STATE SIGNIFICANT DEVELOPMENT ASSESSMENT
Nevertire Solar Farm (SSD 8072)

1. BACKGROUND

Nevertire Solar Pty Ltd (the Applicant) proposes to develop a new 105 megawatt (MW) solar farm (the project) near Nevertire in the Warren Shire Local Government Area (LGA).

1.1 Project setting

The project site is 255 hectares (ha) and is located approximately 1 kilometre (km) west of the township of Nevertire, which is 60 km east of Nyngan (see **Figure 1**).

The development footprint within the project site is 177 ha and has been designed to avoid all native vegetation. It is flat in nature and has been cleared for cropping and grazing.

The nearest residences to the site, both of which are non-associated, are located approximately:
- 500 m north-west of the site (1 residence); and
- 340 m south of the site on the opposite side of the Mitchell Highway (1 residence).

Figure 1: *Regional Context*

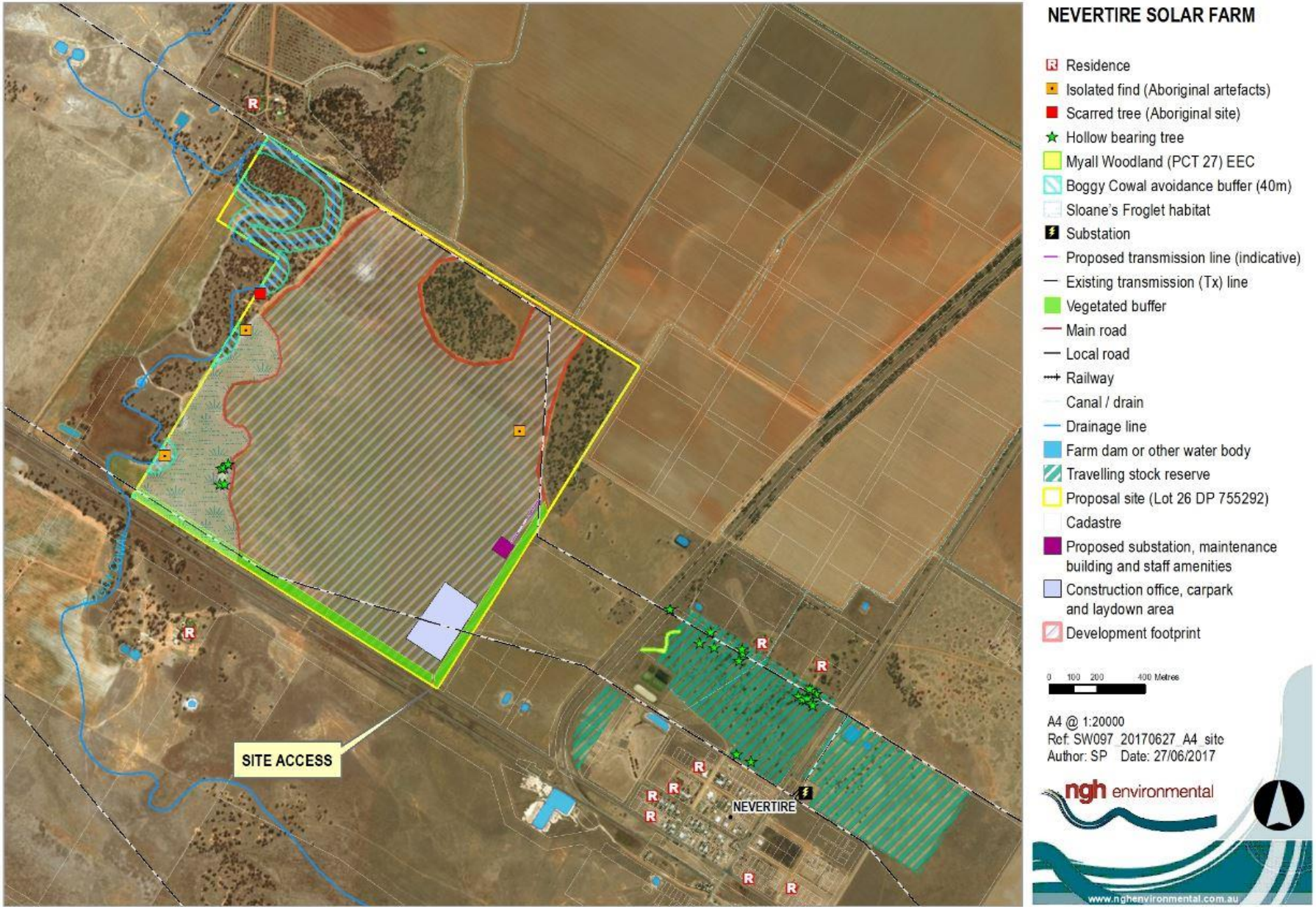

Figure 2: *Project Layout*

1.2 Project description

The project involves the construction of a new solar farm with an initial capacity of 105 MW. It also involves any upgrading or decommissioning of infrastructure and equipment in the future. While the capacity of the proposed solar farm may increase over time as technology improves, and providing sufficient network capacity exists, the footprint of the development would not increase.

The solar farm would connect directly to an existing 132 kilovolt (kV) transmission line in the north of the site. This transmission line connects to the national electricity grid at the existing Essential Energy Nevertire substation, approximately 1.5 km east of the site.

The key components of the project are summarised in **Table 1,** depicted in **Figure 2** and described in detail in the environmental impact statement (EIS) for the project (see **Appendix B**).

Table 1: *Major components of the project*

Aspect	***Description***
Project summary	The project includes: • approximately 364,000 solar panels mounted on either single axis-tracker or fixed mounting frames (up to 3 m in height); • up to 55 inverter stations (up to 3.4 m in height), each containing an inverter and a 22 kV or 33 kV transformer; • an onsite substation, containing a transformer and associated switchgear; • an overhead transmission line connecting the substation to the existing 132 kV transmission line; • internal access tracks, staff amenities, offices, car parking and laydown area; • perimeter security fencing; and • vegetation screening along the southern and eastern boundaries of the site.
Project area	255 ha (including a 177 ha development footprint)
Access route	Access to the site would be via the Mitchell Highway
Site entry and road upgrades	• The site would be accessed at its south-eastern corner, utilising its existing access point off the Mitchell Highway, 1.2 km west of Nevertire. • An upgrade to the existing intersection between the site entry and the Mitchell Highway would be required, and a new track would be created into the site.
