic matter, maintain soil structure and microbial activity. o Minimise the area of disturbance from excavation and compaction; rationalise vehicle movements and restrict the location of activities that compact and erode the soils as much as practical. Any compaction caused during construction would be treated such that revegetation would not be impaired. o Ensure any discharge of water from the site is managed to ensure ANZECC (2000) water quality criteria are met. • Manage works in consideration of heavy rainfall events; if a heavy rainfall event is predicted, the site should be stabilised and work ceased until the wet period had passed.	Consistent
		• A ground cover management plan would be developed to ensure a stable ground cover during operation of the solar farm, minimising erosion and	Consistent

		adverse water quality impacts. The plan would be developed with reference to soil testing and with input from an Agronomist to ensure species selection and sodicity impacts are addressed. Highly managed grazing may be used to maintain the height of ground cover.	
		• A spill response plan would be developed as part of the overall risk management plan to prevent contaminants affecting adjacent surrounding environments. The plan would: o Manage the storage of any potential contaminants onsite. o Mitigate the effects of soil contamination by fuels or other chemicals (including emergency response and EPA notification procedures and remediation. • Ensure that machinery arrives on site in a clean, washed condition, free of fluid leaks.	Consistent
		• A protocol would be developed in relation to discovering buried contaminants within the proposal site (e.g. pesticide containers). It would include stop work, remediation and disposal requirements.	Consistent
	Hydrology, water use and water quality	• A 40m buffer would be maintained around Boggy Cowal in accordance with DPI Water's Guidelines for Controlled Activities on Waterfront Land (2012) to reduce potential impacts to the waterway and GDEs	Consistent
		• The final design would take into account the best available flood information and may include foundations up to 500mm above ground level. Electrical components would be designed to withstand inundation. The substation and office building would be located on the higher north-east portion of the site.	Consistent
		• Design would take into account: o Anchoring to resist short term flooding o Mounts used for infrastructure to resist short term flooding • Stage construction where necessary to avoid working in areas that are inundated with water.	Consistent
		• All staff would be appropriately trained through toolbox talks for the minimisation and management of accidental spills.	Consistent

		• All fuels, chemicals, and liquids would be stored at least 50 m away from any waterways or drainage lines and would be stored in an impervious bunded area.	Consistent
		• Adequate incident management procedures will be incorporated into the Construction Environmental Management Plan, including requirement to notify EPA for incidents that cause material harm to the environment (refer s147-153 *Protection of the Environment Operations Act*).	Consistent
		• The refuelling of plant and maintenance would be undertaken in impervious bunded areas on hardstand areas only.	Consistent
		• Machinery would be checked regularly to ensure there is no oil, fuel or other liquids leaking from the machinery.	Consistent
		• To mitigate temporary flooding impacts on infrastructure: o Design would take into account: ▪ Anchoring to resist short term flooding ▪ Mounts used for infrastructure to resist to short term flooding • Stage construction to avoid the short term periods where parts of the site are inundated with water.	Consistent
	Traffic, transport and road safety	• The proponent would consult with the Roads and Maritime Services regarding the proposed upgrading of the site access. The upgrade would be subject to detailed design, and must be designed and constructed to the standards specified by Roads and Maritime Services.	Consistent
		• A Haulage Plan would be developed with input from the roads authority, including but not limited to: o Assessment of road routes to minimise impacts on transport infrastructure. o Scheduling of deliveries of major components to minimise safety risks (on other local traffic). o Traffic controls (signage and speed restrictions etc.).	Consistent
		• A Traffic Management Plan would be developed as part of the CEMP, in consultation with Warren Council and Roads and Maritime. The plan would include, but not be limited to:	Consistent

		○ Assessment of road condition prior to construction on all local roads that would be utilised. ○ A program for monitoring road condition, to repair damage exacerbated by the construction and decommissioning traffic. ○ The designated routes of construction traffic to the site. ○ Carpooling/shuttle bus arrangements to minimise vehicle numbers during construction. ○ Scheduling of deliveries. ○ Community consultation regarding traffic impacts for nearby residents. ○ Consideration of cumulative impacts. ○ Consideration of impacts to the railway. ○ Traffic controls (speed limits, signage, etc.). ○ Procedure to monitor traffic impacts and adapt controls (where required) to reduce the impacts. ○ Providing a contact phone number to enable any issues or concerns to be rapidly identified and addressed through appropriate procedures.	
		• The proponent would repair any damage resulting from proposal traffic (except that resulting from normal wear and tear) as required at the proponent's cost.	Consistent
	Land use impacts	• Consultation with local community, to minimise impact of construction of adjacent agricultural activities and access.	Consistent
		• Consultation would be undertaken with Essential Energy regarding connection to the substation and design of electricity transmission infrastructure.	Consistent
		• Consultation would be undertaken with John Holland Rail regarding design of transmission line over the Nevertire Warren Railway line.	Consistent
		• A Rehabilitation Plan would be prepared to ensure the array site is returned to it pre solar farm land capability. The plan would be developed with reference to base line soil testing and with input from an Agronomist to ensure the site is left stabilised, under a cover crop or other suitable ground cover. The plan would reference:	Consistent

		○ Australian Soil and Land Survey Handbook (CSIRO, 2009) ○ Guidelines for Surveying Soil and Land Resources (CSIRO, 2008) ○ The land and soil capability assessment scheme: second approximation (OEH, 2012) • Below ground infrastructure that impedes cropping (less than 500mm depth) may be removed, subject to consultation with the land owner.	
		• The materials and colour of onsite infrastructure will, where practical, be non-reflective and in keeping with the materials and colouring of the landscape.	Consistent
	Resource use and waster generation	• A Waste Management Plan (WMP) would be developed in consultation with Warren Shire Council (with regard to disposal options). It would include but not be limited to: ○ Identification of opportunities to avoid, reuse and recycle, in accordance with the waste hierarchy. ○ Quantification and classification of all waste streams. ○ Provision for recycling management onsite. ○ Provision of toilet facilities for onsite workers and how sullage would be disposed of (i.e., pump out to local sewage treatment plant). ○ Tracking of all waste leaving the site. ○ Disposal of waste at facilities permitted to accept the waste. Consultation would be undertaken with local waste facility operators to ensure that loads do not exceed capacity. ○ Requirements for hauling waste (such as covered loads). ○ Disposal options for excess waste (Warren Shire has limited options available for the disposal of waste and other viable options will need to be implemented). ○ Wooden crates used on site will need to be thoughtfully disposed of offsite. The crates often cannot be chipped to be used as mulch due to chemical sprays used. • Septic system is installed and operated according to the local Warren Shire Regional Council regulations.	Consistent

	Magnetic fields	• All design and engineering would be undertaken by qualified and competent person/s with the support of specialists as required.	Consistent
		• Transmission lines would be located as far as practical from residences, farm sheds, and yards to reduce the potential exposure to EMFs.	Consistent
		• Design of electrical infrastructure would minimise EMFs.	Consistent
	Climate and air quality	• Development of a complaints procedure to promptly identify and respond to issues generating complaints.	Consistent
		• Protocols to guide vehicle and construction equipment use, to minimise emissions would be included in construction and operational environmental management plans. This would include but not limited to Australian standards and the POEO Act.	Consistent
		• Protocols would be included in construction and decommissioning to minimise and treat dust (water carts or similar in response to visual cues). This may involve installation of barriers such as shade cloth, to protect receivers.	Consistent
	Historic Heritage	• Should an item of historic heritage be identified, the Heritage Division (OEH) would be contacted prior to further work being carried out in the vicinity.	Consistent
	Bush fire risk	• A minimum 10m setback from native vegetation remnants would be incorporated into the final design.	Consistent
		• Develop a Bush Fire Management Plan to include but not be limited to: o Management of activities with a risk of fire ignition. o Management of fuel loads onsite. o Storage and maintenance of firefighting equipment, including siting and provision of adequate water supplies for bush fire suppression. This includes access to the onsite dam if required for fire emergency situations. o The below requirements of *Planning for Bush Fire Protection 2006* - ▪ Identifying asset protection zones	Consistent

		▪ Providing adequate egress/access to the site ▪ Emergency evacuation measures • Operational procedures relating to mitigation and suppression of bush fire relevant to the solar farm.	
	Community and Socio-economic impacts	• The Community Consultation Plan would be implemented to manage impacts to community stakeholders, including but not limited to: o Protocols to keep the community updated about the progress of the proposal and proposal benefits. o Protocols to inform relevant stakeholders of potential impacts (haulage, noise etc.). o Protocols to respond to any complaints received.	Consistent
		• Liaison with local industry representatives to maximise the use of local contractors, manufacturing facilities, materials.	Consistent
		• Liaison with local representatives regarding accommodation options for staff, to minimise adverse impacts on local services.	Consistent
		• Liaison with local tourism industry representatives to manage potential timing conflicts with local events.	Consistent

APPENDIX C ASSESSMENT OF THE NATURE AND MAGNITUDE OF ENVIRONMENTAL IMPACTS

This checklist assesses whether the environmental impacts associated with the modification have been adequately assessed. It identifies any changes in the nature or magnitude of impacts assessed in the EIS and Submissions report for the proposal.

