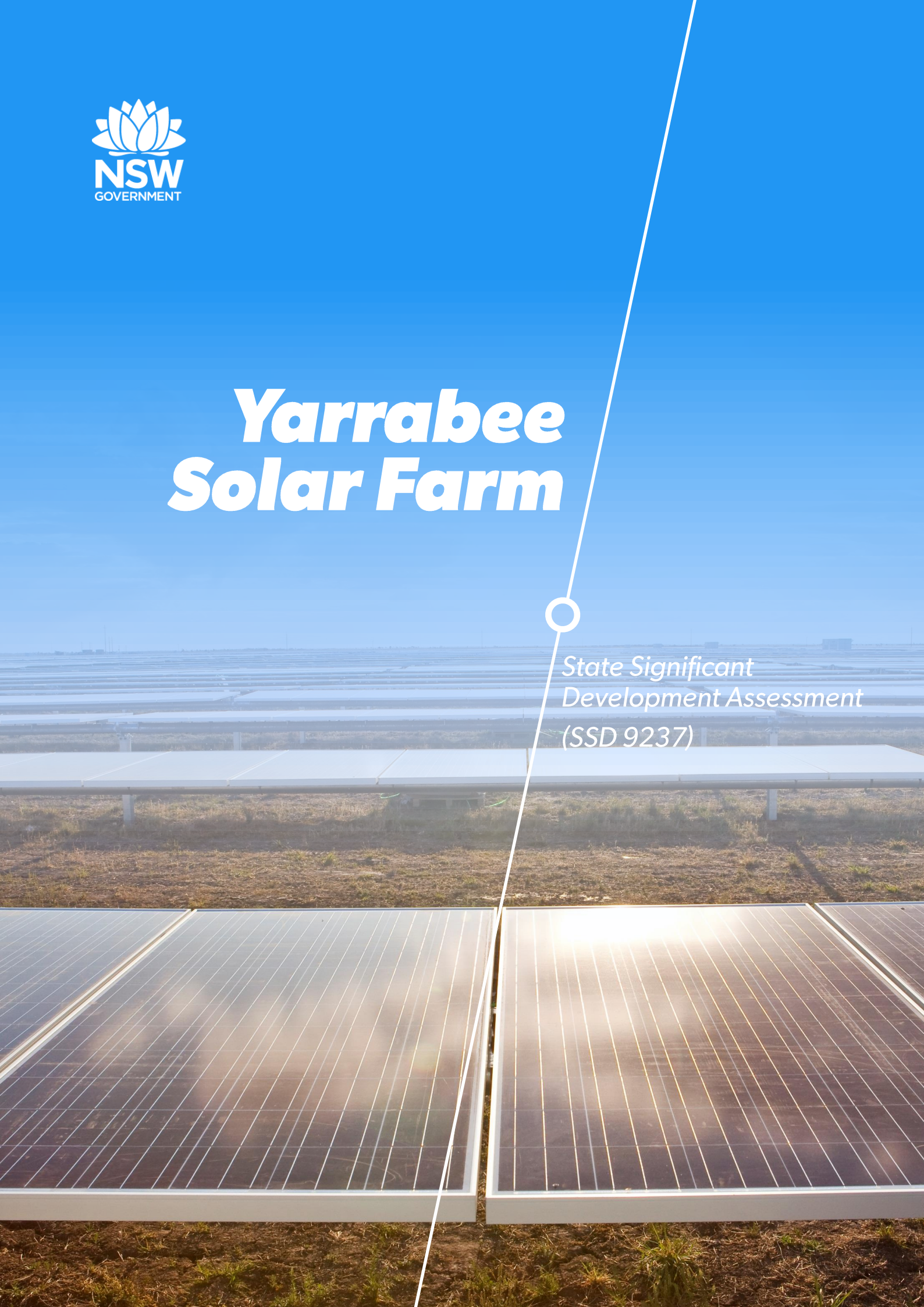
NSW GOVERNMENT

Yarrabee Solar Farm

State Significant Development Assessment (SSD 9237)



December 2018

Cover photo

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Executive Summary

Reach Solar énergy Management Company Pty Ltd proposes to develop a new 900 megawatt (MW) solar farm with 35 MW/70 MW-hours of battery storage about 23 kilometres (km) southwest of Narrandera.