Operational life	• The expected operational life of the initial infrastructure is 25 to 30 years. However, the project may involve infrastructure upgrades that could extend the operational life. • The project also includes decommissioning at the end of the project life, which would involve removing all above ground infrastructure and underground infrastructure less than 500 millimetres (mm) deep.
Construction traffic and timeframe	• The total construction period would last for up to 12 months, and would comprise: - a peak traffic period of 6-9 months (up to 300 light vehicle, 40 heavy vehicle and 5 over dimensional vehicle movements); and - a non-peak traffic period of 3 – 6 months (up to 300 light vehicle, 27 heavy vehicle and 3 over dimensional vehicle movements). • Construction hours would be limited to Monday to Friday 7 am - 6 pm, and Saturday 8 am - 1 pm.
Hours of operation	• The solar farm would operate during the day. • Daily operations and maintenance by site staff would be undertaken Monday to Friday 7 am - 6 pm and Saturday 8 am - 1 pm.
Employment	300 full time equivalent jobs during the peak construction period (between 6 and 9 months) and 2 full time equivalent operational jobs.
Capital investment value	$194 million

1.3 Strategic context

In 2015, the vast majority of energy in NSW was derived from fossil fuels, including 86% from coal and gas, and only 14% was derived from renewable energy sources. However, there are currently no plans for the development of new coal power stations in NSW, and the development of renewable energy sources, like wind and solar farms, is experiencing rapid growth.

This is highlighted in the recently released *Independent Review into the Future Security of the National Electricity Market* (the Finkel Review), which outlines a strategic approach to ensuring an orderly transition

from traditional coal and gas fired power generation to renewable energy with lower emissions. It notes that Australia is heading towards zero emissions in the second half of the century.

The *United Nations Framework Convention on Climate Change* (UNFCCC) has adopted the Paris Agreement, which aims to limit global warming to well below 2°C, with an aspirational goal of 1.5°C. Australia's contribution towards this target is a commitment to reduce greenhouse gas emissions by 26% to 28% below 2005 levels by 2030.

One of the key initiatives to deliver on this commitment is the Commonwealth Government's *Renewable Energy Target* (RET). Under this target, more than 20% of Australia's electricity would come from renewable energy by 2020. It is estimated that an additional 6,000 MW of new renewable energy capacity will need to be built by 2020 to achieve the *Renewable Energy Target.*

The *NSW Climate Change Policy Framework*, released in November 2016, sets an aspirational objective for NSW to achieve net zero emissions by 2050. The NSW Government also has a *Renewable Energy Action Plan*, which promotes the development of renewable energy in NSW.