Relevant EIS section	Environmental factor	Impact nature and magnitude			Comment
		Publicly Exhibited EIS (Development footprint 200 ha)	Submissions Report and Approved Layout (Development footprint 177 ha)	Modification (Development footprint <200 ha)	
6.2	Biodiversity	**Construction** Habitat loss (development footprint) of approximately 200ha. This includes: • 0.84 ha of moderate to good woodland native vegetation (Poplar Box - Belah woodland on clay-loam soils on alluvial plains of north-central NSW); This habitat was also identified as potential habitat for the Koala. • 22.72ha of potential [1]Sloane's Froglet Habitat (*Crinia sloanei*). • 5 Hollow-bearing trees Habitat loss consequences also include:	The development footprint was reduced to avoid the dam and native vegetation surrounding the dam located within the south-western portion of the site. The development footprint was reduced to 177ha, a reduction of 23ha. This included the development footprint no longer impacting on the native vegetation, potential Koala habitat, potential Sloane's Froglet habitat and hollow-bearing trees. The reduced development footprint would result in a marginal reduction for indirect impacts identified for construction and operation. The reduced development footprint would also reduce shading of the solar array infrastructure by 23ha. This is a reduction of 11.5%.	Changed development footprint to 200ha. This is a similar impact area compared to the EIS development footprint but an increased impact of 23ha than the Submissions Report and Approval impact area. The development footprint would not result in loss of native vegetation or hollow-bearing trees, as this vegetation is being avoided. The development footprint would also not result in the loss of Sloane's Froglet Habitat. Targeted surveys undertaken for the species concluded they are unlikely to occur on site, refer to Appendix D. The development footprint would result in a marginal reduction for indirect impacts identified for	The modification development footprint impact area would be:

[1] Surveys have confirmed this species is highly unlikely to use the site or be impacted.

		• Injury and mortality to fauna during clearing of fauna habitat. • Introduction and spread of noxious weeds and pathogens. • Disturbance to fallen timber, dead wood and bush rock. • Injury and mortality to fauna during clearing of fauna habitat. • Introduction and spread of noxious weeds and pathogens. • Disturbance to fallen timber, dead wood and bush rock. Indirect impacts from construction also includes the creation of barriers to fauna movement. **Operation** Shading by solar array infrastructure. Indirect impacts including risks for light spill, weed encroachment, increased vehicle traffic, solar array microclimate, fences, pest animals, and mobilisation of sediments.	The reduction in development footprint resulted in the removal of mitigation measures as outlined in the Submissions Report. These mitigation measures included: • If the loss of 0.84 ha of Poplar Box - Belah woodland on clay-loam soils on alluvial plains of north-central NSW cannot be avoided, the ecosystem credit requirements (calculated to generate 14 credits) would be offset according to the FBA. • Appropriately timed surveys (June – August) would be implemented to determine if Sloane's Froglet occurs within the development site. If identified within the development site either: o The proposal would be modified to avoid habitat for this species, or o The species credit requirements (calculated using the constructed impact area on mapped habitat) would be offset for the species according to the FBA. • Implement offset management plan which ensures that fauna movement still possible around perimeter of development site.	construction and operation and area of shading during operation, when compared to the EIS. However, the development footprint would result in a marginal increase for indirect impacts identified for construction and operation and area of shading during operation, when compared to the Submissions Report and Approval. With the development footprint now avoiding the 0.84ha of native vegetation surrounding the dam, this has resulted in the potential impact of fragmentation. The development footprint will surround the dam and vegetation, removing its connection to the vegetation to the west. There is also an increased risk of indirect impacts to the area, due to the surrounding of infrastructure. The potential impacts associated with fragmentation are considered low due to its existing fragmentation from the surrounding vegetation. It is surrounded by cropping and agricultural activities. It is also a small patch that was assessed within the Biodiversity Assessment Report (NGH Environmental 2017) as low quality habitat. It is likely the	• Greater than that presented within the Submissions Report and Development Consent; and additional 23 ha of array would be constructed in areas that are currently cropped. No native vegetation would be directly impacted. • Marginally less than that presented within the EIS; 0.84ha of native vegetation and habitat features (5 hollows and a dam) would be avoided. One new impact type was identified for the modification development footprint.

Relevant EIS section	Environmental factor	Impact nature and magnitude			Comment
		Publicly Exhibited EIS (Development footprint 200 ha)	**Submissions Report and Approved Layout (Development footprint 177 ha)**	**Modification (Development footprint <200 ha)**	
				vegetation to the west surrounding Boggy Cowal provides better habitat for threatened species including a higher abundance of hollows. A new mitigation measure is proposed to reduce the potential impact on the patch of native vegetation and dam: • A 10 m buffer (or buffer defined in accordance with the Australian Standard 4970-2009 Protection of Trees on Development Sites) would be established around the remnant native vegetation and dam to minimise indirect impacts to this area of habitat	There is the potential to fragment and increase indirect impacts on the dam and native vegetation surrounding the dam located in the south-western portion of the site. A new mitigation measure is proposed: • A 10 m buffer (or buffer defined in accordance with the Australian Standard 4970-2009 Protection of Trees on Development Sites) would be established around the remnant native vegetation and dam to minimise indirect impacts to this area of habitat.

Relevant EIS section	Environmental factor	Impact nature and magnitude			Comment
		Publicly Exhibited EIS (Development footprint 200 ha)	**Submissions Report and Approved Layout (Development footprint 177 ha)**	**Modification (Development footprint <200 ha)**	
6.3	Aboriginal heritage	The development footprint would disturb 200ha and considered to result in the direct impact of three sites, including Nevertire IF 1, Nevertire IF 2 and Nevertire IF 3. The impact to the scientific values of these sites was considered low. The isolated artefacts were also considered to have little research value. The scarred tree site, Nevertire ST 1, was founded to not be impacted by the solar farm proposal.	As above, the development footprint would disturbed 177 ha. This is a reduced disturbance area to the EIS. However it was considered that development footprint would still directly impact the three recorded isolated find sites, as well as continue to avoid the recorded scarred tree site.	As above, the development footprint would disturb 200ha. This is a similar disturbance area to the EIS but an increase in disturbance area when compared to the Submissions Report and Approval. As for the Submissions Report and EIS, it is considered the modified development footprint would still directly impact the recorded isolated find sites, as well as continue to avoid the recorded scarred tree site.	The modification development footprint impact area would be: • Greater than that presented within the Submissions Report and Development Consent; and additional 23 ha of array would be constructed in areas that are currently cropped. • Marginally less than that presented within the EIS; 0.84ha would be avoided. It is considered that all development footprints have the same nature and level of impact. The modified development would still result in the potential to directly

Relevant EIS section	Environmental factor	Impact nature and magnitude			Comment
		Publicly Exhibited EIS (Development footprint 200 ha)	**Submissions Report and Approved Layout (Development footprint 177 ha)**	**Modification (Development footprint <200 ha)**	
					impact the three recorded isolated finds. Additionally, the recorded scarred tree would continue to be avoided. The existing mitigation strategy will remove identified artefacts within the modified layout. Consultation has been undertaken referencing the larger EIS layout. No changes to mitigation measures or additional consultation are required.
6.4	Noise and vibration	The construction noise assessment found that the the construction management level at receiver R2, would be exceeded for the development footprint construction works. It would be exceed by 2 dB(A). It is noted that the construction noise levels at 6 other receivers would also exceed the construction management levels, however they would predominantly be affected by the transmission line construction works, which are no longer relevant to the project.	The potential noise impacts would be considered to be marginally reduced compared to that assessed within the EIS. This is due to the total reduced area of development footprint (23 ha) and its reduced development footprint area of impact close to R2.	The potential noise impacts would be considered to be greater than that compared to Submissions Report and Approval. However, the potential noise impacts would be considered similar to that outlined in the EIS. The development footprint would be the same distance away from the closest receiver R2, as that outlined in the EIS. Therefore it is likely during construction the predicted noise management levels	On the basis of larger development footprint (23 ha), the modification would result in a marginal increase in potential noise and vibration impacts during construction than presented in the Submission Report. The noise assessment provided within the EIS assessed a marginally

Relevant EIS section	Environmental factor	Impact nature and magnitude			Comment
		Publicly Exhibited EIS (Development footprint 200 ha)	**Submissions Report and Approved Layout (Development footprint 177 ha)**	**Modification (Development footprint <200 ha)**	
		The operational noise assessment found that the predicted noise levels presented at all nearby receivers would comply with the nominated criteria under all scenarios and meteorological conditions. It was also found that the predicted operational noise levels would be below the sleep disturbance criteria of 45 dB(A). The potential for adverse vibration impacts was determined to be very low. The road traffic noise assessment found that the road traffic noise level contributions from the truck movements associated with the construction works would be at least 5dB(A) below the applicable noise criteria.		would be exceeded at receiver R2 by 2 dB(A). The predicted operational and traffic noise, and vibration impacts would be consider to be compliant with the relevant criteria.	larger footprint (by 0.84 ha). The modified layout would not change the findings or mitigation strategy presented in the EIS due to the closest receiver being the same distance away from the development footprints. There would be no changes in the nature of the potential noise and vibration and existing mitigation measures are sufficient to address the modified layout.
6.5	Visual amenity	A medium impact was determined for three representative viewpoints. Onsite vegetation screening was proposed to break up views of the proposed infrastructure from these locations, along the southern and eastern boundaries. This would reduce the impact to a low and acceptable level for these three representative viewpoints. Generally, the low height infrastructure	The potential visual impacts would be considered to be reduced compared to that assessed within the EIS. This would be specifically for the two viewpoints to the south including the closet residential receiver and traffic along the Mitchell Highway. There would be no visual impact change for the viewpoint at Noel Waters Oval. This is due to the development footprint being reduced on the south-	The potential visual impacts would be considered to be greater than that compared to Submissions Report and Approval. The potential visual impacts would be considered similar to that outlined in the EIS due to the development footprint being similar. However the visual impact would be considered to be	The modification has the potential to increase the visual impacts compared to the Submission Report and Approved Layout. The modification results in extending the solar array by 23 ha in the south-west corner of the site. If it were unmitigated, this