Engagement

The Department exhibited the Environmental Impact Statement for the project from 27 August 2018 until 24 September 2018 and received 11 submissions, all from government agencies. No submissions were received from the general public or special interest groups.

Narrandera Shire Council supports the project and none of the other agencies objected to the project.

Assessment

The two key assessment issues for the project are land use compatibility and the potential traffic impacts.

The project would use around 2,600 hectares of agricultural land and with the other approved solar farms in the region would contribute to the loss of around 4,350 hectares of agricultural land to solar development. The Department considers the loss of this land would have a negligible impact on the agricultural output of the region, given it represents about 0.0005% of the agricultural land in the region.

Further, the site itself is only suitable for grazing and dryland cropping and is not considered to be prime agricultural land. Finally, the project is consistent with the strategic intent to broaden the diversity of primary industries in the region and encourage greater solar development to take advantage of the region's solar resources.

The potential traffic impacts would be relatively short-term, minor in nature and can be managed in accordance with Government policy. Nevertheless, the Department has recommended strict conditions requiring road upgrades and a comprehensive Traffic Management Plan.

Summary

Overall, the Department considers the site to be suitable for the project as it has good solar resources and is close to the existing electricity network.

The project is consistent with both the Commonwealth's *Renewable Energy Target* and NSW's *Renewable Energy Action Plan* as it would contribute 900 MW of renewable energy into the National Electricity Market. The project would also provide flow-on benefits to the local community, including up to 450 full time construction jobs during each stage, with a capital investment of $957 million and community funding contributions through a voluntary planning agreement with Narrandera Shire Council.

As such, the Department considers that the project would result in benefits to the State of NSW and the local community and is therefore in the public interest.

Contents

1. Introduction

Reach Solar énergy Management Company Pty Ltd (the Applicant) proposes to develop a new 900 megawatt (MW) solar farm with 35 MW/70 MW-hours (MWh) of battery storage approximately 23 kilometres (km) southwest of Narrandera, primarily located in the Narrandera local government area (LGA) with a portion of the western internal road located in Murrumbidgee LGA (see **Figure 1**).