NSW is currently leading Australia in large-scale solar, with four major operational projects, including the largest solar farm in Australia.

With an initial capacity of 105 MW, the project would generate enough power for around 40,000 homes, and is therefore consistent with both the Commonwealth's *Renewable Energy Target* and NSW's *Renewable Energy Action Plan*.

2. STATUTORY CONTEXT

2.1 State significant development

Under the *State Environmental Planning Policy (SEPP) (State and Regional Development) 2011*, the project is classified as State Significant Development (SSD) as it is an electricity generating activity with a capital investment value of more than $30 million.

Consequently, the Minister for Planning is the consent authority for the development. However, under the Minister's delegation of 16 February 2015, the Executive Director, Resource Assessments and Business Systems, may determine the development application as there were less than 25 objections and a political disclosure statement has not been made.

2.2 Environmental planning instruments

The provisions of the *Warren Local Environmental Plan (LEP) 2012* are discussed in **section 4.1** of this report.

Under the *SEPP (Infrastructure) 2007*, the project is permissible as it is an electricity generating works. In accordance with the Infrastructure SEPP, the Department has notified Essential Energy about the proposed development, and it has confirmed that there is capacity to accommodate the electricity generated by the Nevertire Solar Farm.

SEPP No. 44 – Koala Habitat Protection applies as the project is within the Warren Shire LGA and potential Koala habitat is present on the project site. The development footprint avoids the potential Koala habitat. The Office of Environment and Heritage (OEH) has confirmed that it supports this approach and that no further mitigation is required.

The Department has considered the provisions of *SEPP No. 55 – Remediation of Land*. A preliminary assessment of the land found no contaminated land within the project site, and the Department is satisfied the site is suitable for the development.

2.3 Other approvals

Under the *Roads Act 1993*, the project requires approvals from the Roads and Maritime Services (RMS) for the proposed road upgrades. Under Section 89K of the EP&A Act, the assessment of the impacts of these

upgrades is integrated into the planning approval process, and the conditions of these approvals must be consistent with the conditions of any development consent.

The Department has consulted with both RMS and Council during the approval process. Council has no concerns with the project, and RMS has no objections to the project subject to conditions. These conditions have been considered by the Department and incorporated into the proposed conditions of consent where appropriate (see **section 4.2**).

3. CONSULTATION

The Department publicly exhibited the EIS from 23 February 2017 until 24 March 2017. Seven submissions were received on the project, including five from public authorities and two from members of the public.

3.1 Agency submissions

OEH supports the revised development footprint layout, which avoids the key vegetation areas.

In its initial submission, RMS raised concerns about the intersection arrangement. However, this has been addressed through additional consultation and the proposed conditions of approval. RMS has no residual concerns.

The former Division of Resources and Energy (DRE) supports the project, as it aligns with the NSW Government policy to increase renewable energy generation, jobs and investment in the State.

As noted above, Council has confirmed that it has no concerns with the project.

The recommendations of the Department of Primary Industries (DPI) are discussed in the relevant sections of this report.

3.2 Public submissions

An objection was received from the nearest residential dwelling, located 340 m south of the project, and from an anonymous objector. These submissions raised concerns regarding visual impacts, property values, views from the Mitchell Highway, the suitability of the proposed planting scheme, and the proximity of the project to the township of Nevertire. The concerns raised in both public submissions are addressed in **section 4** of this report.

The Department inspected the project site with the Applicant on 3 May 2017, and separately visited those who made public submissions to discuss their concerns.

4. ASSESSMENT

The Department has undertaken a comprehensive assessment of the merits of the project. This report provides a detailed discussion of three key issues below, including the compatibility of the proposed land use, traffic considerations and visual impacts.

The Department has also considered the full range of potential impacts associated with the project and has included a summary of the conclusions relating to these in **Table 2**.

4.1 Compatibility of the proposed land use

Provisions of the Warren LEP
The project site is located wholly within the RU1 Primary Production zone under the Warren LEP.

The RU1 zone includes various land uses that are permitted both with, and without, consent. As a solar farm is not expressly listed as permitted with or without consent, it would be considered a prohibited land use under a strict reading of the LEP zoning table.

However, based on a broader reading of the LEP, and consideration of the objectives of the RU1 zone and other Council land use documents, the Department is satisfied that there is no clear intention to prevent the development of a solar farm on the site.