Relevant EIS section	Environmental factor	Impact nature and magnitude			Comment
		Publicly Exhibited EIS (Development footprint 200 ha)	**Submissions Report and Approved Layout (Development footprint 177 ha)**	**Modification (Development footprint <200 ha)**	
		and onsite screening would minimise the view shed, and therefore making the visual impact low.	western portion of the site, which is visible for the viewpoints to the south. There would be no change to the development footprint for the Noel Waters Oval viewpoint. Even though it was considered there would be a reduced visual impact of the viewpoints to the south, the vegetation buffer proposed was not changed.	marginally less than the EIS as the modification development footprint is retaining the native vegetation around the dam.	would increase the visual impact for the two receivers (the closest residential receiver and a roadside viewpoint representing traffic along the Mitchell Highway) south of the site. These two receivers were assessed as a medium impact within the VIA which assessed the larger array footprint. Onsite screening was proposed to break up the views of the proposed infrastructure for these viewpoints and this remains a commitment of the project. Considering the impacts assessed in the EIS (and VIA), the visual impact of the modified layout would be marginally reduced with the retention of native vegetation around the dam; this additional vegetation, while sparse, will contribute to 'breaking up' and

Relevant EIS section	Environmental factor	Impact nature and magnitude			Comment
		Publicly Exhibited EIS (Development footprint 200 ha)	Submissions Report and Approved Layout (Development footprint 177 ha)	Modification (Development footprint <200 ha)	
					therefore softening the view of the arrays from southern viewpoints. The vegetation screening proposed for the approved layout would sufficiently reduce the potential impacts of the modification development footprint as it extends along the full length of the southern boundary, breaking up the views for the closest residential receiver and traffic along the Mitchell Highway. Refer to Appendix F; photomontages, which uses the EIS layout, demonstrate how effective the proposed screening would be at a distance representative of the closest residential receiver, and view seen from the southern roadside. There would be no changes in the nature of

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					the potential visual impacts and existing mitigation measures are sufficient to address the modified layout.
7.1	Soil	The development footprint has potential to disturb 200ha. Except for the perimeter track and small footings onsite for the inverters and substation, the majority the site's soil layer would not be impacted by the development; no large areas of reshaping or excavation are proposed. It is estimated that 3.2ha of soil will be disturbed. The disturbance of soils have the potential cause erosion and subsequent sedimentation, as well as generate dust. The construction of the solar farm also has potential to: • Compact soils • Disturb buried containments • Risk soil contamination through the use of fuels and chemicals onsite. The operation of the solar farm has the potential to lead to increased soil	The potential soil impacts would be considered to be reduced compared to that assessed within the EIS. This is due to the total reduced area of development footprint (23 ha).	The potential soil impacts would be considered to be greater (23 ha) than that compared to Submissions Report and Approval. However the potential soils impacts would be considered to be marginally reduced compared to that assessed within the EIS.	The modification development footprint impact area would be:

Relevant EIS section	Environmental factor	Impact nature and magnitude			Comment
		Publicly Exhibited EIS (Development footprint 200 ha)	**Submissions Report and Approved Layout (Development footprint 177 ha)**	**Modification (Development footprint <200 ha)**	
		erosion due to the concentrated runoff from the impervious surfaces created by the solar panels during significant rain events and could be influenced by seasonal droughts.			• Greater than that presented within the Submissions Report and Development Consent; and additional 23 ha of array would be constructed in areas that are currently cropped. • Marginally less than that presented within the EIS; 0.84 ha would be avoided. There would be no changes in the nature of the potential soil impacts and existing mitigation measures are sufficient to address the modified layout.

Relevant EIS section	Environmental factor	Impact nature and magnitude			Comment
		Publicly Exhibited EIS (Development footprint 200 ha)	**Submissions Report and Approved Layout (Development footprint 177 ha)**	**Modification (Development footprint <200 ha)**	
7.2	Hydrology, water use and water quality	The proposed works would involve a range of activities that would disturb soils and potentially lead to sediment laden runoff, affecting local water ways. Soil compaction would occur when hardstands and access tracks are created, which would reduce soil permeability thereby increasing run off and the potential for concentrated flows. The use of fuels and other chemicals (lubricants and herbicides), as well as concrete used onsite during construction and decommissioning, pose a risk of surface water contamination in the event of a spill. The non-potable water requirement during construction is estimated be up to 21,600 kL per annum. Potable water requirements for staff would be approximately 243 kL per annum. Water use volumes during operation would be minimal.	The potential water impacts would be considered to be reduced compared to that assessed within the EIS. This is due to the total reduced impact area of the development footprint (23 ha) and reduced water requirements.	The potential water impacts would be considered to be greater than that compared to Submissions Report and Approval. However the potential water impacts would be considered to be marginally reduced compared to that assessed within the EIS.	The modification development footprint impact area would be: • Greater than that presented within the Submissions Report and Development Consent; and additional 23 ha of array would be constructed in areas that are currently cropped. • Marginally less than that presented within the EIS; 0.84 ha would be avoided. There would be no changes in the nature of the potential water impacts and existing mitigation measures are

Relevant EIS section	Environmental factor	Impact nature and magnitude			Comment
		Publicly Exhibited EIS (Development footprint 200 ha)	**Submissions Report and Approved Layout (Development footprint 177 ha)**	**Modification (Development footprint <200 ha)**	
					sufficient to address the modified layout.
7.3	Traffic, transport and road safety	The potential traffic, transport and road safety impacts associated with construction of the solar farm relate primarily to the increased numbers of large vehicles on the road network which may lead to: • Increased collision risks (other vehicles, pedestrians, stock and wildlife). • Damage to road infrastructure • Associated noise and dust (particularly where traffic is on unsealed roads) which may adversely affect nearby receivers. • Disruption to existing services (public transport and school buses). • Reduction of the level of service on the road caused by platooning of construction traffic. It is considered unlikely that the low levels of operational traffic would obstruct public or private local access.	The potential traffic impacts would be considered to be similar compared to that assessed within the EIS.	The potential traffic impacts would be considered to be similar compared to that assessed within the EIS and Submissions Report and Approval.	It is considered there would be no changes in the level or nature of the potential impacts relating to traffic. Existing mitigation measures are sufficient to address the modified layout.

Relevant EIS section	Environmental factor	Impact nature and magnitude			Comment
		Publicly Exhibited EIS (Development footprint 200 ha)	**Submissions Report and Approved Layout (Development footprint 177 ha)**	**Modification (Development footprint <200 ha)**	
		Additional risks to road safety from operational traffic would be minimal.			
7.4	Land use impacts (including mineral resources)	The development footprint has potential to disturb 200 ha. Agricultural activities would cease in areas required for access and construction of the solar farm. During operation, the proposal site would change from agricultural land use to power generation. The loss of the array site (200 ha) for agricultural production during this period was not considered a significant (agricultural production or economic) loss in the locality. Due to the proposal being highly reversible, mineral exploration would not be sterilised in the long term, post decommissioning. It was considered after decommissioning, current agricultural activities or alternative activities including rural residential development or forestry could be resumed or undertaken. Impacts of glint and glare on aviation as a result of the proposed solar farm's infrastructure are considered to be	The potential land use impacts would be considered to be reduced compared to that assessed within the EIS. This is due to the total reduced area of development footprint (23ha).	The potential land use impacts would be considered to be greater (23 ha) than that compared to Submissions Report and Approval. However the potential land use impacts would be considered to be marginally reduced compared to that assessed within the EIS due to the minor reduced area of impact with the retaining of the dam and surrounding native vegetation.	The modification development footprint impact area would be: • Greater than that presented within the Submissions Report and Development Consent; and additional 23 ha of array would be constructed in areas that are currently cropped. • Marginally less than that presented within the EIS; 0.84ha would be avoided. There would be no changes in the nature of the potential land use impacts and existing