Firstly, the Warren LEP expressly references the Infrastructure SEPP and acknowledges that electricity generating works and solar energy systems are regulated by the Infrastructure SEPP, rather than the LEP. As described above, a solar farm is permitted with consent under the Infrastructure SEPP.

Secondly, the project is consistent with the objectives of the RU1 zone, particularly in relation to:
- encouraging diversity in primary industry enterprises;
- permitting a range of activities that support agricultural industries; and
- minimising fragmentation and alienation of resource lands.

Thirdly, the proposed solar farm is in line with Council's general objectives for the RU1 zone as outlined in its Development Control Plan. In this regard, Council's objectives for the zone are to enhance the economic value of land for agriculture by permitting other primary production uses, such as energy generation, that complement the primary role of the zone.

The project would encourage a new element of agricultural enterprise and diversity through the generation of solar energy. The proposed solar farm would not fragment or alienate any resource lands during its operation as it has generally low impacts and it could be easily returned to agricultural land in the future once decommissioned, whilst managed grazing may also occur during operations.

Further, the Department notes that Council has no concerns with the project.

Potential impacts on agricultural land

The project site is located within the Central West region of NSW, which has a strong and diverse agricultural sector. Grazing is the most significant land use in the region, followed by broad acre cropping (largely wheat crops).

The project site is 255ha, is currently grazed by sheep and has a history of cropping. Given the relatively small size of the site, the loss of agricultural land would result in a negligible reduction in the overall productivity of the region.

Furthermore, the inherent agricultural capability of the land would not be affected by the project due to the relatively low scale of the development. Managed grazing may be used to maintain the height of ground cover during operations and the land returned to agricultural use following decommissioning.

The potential loss of a small area of grazing and/or cropping land in the region must be balanced against:
- the broader strategic goals of the Commonwealth and NSW governments for the development of renewable energy into the future;
- the environmental benefits of solar energy, particularly in relation to reducing greenhouse gas emissions; and
- the economic benefits of solar energy in an area with good solar resources and capacity in the existing electricity infrastructure.

The nearest Travelling Stock Reserve (TSR) is located approximately 500 m to the east of the site. The project does not involve work or the placement of infrastructure within any TSR.

Based on these considerations, the Department is satisfied that the proposed solar farm represents an effective and compatible use of the land within the region.

In addition, the Department has recommended suitable conditions to maintain the productivity of the agricultural land during the construction, operation and decommissioning of the project.

4.2 Traffic and transport

The project would be accessed from the Mitchell Highway (see **Figure 2**), an RMS road.

The main increase in traffic volumes associated with the project would occur during the 12-month construction period, including a peak period of 6 to 9 months. There may also be a minor increase in traffic

volumes during periods of any upgrading or decommissioning of infrastructure and equipment in the future. There would be negligible traffic during operation.

The estimated maximum daily vehicle movements during construction, upgrading and decommissioning would be 300 light, 40 heavy and 5 over dimensional vehicles, whilst the maximum during operation would be 60 light and 20 heavy vehicle movements.

Following consultation with RMS about the intersection and maximum daily vehicle movements, RMS has specified that a Channelised Right (CHR) turn lane and an Auxiliary Left (AUL) turn treatment be provided at the intersection of the Mitchell Highway and the site entrance. In addition, RMS advised that the site entrance should be sealed a minimum of 40 m from the edge of the Mitchell Highway.

The Applicant accepts the proposed upgrades and has confirmed the upgrades would be designed and constructed to the satisfaction of RMS.

The Department has included conditions of consent in line with the RMS advice.

The Department has recommended conditions requiring the Applicant to:
- undertake the relevant road upgrades prior to the commencement of construction;
- ensure the length of vehicles accessing the site does not exceed 36.5 m;
- ensure the number of vehicles does not exceed:
  - 45 heavy vehicle movements a day during construction, upgrading or decommissioning; and
  - 20 heavy vehicle movements a day during operations;
- prepare and implement a Traffic Management Plan (TMP) in consultation with RMS and Council.

Subject to the recommended conditions, the Department, RMS and Council are satisfied that the project would not result in significant impacts on road network capacity, efficiency or safety.

4.3 Visual

Both public submissions raised concerns regarding the proximity of the project to the township of Nevertire, which is located approximately 1 km to the east of the site. The concerns related to the visual impact of the project detracting from the rural setting of the town and potential impacts on property values. However, it is noted that no submissions were received from the residences in Nevertire and that Council did not raise any concerns.

Visual impact concerns were also raised by the landowner of the nearest residence to the project, located approximately 340 m south of the project boundary.

In this regard, the Department notes that the proposed solar farm is a relatively low-lying development, reducing the potential visual impact on residences and public viewpoints. The solar panel heights, at their highest tilt angle, would be up to 3 m in height, and the onsite inverter stations would be up to 3.4 m in height.

The Department notes that the residence to the south is located beyond the Mitchell Highway and the railway, which sit slightly elevated between the residence and the southern portion of the site. In addition, existing vegetation within the curtilage of the residence, and the presence of scattered trees between the residence and the project boundary, break up views of the site.

The development footprint now also avoids the south-western corner of the site, further reducing the potential visual impact on the residence.

Notwithstanding this, the Department has required that the Applicant establish and maintain a mature vegetation buffer along the site's southern and eastern boundaries, further reducing visual impacts on the residence, road users and the township (see **Figure 2**).

The vegetation buffer must be effective at screening views of the solar panels and ancillary infrastructure on site from surrounding residences within 3 years of the commencement of construction.

The Department has required the Applicant to prepare a Landscaping Plan for the site in consultation with RMS, OEH and Council, which will include a detailed description of the measures to ensure the effectiveness of this buffer. This plan must also include a program to monitor and report on the effectiveness of these measures.

The Department has also required that external lighting is minimised and complies with the relevant Australian Standards, and prohibits any signage or advertising on the development, unless for safety purposes.

Based on these considerations, the Department is satisfied that there would be no significant visual impacts on the surrounding residences, the township of Nevertire, or the Mitchell Highway, with the inclusion of vegetation screening along the southern and eastern sections of the perimeter of the project site.

4.4 Other Issues

A summary of the Department's consideration of other issues is provided in **Table 2**.

Table 2: *Other potential issues*

Issue	*Consideration*	*Recommendations*
Transmission line	• In its EIS, the Applicant sought approval for a new 132 kV transmission line connecting the onsite substation to the existing Essential Energy Nevertire Substation, located approximately 1.5 km east of the project site. • However, the Applicant has amended its application to connect directly to an existing 132 kV transmission line in the north of the site. This transmission line connects to the national electricity grid at the Essential Energy Nevertire Substation. • The Applicant has confirmed that this amendment results in no change to the environmental impacts of the project.	• No recommendations.
Biodiversity	• The development footprint has been designed to avoid threatened species habitat on the project site. • There would be no significant impacts on any threatened species. • No Endangered Ecological Communities (EEC), or any native vegetation, would be impacted by the project. • Within the project site (but outside the development footprint): - there is suitable habitat for two threatened species, the Koala and the Sloane's Froglet (Crinia sloanei); and - native vegetation occurs as: - areas of remnant Poplar Box – Belah Woodland vegetation located along the western boundary, along the centre of the northern boundary, and in the north-eastern corner; and - 0.84 ha of moderate to good Poplar Box – Belah Woodland vegetation around the onsite dam (including 5 hollow-bearing trees), forming suitable Koala habitat. • Despite the development footprint being reduced from 200 ha to 177 ha to avoid all native vegetation and potential threatened species habitat, the benefits of the project, including the total renewable energy produced, would remain unchanged.	• The Department's recommended conditions of consent require the Applicant to protect the vegetation and fauna habitat outside the approved disturbance area and to provide landscape planting.
Noise	• The construction management noise level (45 db(A)) at 1 receiver would be exceeded by up to 1 dB(A) during construction. • The Department is satisfied that construction noise can be minimised by implementing the noise mitigation work practices set out in the EIS and in Tables 5 and 8 of the *Interim Construction Noise Guideline* (ICNG). These include scheduling activities to minimise noise, using quieter equipment, informing the immediately surrounding landowners and establishing a complaints handling procedure. • There would be negligible noise during operation.	• Minimise the noise generated by any construction, upgrading or decommissioning activities on site in accordance with best practice requirements outlined in the ICNG. • Restrict construction hours to Monday to Friday 7 am - 6 pm, and Saturday 8 am - 1 pm.