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		Publicly Exhibited EIS (Development footprint 200 ha)	**Submissions Report and Approved Layout (Development footprint 177 ha)**	**Modification (Development footprint <200 ha)**	
		minor and can be effectively managed with the implementation of the mitigation measures.			mitigation measures are sufficient to address the modified layout.
7.5	Resource use and waste generation	The proposal would approximately require the following resources: • Gravel, 2,200 m^3 • Sand (back filling trenches, inverters, substation), 3,860 m^3 • Metal (components for mounting system, inverters and delivery system containers), 827 tonnes • Glass for panels, 8728 tonnes • Water during construction, 21,600 kL. The supply of the materials required for the proposal were considered as limited or restricted. The solar farm was considered unlikely to place significant pressure on the availability of local or regional resources. Solid waste would be produced during all stages of the solar farm. Decommissioning of the site would involve the recycling and reuse of materials. Items that cannot be recycled	The potential waste impacts would be considered to be reduced compared to that assessed within the EIS. This is due to the total reduced area of development footprint (23ha) requiring less materials and producing less waste.	The potential waste impacts would be considered to be greater than that compared to Submissions Report and Approval. However the potential waste impacts would be considered to be marginally reduced compared to that assessed within the EIS. This relates to reduced requirements of resources and reduced waste produced with the marginally smaller development footprint.	The modification development footprint impact area would be: • Greater than that presented within the Submissions Report and Development Consent; and additional 23 ha of array would be constructed in areas that are currently cropped. • Marginally less than that presented within the EIS; 0.84 ha would be avoided. There would be no changes in the nature of the potential resource

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		or reused, would be disposed of in accordance with applicable regulations and to appropriate facilities. All above ground infrastructure would be removed from the site during decommissioning. Due to the size of the waste facilities within the Warren LGA, the disposal of waste at these facilities may place pressure on their resources and capacity.			use and waste impacts and existing mitigation measures are sufficient to address the modified layout.
7.6	Magnetic fields	There is low potential for EMF impacts during the construction and decommissioning phases of the project. During operation, EMF sources would include the substation, and the solar arrays incorporating 22-33kV underground cables. EMFs from the solar farm are likely to be indistinguishable from background levels at the boundary fence. The underground 22-33kV cabling would not produce external electric fields due to shielding from soil, and its magnetic fields would be limited in the order of 1 µT directly above the cabling and falling away to 0.7 µT at a distance of	The potential magnetic field impacts would be considered to be similar compared to that assessed within the EIS.	The potential magnetic field would be considered to be similar compared to that assessed within the EIS and Submissions Report and Approval.	It is considered there would be no changes in the level or nature of the potential impacts relating to magnetic fields. Existing mitigation measures are sufficient to address the modified layout.

Relevant EIS section	Environmental factor	Impact nature and magnitude			Comment
		Publicly Exhibited EIS (Development footprint 200 ha)	**Submissions Report and Approved Layout (Development footprint 177 ha)**	**Modification (Development footprint <200 ha)**	
		20 metres (EMFs.info 2016). These are below the criteria The onsite substation would also be located within fenced proposal site. While there are number of EMF sources within a substation, design procedures relating to equipment selection, layout, electrical connection techniques and compound size, would ensure the EMFs produced by the equipment within the station would also be typically indistinguishable from background levels beyond the substation fence.			
7.7	Climate and air quality	During construction, dust would be generated by earthworks associated with trenching, construction of access tracks and footings, and pile driving of poles for module frames. Emissions would be generated from earth-moving equipment, diesel generators, trucks, cranes and pile driving equipment. The closest residential dwelling is approximately 340 m from the proposal site and the Mitchell Highway is adjacent to the site. In dry and windy conditions, it is likely these would be affected by dust. However, the	The potential climate and air quality impacts would be considered to be reduced compared to that assessed within the EIS. This is due to the total reduced area of development footprint (23 ha).	The potential climate and air quality impacts would be considered to be greater than that compared to Submissions Report and Approval. The potential climate and air quality impacts would be considered similar to that outlined in the EIS. This is due to the development footprint being similar and the same distance from the closest residential dwelling as that assessed in the EIS.	The modification would result in an increase in potential climate and air quality impacts as that of the Submission Report and Approved Layout, 23 ha. The assessment of climate and air quality impacts provided within the EIS covers the assessment of the potential impacts of the modification development footprint.

Relevant EIS section	Environmental factor	Impact nature and magnitude			Comment
		Publicly Exhibited EIS (Development footprint 200 ha)	**Submissions Report and Approved Layout (Development footprint 177 ha)**	**Modification (Development footprint <200 ha)**	
		proposed works involve minimal disturbance thus reducing the amount of dust produced. Additionally, the south-western area of the proposal site, closest to the dwelling, is periodically inundated with water, further reducing the production of dust. No climatic impacts are anticipated as a consequence of the construction and decommissioning activities for the solar farm.			There would be no changes in the nature of the potential climate and air quality impacts and existing mitigation measures are sufficient to address the modified layout.
7.8	Historic heritage	The proposal is not considered likely to have a significant impact in accordance with the NSW *Heritage Act 1977*, the EP&A Act, or the EPBC Act, in terms of heritage. There are no anticipated impacts on any identified heritage items during construction, operation or decommissioning, due to the location of the proposed solar farm.	The potential historic heritage impacts would be considered to be similar compared to that assessed within the EIS.	The potential historic heritage impacts would be considered to be similar compared to that assessed within the EIS and Submissions Report and Approval.	It is considered there would be no changes in the level or nature of the potential impacts relating to historic heritage. Existing mitigation measures are sufficient to address the modified layout.
7.9	Bush fire risk	Considering the sparse vegetation cover and wet nature of the western boundary due to Boggy Cowal, it is considered unlikely that proposal would pose a significant bush fire risk. Site access would be formalised at the	The potential bush fire risks would be considered to be similar compared to that assessed within the EIS.	The potential bush fire risks would be considered to be similar compared to that assessed within the EIS and Submissions Report and Approval.	It is considered there would be no changes in the level or nature of the potential impacts relating to bush fire risk. Existing mitigation measures are

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		beginning of the construction stage during civil works, which would increase the ability to access and suppress any fire onsite or on adjoining sites. Repairs and maintenance activities during proposal operation could increase bush fire risk. All electrical components would be designed to minimise potential for ignition. Ground cover beneath panels would be maintained and not allowed to build up to high fuel levels (access and solar input requirements are in line with this activity).			sufficient to address the modified layout.
7.10	Community and Socio-economic	Community and socio-economic impacts include: • The creation of polarised reactions in communities; some may see it as a large change to existing land use, lifestyles and land character. Others may see it as a positive contribution and sign of progress and may derive some direct benefit ie. economic. • Stimulate local economic activity by drawing people to the area.	The potential community and socio-economic impacts would be considered to be similar compared to that assessed within the EIS.	The potential community and socio-economic impacts would be considered to be similar compared to that assessed within the EIS and Submissions Report and Approval.	It is considered there would be no changes in the level or nature of the potential impacts relating to community and socio-economic. Existing mitigation measures are sufficient to address the modified layout.

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		Publicly Exhibited EIS (Development footprint 200 ha)	**Submissions Report and Approved Layout (Development footprint 177 ha)**	**Modification (Development footprint <200 ha)**	
		• Place pressure on local services such as schools and health services. • Additional demands for accommodation and additional traffic may present an adverse effect on local tourism, if coinciding with local events. • Increase economic security for rural economies through diversification of employment opportunities and income streams. • Provide a substitute for carbon emission producing electricity production that is stable and renewable, and consistent with State and National greenhouse emission reduction objectives.			

APPENDIX D SLOANE'S FROGLET SURVEY RESULTS

9 August 2017

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Dear Jess,

RE – Sloane's Froglet Surveys Nevertire Solar Farm–16-261

Please find attached the methodology and results for the targeted surveys undertaken for the Sloane's Froglet (*Crinia sloanei*) within potential breeding habitat identified at the Nevertire Solar Farm site. The Sloane's Froglet is listed as Vulnerable under the *NSW Threatened Species Conservation Act 1995*. The solar farm had previously committed to avoid areas of potential breeding habitat however, now seeks a modification to extend the solar array into this area.

Appropriately timed surveys in July-August 2017 failed to detect the species. The quality of the habitat was noted as low due to the result of ongoing cropping and the historic clearing which has taken place within the paddocks and adjacent woodlands, leading to a low level of vegetation connectivity and limited built up of woody ground debris at the site. Additionally, recent discussions with threatened species officers from OEH have indicated that the reliability of records of the Sloane's Froglet *Crinia sloanei* north of Dubbo may be questionable.

Given this context and based on the results of this survey, it is unlikely that the Sloane's Froglet occurs within the proposal site for the Nevertire Solar Farm. Therefore, no further survey or management for this species is considered warranted. It is considered that the species does not present a constraint to the development or require consideration of offsets.

Please feel free to call me to discuss this advice further, as required.

Yours sincerely,

Jane Blomfield
Environmental Consultant

Ph 02 6492 8315
NGH Environmental

SLOANE'S FROGLET SURVEYS JULY/AUGUST 2017

INTRODUCTION

The Nevertire Solar Farm Environmental Impact Statement (EIS) was prepared in February 2017 and placed on public display during March 2017. It showed the solar farm development envelope impacting on potential Sloane's Froglet (*Crinia sloanei*) breeding habitat and included a commitment to survey for the speices. Based on submissions from Office Environment and Heritage (OEH), the development envelope was adjusted for the Submissions Report prepared April 2017, removing all impacts on the potential Sloane's Froglet breeding habitat and hence removing the requirement for targeted surveys and offsetting.

It is understood that Epuron is now considering the preparation of a Modification Application to expand the solar farm development envelope into potential Sloane's Froglet (*Crinia sloanei*) breeding habitat, located in the south-western portion of the site.

A survey has now been undertaken in accordance with the original safeguard within the February 2017 EIS; specifically, conducting appropriately timed surveys (June – August) to determine if Sloane's Froglet occurs within the development site. This letter documents the methods and results of that survey.

SLOANE'S FROGLET (*CRINIA SLOANEI*)

Sloane's Froglet is a small ground-dwelling frog that is typically associated with periodically inundated areas in grassland, woodland and disturbed habitats. This species has a mustard yellow or greyish back with large patches of darker pigment over the body with the throat of males being greyish green. The call is described as a short metallic 'chick chick chick chick' repeated frequently. The species is a diurnal and nocturnal species that is mostly found in winter and spring when there is high levels of rainfall.

The low number of sites, low number of recorded individuals per site, and the low proportion of records of this species in regional surveys all indicate that a moderately low number of mature individuals exist in NSW. The apparent loss from previous recorded sites and decline in recording rates indicates that this is not just a rare or uncommonly encountered species, but that there has been a reduction in population size and range. Populations of this species are known in the Central West.

The Nevertire Solar Farm site contains some areas of potentially suitable breeding habitat in the form of temporary and permanent waterbodies, with areas of suitable shelter habitat occurring in the form of woodland containing woody ground debris to the immediate north and west of the site. However, though suitable habitat is present, the quality of the habitat is considered low as a result the ongoing cropping which occurs within the temporary waterbodies, modification of surrounding drainage (constructed drainage channels for cotton irrigation) and the historic clearing which has taken place within the paddocks and adjacent woodlands, leading to a low level of vegetation connectivity and limited built up of woody ground debris.

SURVEY METHOD, STUDY AREA AND SURVEY EFFORT

Targeted surveys were conducted on the 31st of July and 1st of August by an experienced ecologist. The surveys were undertaken within the optimal detection period for this species, as confirmed through discussions with David Hunter and Joanne Ocock of OEH (correspondence attached in Attachment B). The surveys were conducted within the correct time period nominated in the OEH Bionet Threatened Species

Profile Database. The surveys were timed to coincide with rainfall after a period of extreme dryness. The ecologist noted that rain fell onsite on either the 30 or early on the 31st July, despite the Trangie monitoring station not recording rainfall on these days. More substantive rain fell on the 1st August.

Table 0-1 Weather conditions during the field surveys, recorded at Trangie, approximately 28 km east of the site (BOM 2017).

Date	Temperature min (°C)	Temperature max (°C)	Rain (mm)
29/07/17	-1.8	21.6	0
30/07/17	9.0	21.4	0
31/07/17	10.5	14.2	0
01/08/17	0.2	16.9	5.6

Surveys were conducted in accordance with NSW Department of Environment and Climate Change (2009) Threatened Species Survey and Assessment Guidelines: Field Survey Methods for Fauna – Amphibians. The surveys involved walked spotlighting transects traversing the identified potential breading habitat for evidence of the froglet.

If detected, the froglet was to be caught, measured (weight and snout-vent length) and the capture location (and later release point) recorded by GPS.

Approximately 3 hours (1.5 hrs per night) was spent onsite searching for the froglet over two nights. The area covered totals 22.72 ha. The timing, coverage and general survey effort was considered adequate to detect if the froglet is present at the site. Transect locations are presented in Attachment A.

Survey results

Though rain had fallen prior to the commencement of surveys, the amount was not sufficient to inundate the survey area. During prior surveys conducted in December 2016, a significant area of inundation had been present within the survey area. The ground was muddy during the current survey, but no standing water was present, as shown in Figure 1 below, taken in an area which was inundated during the December survey. A farm dam contained a small amount of water, however the water quality appeared to be poor, likely as a result of agricultural effluent.

Figure 1 – Previously inundated vegetation

No evidence of the Sloane's Froglet was observed during the survey period; no Sloane's Froglet were seen or heard, no tadpoles or spawn nests were seen, and no froglets were startled and seen jumping into the water.

A number of common species were identified visually during the surveys including the Spotted Marsh Frog (*Limnodynastes tasmaniensis*) (shown in Figure 2 below), Fletcher's Frog (*Limnodynastes fletcheri*), the House Mouse (*Mus musculus*) and the Australian Owlet-nightjar (*Aegotheles cristatus*). None of these species are listed as threatened under the *NSW Threatened Species Conservation Act 1995 and Environment Protection and Biodiversity Conservation Act 1999.* The frog species were detected through spotlighting, and identified to species level through the use of the Frogs of Australia (Ug Media, 2016) phone application.

Figure 2 – Spotted Marsh Frog *Limnodynastes tasmaniensis*

Given the survey effort (and the general observations of habitat suitability, see below), it is considered highly unlikely that the Sloane's Froglet would occur within this section of the proposed solar farm.

CONCLUSIONS

The Biodiversity Assessment Report prepared by NGH Environmental February 2017 assessing the Nevertire Solar Farm stated the site contains temporary and permanent waterbody areas that would be potential suitable breeding habitats with woodland sheltered habitat and woody ground debris. However, the quality of the potential Sloane's Froglet habitat was noted as low due to the result of ongoing cropping and the historic clearing which has taken place within the paddocks and adjacent woodlands, leading to a low level of vegetation connectivity and limited built up of woody ground debris at the site.

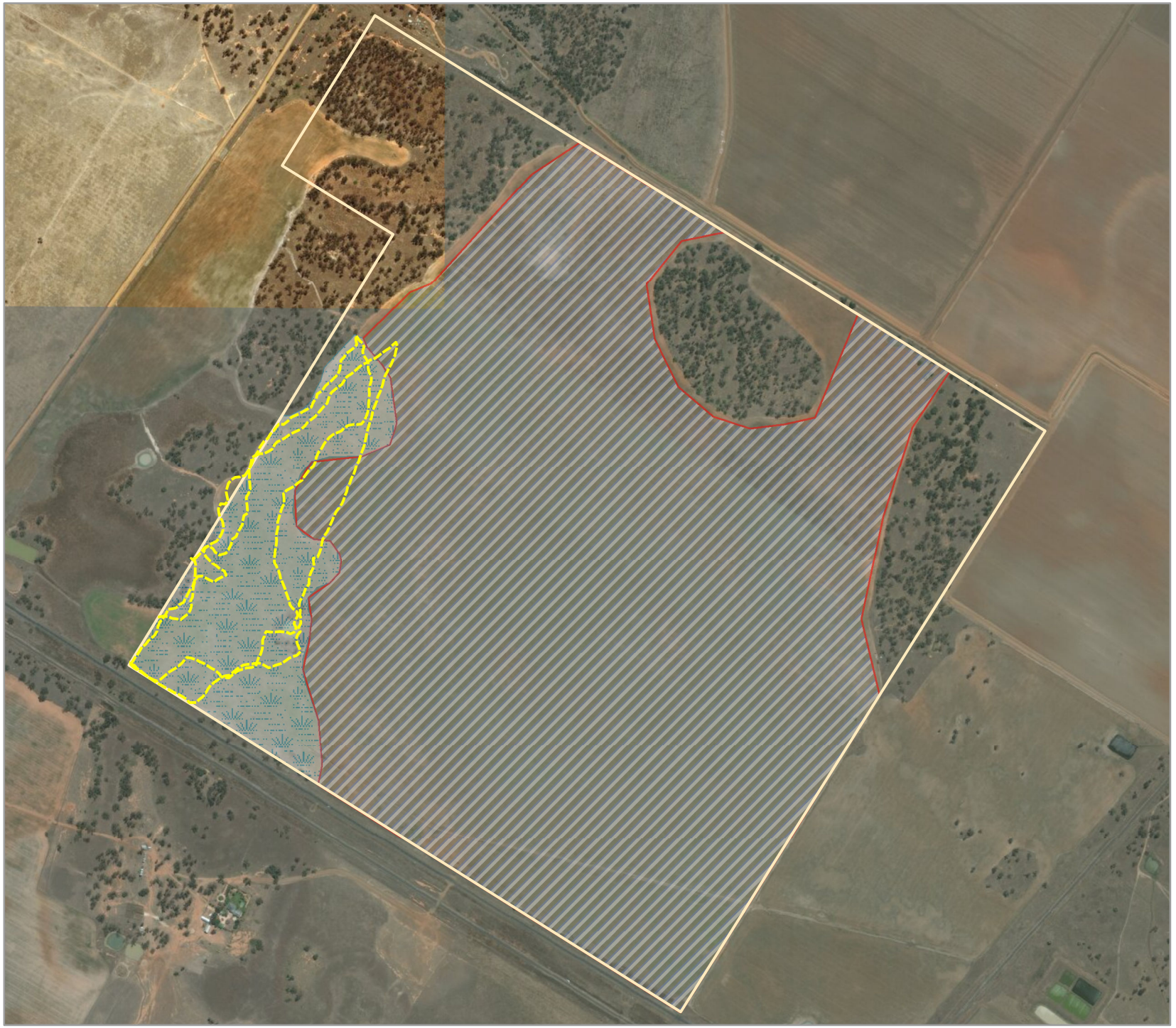
Additionally, recent discussions with threatened species officers from OEH have indicated that the reliability of records of the Sloane's Froglet *Crinia sloanei* north of Dubbo may be questionable, as the Desert Froglet *Crinia deserticola*'s distribution extends south to Dubbo, and the species is similar enough to Sloane's Froglet that misidentification has the potential to occur. Further, recent surveys of north-western New South Wales conducted by North West Ecological Services (2016) specifically targeting Sloane's Froglet records failed to detect the species at any sites where it was previously recorded.