Issue	*Consideration*	*Recommendations*
Water and Flooding	• The project would require approximately 21.8 megalitres (ML) of water per annum during construction and decommissioning (primarily for dust suppression) and 0.24 ML during operation. • The water source is not yet defined but for construction is likely to be either river water from Warren or groundwater from offsite delivered to site by truck. DPI has confirmed that there is available water from both these potential sources. • The site is not flood affected and the project would not change the onsite hydrology, therefore there would be no impact on neighbouring properties. Council has confirmed that it has no concerns with the Applicant's approach to flooding.	• Prohibit water pollution. • Undertake activities in accordance with OEH's *Managing Urban Stormwater: Soils and Construction* (Landcom, 2004) manual.
Heritage	• Three Aboriginal stone artefacts (poor site integrity) and one scarred tree (good site integrity) were identified during on-site inspections (see **Figure 2**). • The scarred tree would not be impacted by the proposal as it is outside the development footprint. • The three isolated finds would be salvaged prior to development of the project by an archaeologist and/or the Warren Local Aboriginal Land Council. • No known historic items or places occur on the site. • Given the highly disturbed nature of the site, the likelihood of identifying unexpected items during construction is low. If Aboriginal artefacts or skeletal material are identified, all work would cease and the Chance Finds Protocol would be implemented.	• Protect all heritage items on site, including those that would remain in situ as well as those that are relocated, from any impact. • Prepare a Chance Finds Protocol. • Cease works and notify OEH if human remains are identified over the life of the project.
Soil Erosion	• In its submission, DPI raised concerns about the potential of soil sodium content and salinity on the site to impact on the stability of works undertaken, especially with trenching, and establishment and management of the groundcover. • The Applicant has committed to undertake soil testing and to returning the site to its pre solar farm land capability. • DPI has confirmed to the Department that the proponent has adequately addressed the matters raised in its submission.	• The Department has recommended suitable conditions to minimise any soil erosion and to prevent any tunnel erosion occurring on the site.
Hazards	• The Department is satisfied the project would comply with the National Health and Medical Research Council standards for electro-magnetic fields. • There are fire risks associated with all large solar farm developments. These risks can be suitably controlled through the implementation of standard fire management procedures.	• Prepare an Emergency Response Plan in consultation with the Rural Fire Service and Fire & Rescue NSW.
Mineral Resources	• DRE did not identify any potential resource sterilisation issues with the project.	• No recommendations.

5. CONCLUSION

The Department has assessed the development application, the EIS, the submissions and the Applicant's Response to Submissions (see **Appendices B, C** and **D**), and additional information provided by the Applicant and relevant government agencies. The Department has considered the objects of the EP&A Act and the relevant considerations under section 79C in its assessment of the project.

The Department considers the site to be appropriate for a solar farm as it has good solar resources and available capacity on the existing electricity network. In addition, the site is very flat and has been largely cleared for agricultural uses, and the development footprint avoids site vegetation.

The project would not result in any significant reduction in the overall agricultural productivity of the region. Additionally, the site could be easily returned to agricultural uses after the project is decommissioned and the inherent agricultural capability of the land would not be affected.

The Department believes the project would assist in transitioning the electricity sector from coal and gas-fired power stations to renewable energy sources. It would generate up to approximately 236,000 MWh of clean electricity annually, which would power about 40,000 homes and save up to 227,000 tonnes of greenhouse gas emissions per year. It is therefore consistent with the goals of the Commonwealth RET and the NSW *Renewable Energy Action Plan*.

The Department is satisfied that the project achieves a reasonable balance between maximising the efficiency of the solar resource development and minimising the potential impacts on surrounding land users and the environment. The project would also stimulate economic investment in renewable energy and provide flow-on benefits to the local community through job creation and capital investment.

On balance, the Department believes that the project is in the public interest and should be approved, subject to conditions.

6. RECOMMENDATION

It is recommended that the Executive Director:

- **considers** the findings and recommendations of this assessment report;
- **approves** the development application for the Nevertire Solar Farm; and
- **signs** the attached recommended conditions of consent (**Appendix A**).

Iwan Davies 30/6/17
Senior Planner
Resource Assessments

Clay Preshaw 30/6/17
Director
Resource Assessments

APPENDIX A:

Recommended Conditions of Consent

See website at http://majorprojects.planning.nsw.gov.au/index.pl?action=view_job&job_id=8072

APPENDIX B:

Environmental Impact Statement

See website at http://majorprojects.planning.nsw.gov.au/index.pl?action=view_job&job_id=8072

APPENDIX C:

Submissions

See website at http://majorprojects.planning.nsw.gov.au/index.pl?action=view_job&job_id=8072

APPENDIX D:

Response to Submissions

See website at http://majorprojects.planning.nsw.gov.au/index.pl?action=view_job&job_id=8072