Given this context and based on the results of this survey, it is unlikely that the Sloane's Froglet occurs within the proposal site for the Nevertire Solar Farm. Therefore, no further survey or management for this species is considered warranted. It is considered that the species does not present a constraint to the development or require offsets.

REFERENCES

Sparke, P, (2016) *Survey of Eight Wildlife Atlas Locations For Sloane's Froglet -Crinia sloanei Between Dubbo And Mungindi as per OEH contract PO4500585307*. Report for NSW Office of Environment and Heritage prepared by North West Ecological Services

ATTACHMENT A – MAP SET



SLOANE'S FROGLET SURVEY

Nevertire Solar Farm

- Survey transects
- Potential Sloane's Froglet habitat
- Proposal site
- Approved development footprint

Notes:
- Data collected by NGH Environmental (2017)
- Client data courtesy of Epuron, received 2016
- Base map Copyright © Esri and its data suppliers.

0 100 200 400 Meters

A4 @ 1:12500
Ref: 16126 030817
Author: JB

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APPENDIX E OEH CONSULTATION

DOC17/440045

Ms Brooke Marshall
Manager
NGH Environmental
PO Box 470
BEGA NSW 2550

Dear Ms Marshall

Nevertire Solar Farm (SSD 8072) - Modification

I refer to your request dated 25 August 2017 seeking comment from the Office and Environment and Heritage (OEH) on the proposed modification for the Nevertire Solar Farm.

OEH understands that the modification proposes to expand the development footprint from 177 hectares to 200 hectares. The footprint will expand into the area that was previously identified as potential Sloane's Froglet breeding habitat.

OEH is satisfied that the report regarding Sloane's Froglet surveys satisfies Section 6.5 of the FBA and agrees with the conclusions that Sloane's Froglet are unlikely to occur within the proposed Nevertire Solar Farm development site. It is also understood that no native vegetation will be cleared as a result of the proposed expansion.

If you have any questions regarding this matter please contact Michelle Howarth on 02 6883 5339 or email michelle.howarth@environment.nsw.gov.au .

Yours sincerely

PETER CHRISTIE
Director North West
Regional Operations Division

7 September 2017

Contact officer: MICHELLE HOWARTH
02 6883 5339

cc. Iwan Davies, Senior Planning Officer, Department of Planning and Environment; iwan.davies@planning.nsw.gov.au

PO Box 2111 Dubbo NSW 2830
Level 1, 48-52 Wingewarra Street Dubbo NSW 2830
Tel: (02) 6883 5330 Fax: (02) 6884 8675
ABN 30 841 387 271
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APPENDIX F PHOTOMONTAGES

Three photomontages were commissioned in areas identified in the preliminary stage of the assessment as likely to be most affected (these were included in Appendix C of the full Visual Impact Assessment (NGH Environmental 2017) and were considered when assessing the visual contrast that the array infrastructure would have with the existing landscape; specifically, how dominant the solar array infrastructure would be and how able to be 'absorbed' into the existing landscape. The photomontages were presented in the EIS and were used during consultation with neighbouring landowners.

The Montage 2 distance was selected to represent the view from the closest southern residential receiver but as site access could not be obtained, the montage is taken from the south east, not the south.

Montage 3 is a higher contrast, being closer to the infrastructure (taken from the roadside; the closest possible vantage point). This provides a worst case representation of the view seen from the closest southern residence from the site boundary and access road, not the residence.

View Location 2 - EXISTING VIEW

Photomontage created by:

James Buckley - B.Arch(Hons) A.I.A
NSW Board of Architects registration No 8504

Photomontage Image created using:

AutoCAD 2016, Sketchup 2016, Thea Render, Adobe photoshop

Base photograph details:

Camera:	Nikon Coolpix P600
Photo taken:	12.53pm on 11/01/2017
Location of photo:	LAT: 31° 49' 41" S LONG: 147° 41' 55" E
Height above ground:	1.6 m

GENERAL NOTES:

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ARCHITECTURAL APPROVAL	INITIALS	DATE
	jpb	18.01.17

APPROVAL AUTHORITY: NSW DEPARTMENT OF PLANNING

CLIENT: EPURON

PROJECT: NEVERTIRE SOLAR FARM

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Fx. (02) 6393 5050

NOMINATED ARCHITECTS:
JAMES BUCKLEY, NSW ARB 8504
ANTHONY GRAY, NSW ARB 9425

DRAWING: VIEW 02 EXISTING

PROJECT NUMBER 217279	DRAWING FILE 217279_01A_A01-A010.dwg		
ORIGINAL SIZE A1	A1 SCALE: 1:2	A3 SCALE: 1:4	SET 01
IMAGE SOURCE GOOGLE EARTH, GOOGLE MAPS			
STATUS FOR APPROVAL	SHEET A005 OF 07		

View Location 2 - VIEW WITH NO SCREENING

3m high block extruded above ground plane to represent panels and fence

Photomontage created by:

James Buckley - B.Arch(Hons) A.I.A
NSW Board of Architects registration No 8504

Photomontage Image created using:

AutoCAD 2016, Sketchup 2016, Thea Render, Adobe photoshop

Base photograph details:

Camera:	Nikon Coolpix P600
Photo taken:	12.53pm on 11/01/2017
Location of photo:	LAT: 31° 49' 41" S LONG: 147° 41' 55" E
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NOMINATED ARCHITECTS:
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ANTHONY GRAY, NSW ARB 9425

DRAWING: VIEW 02 NO SCREENING

PROJECT NUMBER 217279	DRAWING FILE 217279_01A_A01-A010.dwg		
ORIGINAL SIZE A1	A1 SCALE: 1:2	A3 SCALE: 1:4	SET 01
IMAGE SOURCE GOOGLE EARTH, GOOGLE MAPS			
STATUS FOR APPROVAL	SHEET A006 OF 07		

View Location 2 - VIEW WITH VEGETATION SCREENING

3m high block extruded above ground plane to represent panels and fence
Screening shrubs with heights of approximately 3-4m

Photomontage created by:

James Buckley - B.Arch(Hons) A.I.A
NSW Board of Architects registration No 8504

Photomontage Image created using:

AutoCAD 2016, Sketchup 2016, Thea Render, Adobe photoshop

Base photograph details:

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NOMINATED ARCHITECTS:
JAMES BUCKLEY, NSW ARB 8504
ANTHONY GRAY, NSW ARB 9425

DRAWING: VIEW 02 WITH VEGETATION SCREENING

PROJECT NUMBER 217279	DRAWING FILE 217279_01A_A01-A010.dwg		
ORIGINAL SIZE A1	A1 SCALE: 1:2	A3 SCALE: 1:4	SET 01
IMAGE SOURCE GOOGLE EARTH, GOOGLE MAPS			
STATUS FOR APPROVAL	SHEET A007 OF 07		

View Location 3 - EXISTING VIEW

Photomontage created by:

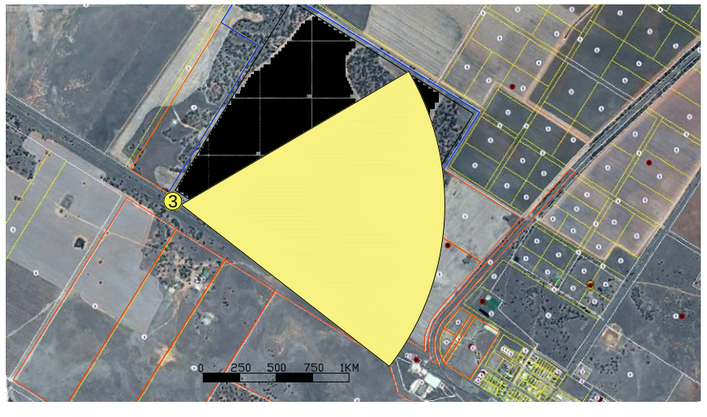
James Buckley - B.Arch(Hons) A.I.A
NSW Board of Architects registration No 8504

Photomontage Image created using:

AutoCAD 2016, Sketchup 2016, Thea Render, Adobe photoshop

Base photograph details:

Camera:	Nikon Coolpix P600
Photo taken:	1.18pm on 11/01/2017
Location of photo:	LAT: 31° 49' 39" S LONG: 147° 41' 52" E
Height above ground:	1.6 m



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DRAWING: VIEW 03 EXISTING

PROJECT NUMBER 217279	DRAWING FILE 217279_01A_A01-A010.dwg	
ORIGINAL SIZE A1	A1 SCALE: 1:2	A3 SCALE: 1:4
IMAGE SOURCE GOOGLE EARTH, GOOGLE MAPS		SET 01
STATUS FOR APPROVAL	SHEET A008 OF 07	

View Location 3 - VIEW WITH NO SCREENING

Photomontage created by:

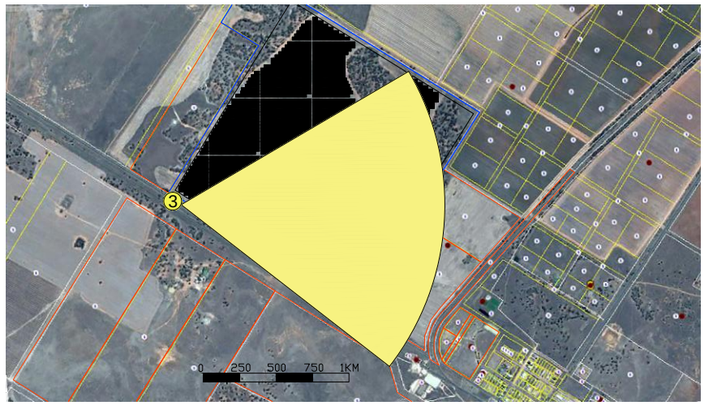
James Buckley - B.Arch(Hons) A.I.A
NSW Board of Architects registration No 8504

Photomontage Image created using:

AutoCAD 2016, Sketchup 2016, Thea Render, Adobe photoshop

Base photograph details:

Camera:	Nikon Coolpix P600
Photo taken:	1.18pm on 11/01/2017
Location of photo:	LAT: 31° 49' 39" S LONG: 147° 41' 52" E
Height above ground:	1.6 m



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ANTHONY GRAY, NSW ARB 9425

DRAWING: VIEW 03 WITH NO SCREENING

PROJECT NUMBER 217279	DRAWING FILE 217279_01A_A01-A010.dwg	
ORIGINAL SIZE A1	A1 SCALE: 1:2	A3 SCALE: 1:4
IMAGE SOURCE GOOGLE EARTH, GOOGLE MAPS		SET 01
STATUS FOR APPROVAL	SHEET A009 OF 07	

View Location 3 - VIEW WITH VEGETATION SCREENING

Screening shrubs with heights of approximately 3-4m

Photomontage created by:

James Buckley - B.Arch(Hons) A.I.A
NSW Board of Architects registration No 8504

Photomontage Image created using:

AutoCAD 2016, Sketchup 2016, Thea Render, Adobe photoshop

Base photograph details:

Camera:	Nikon Coolpix P600
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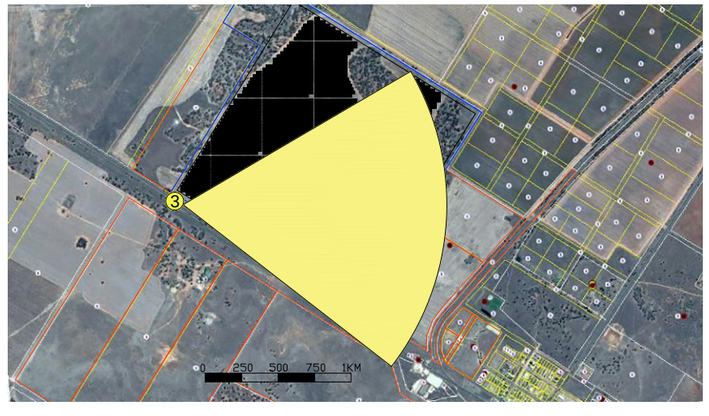

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DRAWING: VIEW 03 WITH VEGETATION SCREENING

PROJECT NUMBER 217279	DRAWING FILE 217279_01A_A01-A010.dwg		
ORIGINAL SIZE A1	A1 SCALE: 1:2	A3 SCALE: 1:4	SET 01
IMAGE SOURCE GOOGLE EARTH, GOOGLE MAPS			
STATUS FOR APPROVAL	SHEET A010 OF 07		

APPENDIX G REVISED MITIGATION MEASURES

The following table constitutes the revised mitigation measures to which the proponent commits to manage the environmental impacts of the project. The new mitigation measure is shown in **bold**. No other changes have been made to the measures which are otherwise as they appear in the Submissions Report (NGH Environmental 2017b).

Construction (C), Operation, (O), Decommissioning (D)

Table G-1 Revised mitigation measures.

Safeguards and Mitigation Measures	C	O	D
• All hollow bearing trees identified would be avoided by the works.	C		
• Preparation of a Flora and Fauna Management Plan (FFMP) that would incorporate protocols for: o Protection of native vegetation to be retained o Best practice removal and disposal of vegetation o Weed management o Unexpected threatened species finds o Rehabilitation of disturbed areas The FFMP would form part of the Nevertire Solar Farm Construction Environmental Management Plan (CEMP).	C		
• Stockpiling materials and equipment and parking vehicles will be avoided within the dripline (extent of foliage cover) of any native tree. • Prior to the commencement of work, a physical vegetation clearing boundary at the approved clearing limit is to be clearly demarcated and implemented. The delineation of such a boundary may include the use of temporary fencing, flagging tape, parawebbing or similar.	C		D
• Where possible, use non barbed-wire on exterior fencing to minimise bird collision risks.		O	
• Where possible, landscape plantings will be comprised of local indigenous species with the objective of increasing the diversity of the existing vegetation. Planting locations would be designed to improve the connectivity between patches in the landscape where consistent with landscaping outcomes.		O	
• If night work is unavoidable, ensure any floodlights are directed away from vegetation.	C		D
• Weed and hygiene protocols will be prepared and implemented.	C		D
• During operation direct lights away from vegetation.		O	
• Weed and planting protocols will be prepared and implemented		O	
• Feral species to be monitored and a management plan to be prepared and implemented to reduce feral species abundance		O	

Safeguards and Mitigation Measures	C	O	D
• **A 10 m buffer (or buffer defined in accordance with the Australian Standard 4970-2009 Protection of Trees on Development Sites) would be established around the remnant native vegetation and dam to minimise indirect impacts to this area of habitat.**	**C**	**O**	**D**
• The sites Nevertire Isolated Find 1, Nevertire Isolated Find 2 and Nevertire Isolated Find 3 are salvaged by an archaeologist and/or the Warren LALC prior to the proposed work commencing. The final storage place for the artefacts should be negotiated with the registered Aboriginal party.	C		
• The development must avoid the site Nevertire Scarred Tree 1, as per the current design plans detailed in this report. A minimum 10m buffer around the tree should be in place to protect the root zone.	C		
• Nevertire Solar 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 party.	C		
• 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		
• 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 party and may include further field survey.	C	O	D
• Implement noise control measures such as those suggested in Australian Standard 2436-2010 “Guide to Noise Control on Construction, Demolition and Maintenance Sites”, to reduce predicted construction noise levels.	C		
• Additionally, during construction: o Use less noisy plant and equipment where feasible and reasonable o Plant and equipment to be properly maintained. o Provide special attention to the use and maintenance of ‘noise control’ or ‘silencing’ kits fitted to machines to ensure they perform as intended.	C		

Safeguards and Mitigation Measures	C	O	D
o Strategically position plant on site to reduce the emission of noise to the surrounding neighbourhood and to site personnel. o Avoid any unnecessary noise when carrying out manual operations and when operating plant. o Any equipment not in use for extended periods during construction work should be switched off. o Establish good relations with people living in the vicinity of the site at the beginning of proposal and maintain. Keep people informed, take complaints seriously, deal with complaints expeditiously. The community liaison member of staff should be adequately experienced.			
• The materials and colour of onsite infrastructure will, where practical, be non-reflective and in keeping with the materials and colouring of existing infrastructure or of a colour that will blend with the landscape. Where practical: o Buildings will non-reflective and in eucalypt green, beige or muted brown. o Pole mounts will be non-reflective. • Security fencing posts and wire would be non-reflective; green or black rather than grey would reduce the industrial character of the fence.	Design stage		
• A Visual Impact Management Plan would be prepared to address the 'as built' visual impacts of the proposed solar farm. The plan would include: o Onsite vegetation screening for viewpoints 13, 30 and 39. This would be aimed at 'breaking up' not blocking views of onsite infrastructure, although sections of denser plantings may be considered for the residence to the immediate south of the site (Receiver 42), in consultation with this landowner (draft plan provided as Figure 6-13 of the EIS to show location of screening. Additional guidance on screening is provided in the VIA, Appendix G). o Verification of predicted and actual impacts. A post construction audit would be undertaken to assess the effectiveness of the screening layout with reference to the final constructed infrastructure and augment the former if required. • The final screening plan would be developed in consultation with the affected landowners (the residence 340m south-west of the site and managers of the Noel Waters Oval (where they wish to be consulted).	C	O	
• Parking areas, material stock piles and other construction activities would be located as far as practical from nearby	C		

Safeguards and Mitigation Measures	C	O	D
residences or screened (by existing vegetation or constructed screens) for the period of construction.			
• Night lighting would be minimised to the maximum extent possible (i.e. manually operated safety lighting at main component locations). It would be directed away from the Mitchell Highway, so as not to cause light spill that may be hazardous to drivers.	C	O	D
• The array would be designed to allow sufficient space between panels to establish and maintain ground cover.	Design measure		
• A soil and water management plan, and erosion and sediment control plans, would be prepared, implemented and monitored during the proposal, in accordance with Landcom (2004), to minimise soil (and water) impacts. These plans would include provisions to: o Carry out soil testing prior to any impacts, to inform any soil treatments (such as application of gypsum in compacted areas and top soil management) and provide baseline information for the decommissioning rehabilitation. o Install, monitor and maintain erosion controls. o Ensure that machinery leaves the site in a clean condition to avoid tracking of sediment onto public roads which may cause risks to other road users through reduced road stability. o Manage topsoil: In all excavation activities, separate subsoils and topsoils and ensure that they are replaced in their natural configuration to assist revegetation. Stockpile topsoil appropriately so as to minimise weed infestation, maintain soil organic matter, maintain soil structure and microbial activity. o Minimise the area of disturbance from excavation and compaction; rationalise vehicle movements and restrict the location of activities that compact and erode the soils as much as practical. Any compaction caused during construction would be treated such that revegetation would not be impaired. o Ensure any discharge of water from the site is managed to ensure ANZECC (2000) water quality criteria are met. o Manage works in consideration of heavy rainfall events; if a heavy rainfall event is predicted, the site should be stabilised and work ceased until the wet period had passed.	C		D
• A ground cover management plan would be developed to ensure a stable ground cover during operation of the solar farm, minimising erosion and adverse water quality impacts. The plan would be developed with reference to soil testing and with input	C		

Safeguards and Mitigation Measures	C	O	D
from an Agronomist to ensure species selection and sodicity impacts are addressed. Highly managed grazing may be used to maintain the height of ground cover.			
• A spill response plan would be developed as part of the overall risk management plan to prevent contaminants affecting adjacent surrounding environments. The plan would: o Manage the storage of any potential contaminants onsite. o Mitigate the effects of soil contamination by fuels or other chemicals (including emergency response and EPA notification procedures and remediation. o Ensure that machinery arrives on site in a clean, washed condition, free of fluid leaks.	C	O	D
• A protocol would be developed in relation to discovering buried contaminants within the proposal site (e.g. pesticide containers). It would include stop work, remediation and disposal requirements.	C		D
• A 40m buffer would be maintained around Boggy Cowal in accordance with DPI Water's Guidelines for Controlled Activities on Waterfront Land (2012) to reduce potential impacts to the waterway and GDEs	Design		
• The final design would take into account the best available flood information and may include foundations up to 500mm above ground level. Electrical components would be designed to withstand inundation. The substation and office building would be located on the higher north-east portion of the site.	Design		
• Design would take into account: o Anchoring to resist short term flooding o Mounts used for infrastructure to resist short term flooding Stage construction where necessary to avoid working in areas that are inundated with water.	Design		
• All staff would be appropriately trained through toolbox talks for the minimisation and management of accidental spills.	C	O	D
• All fuels, chemicals, and liquids would be stored at least 50 m away from any waterways or drainage lines and would be stored in an impervious bunded area.	C	O	D
• Adequate incident management procedures will be incorporated into the Construction Environmental Management Plan, including requirement to notify EPA for incidents that cause material harm to the environment (refer s147-153 *Protection of the Environment Operations Act*).	C	O	D
• The refuelling of plant and maintenance would be undertaken in impervious bunded areas on hardstand areas only.	C	O	D

Safeguards and Mitigation Measures	C	O	D
• Machinery would be checked regularly to ensure there is no oil, fuel or other liquids leaking from the machinery.	C		D
• To mitigate temporary flooding impacts on infrastructure: o Design would take into account: ▪ Anchoring to resist short term flooding ▪ Mounts used for infrastructure to resist to short term flooding o Stage construction to avoid the short term periods where parts of the site are inundated with water.	C		
• The proponent would consult with the Roads and Maritime Services regarding the proposed upgrading of the site access. The upgrade would be subject to detailed design, and must be designed and constructed to the standards specified by Roads and Maritime Services.	Design		
• A Haulage Plan would be developed with input from the roads authority, including but not limited to: o Assessment of road routes to minimise impacts on transport infrastructure. o Scheduling of deliveries of major components to minimise safety risks (on other local traffic). o Traffic controls (signage and speed restrictions etc.).	C		D
• A Traffic Management Plan would be developed as part of the CEMP, in consultation with Warren Council and Roads and Maritime. The plan would include, but not be limited to: o Assessment of road condition prior to construction on all local roads that would be utilised. o A program for monitoring road condition, to repair damage exacerbated by the construction and decommissioning traffic. o The designated routes of construction traffic to the site. o Carpooling/shuttle bus arrangements to minimise vehicle numbers during construction. o Scheduling of deliveries. o Community consultation regarding traffic impacts for nearby residents. o Consideration of cumulative impacts. o Consideration of impacts to the railway. o Traffic controls (speed limits, signage, etc.). o Procedure to monitor traffic impacts and adapt controls (where required) to reduce the impacts.	C		D

Safeguards and Mitigation Measures	C	O	D
o Providing a contact phone number to enable any issues or concerns to be rapidly identified and addressed through appropriate procedures.			
• The proponent would repair any damage resulting from proposal traffic (except that resulting from normal wear and tear) as required at the proponent's cost.	C	O	D
• Consultation with local community, to minimise impact of construction of adjacent agricultural activities and access.	C		
• Consultation would be undertaken with Essential Energy regarding connection to the substation and design of electricity transmission infrastructure.	C		
• Consultation would be undertaken with John Holland Rail regarding design of transmission line over the Nevertire Warren Railway line.	C		
• A Rehabilitation Plan would be prepared to ensure the array site is returned to it pre solar farm land capability. The plan would be developed with reference to base line soil testing and with input from an Agronomist to ensure the site is left stabilised, under a cover crop or other suitable ground cover. The plan would reference: o Australian Soil and Land Survey Handbook (CSIRO, 2009) o Guidelines for Surveying Soil and Land Resources (CSIRO, 2008) o The land and soil capability assessment scheme: second approximation (OEH, 2012) o Below ground infrastructure that impedes cropping (less than 500mm depth) may be removed, subject to consultation with the land owner.			D
• 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		
• A Waste Management Plan (WMP) would be developed in consultation with Warren Shire Council (with regard to disposal options). It would include but not be limited to: o Identification of opportunities to avoid, reuse and recycle, in accordance with the waste hierarchy. o Quantification and classification of all waste streams. o Provision for recycling management onsite. o Provision of toilet facilities for onsite workers and how sullage would be disposed of (i.e., pump out to local sewage treatment plant). o Tracking of all waste leaving the site.	C	O	D

Safeguards and Mitigation Measures	C	O	D
o Disposal of waste at facilities permitted to accept the waste. Consultation would be undertaken with local waste facility operators to ensure that loads do not exceed capacity. o Requirements for hauling waste (such as covered loads). o Disposal options for excess waste (Warren Shire has limited options available for the disposal of waste and other viable options will need to be implemented). o Wooden crates used on site will need to be thoughtfully disposed of offsite. The crates often cannot be chipped to be used as mulch due to chemical sprays used. o Septic system is installed and operated according to the local Warren Shire Regional Council regulations.			
• All design and engineering would be undertaken by qualified and competent person/s with the support of specialists as required.	C		
• Transmission lines would be located as far as practical from residences, farm sheds, and yards to reduce the potential exposure to EMFs.	C		
• Design of electrical infrastructure would minimise EMFs.	C		
• Development of a complaints procedure to promptly identify and respond to issues generating complaints.	C	O	D
• Protocols to guide vehicle and construction equipment use, to minimise emissions would be included in construction and operational environmental management plans. This would include but not limited to Australian standards and the POEO Act.	C	O	D
• Protocols would be included in construction and decommissioning to minimise and treat dust (water carts or similar in response to visual cues). This may involve installation of barriers such as shade cloth, to protect receivers.	C		D
• Should an item of historic heritage be identified, the Heritage Division (OEH) would be contacted prior to further work being carried out in the vicinity.	C	O	D
• A minimum 10m setback from native vegetation remnants would be incorporated into the final design.	Design		
• Develop a Bush Fire Management Plan to include but not be limited to: o Management of activities with a risk of fire ignition. o Management of fuel loads onsite. o Storage and maintenance of firefighting equipment, including siting and provision of adequate water supplies for bush fire suppression. This includes access to the onsite dam if required for fire emergency situations.	C	O	D

Safeguards and Mitigation Measures	C	O	D
o The below requirements of *Planning for Bush Fire Protection 2006* - ▪ Identifying asset protection zones ▪ Providing adequate egress/access to the site ▪ Emergency evacuation measures o Operational procedures relating to mitigation and suppression of bush fire relevant to the solar farm.			
• The Community Consultation Plan would be implemented to manage impacts to community stakeholders, including but not limited to: o Protocols to keep the community updated about the progress of the proposal and proposal benefits. o Protocols to inform relevant stakeholders of potential impacts (haulage, noise etc.). o Protocols to respond to any complaints received.	C		
• Liaison with local industry representatives to maximise the use of local contractors, manufacturing facilities, materials.	C		
• Liaison with local representatives regarding accommodation options for staff, to minimise adverse impacts on local services.	C		D
• Liaison with local tourism industry representatives to manage potential timing conflicts with local events.	C		D