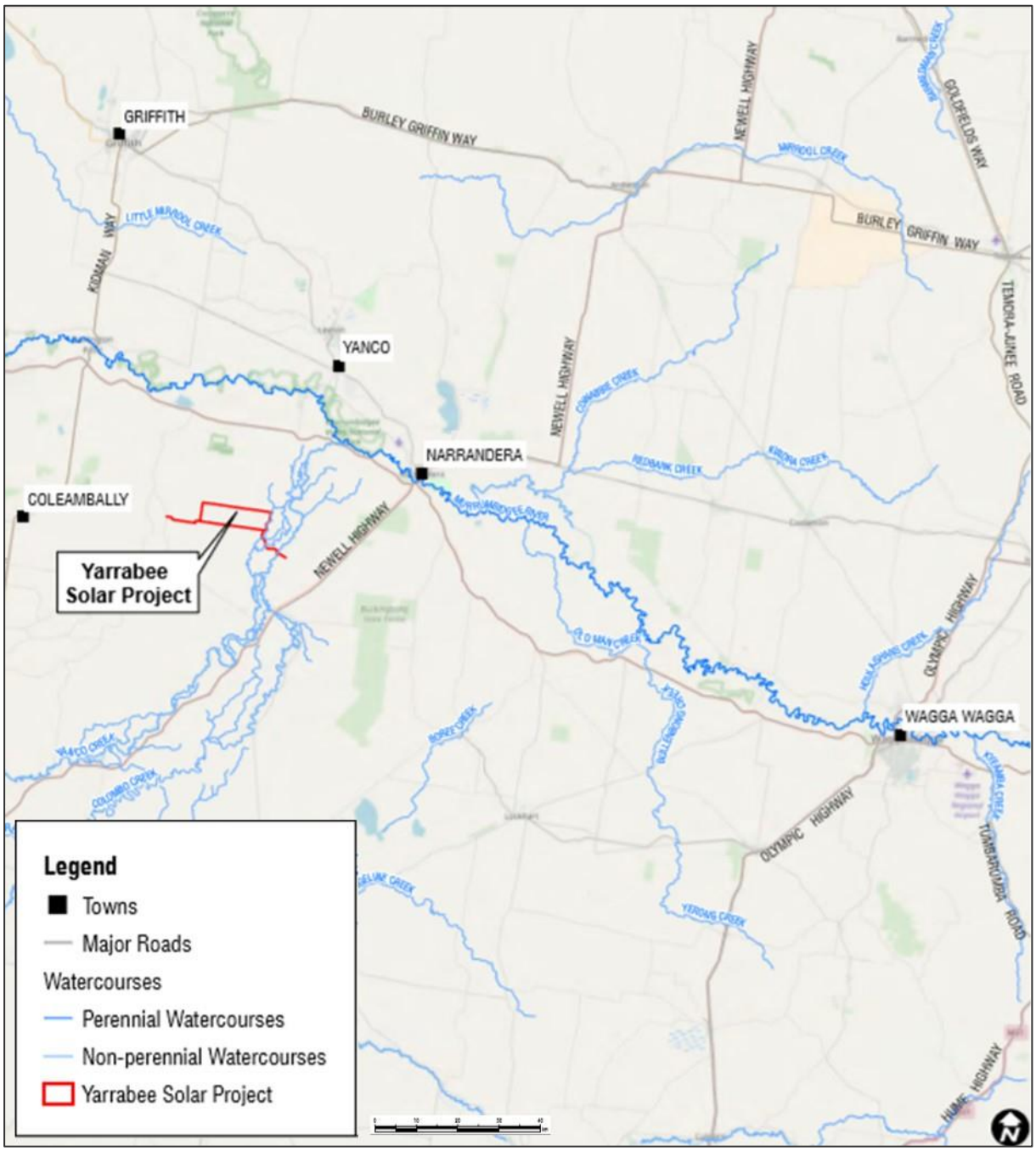

Figure 1 | Regional Context

2. Project

The project involves the construction of a new solar farm with a generating capacity of approximately 900 MW and 35 MW/70 MWh of battery storage. It also involves the upgrading and decommissioning of infrastructure and equipment in the future. While the capacity of the project may increase over time as technology improves, the footprint of the development would not increase.

The solar farm would be constructed in three stages, with each stage comprising around 300 MW and taking up to 18 months.

The key components of the project are summarised in **Table 1**, depicted in **Figure 2**, and described in the Environmental Impact Statement (EIS) (see **Appendix B**) and additional information provided during the Department's assessment of the project (see **Appendix C**).

Table 1 | Main Components of the Project

Aspect	Description
Project summary	The project includes: • approximately 3 million solar panels (up to 4 m high) and 222 inverter stations (up to 3.5 m high); • a lithium-ion battery storage facility within housing containers (35MW/70MWhr capacity); • an on-site 330 kV substation and connection to Transgrid's 330 kV Wagga to Darlington Point transmission line located adjacent to the northern boundary of the site; • internal access tracks, staff amenities, maintenance and equipment buildings, offices, laydown areas, on-site car parking and security fencing.
Project area	3,000 ha (with a 2,600 ha development footprint)
Access route	• Over-dimensional and heavy vehicles would access the site from the west via the Sturt Highway, Main Canal Road and Old Morundah Road. • Light vehicles and shuttle buses would primarily access the site from the east via the Sturt Highway, Reas Lane and Back Morundah Road, however could use the eastern access route.
Site entry and road upgrades	The site would be accessed via two existing access points, including one on Old Morundah Road and one on Back Morundah Road. Key roadworks include upgrading: • the Sturt Highway and Main Canal Road intersection, Main Canal Road and Old Morundah Road intersection, Old Morundah Road and western site access point intersection, and widening and sealing sections of Old Morundah Road along the western site access route. • the Sturt Highway and Reas Lane intersection, Back Morundah Road and eastern site access point intersection, and widening and sealing sections of Back Morundah Road along the eastern site access route.
Operational life	• The expected operational life of the infrastructure is approximately 30 to 50 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 and below ground infrastructure.
Construction	• As the project is to be constructed in three stages, there would be three construction periods, each lasting for up to 18 months. • Construction hours would be limited to Monday to Friday 7am to 6pm, and Saturday 8am to 1pm.
Hours of operation	• The project would operate during daylight hours. • Daily operations and maintenance would be undertaken Monday to Friday 7am to 6 pm and Saturday 8am to 1pm.
Employment	• Up to 450 construction jobs during each construction stage, and up to 15 operational jobs.
Capital investment value	$957 million

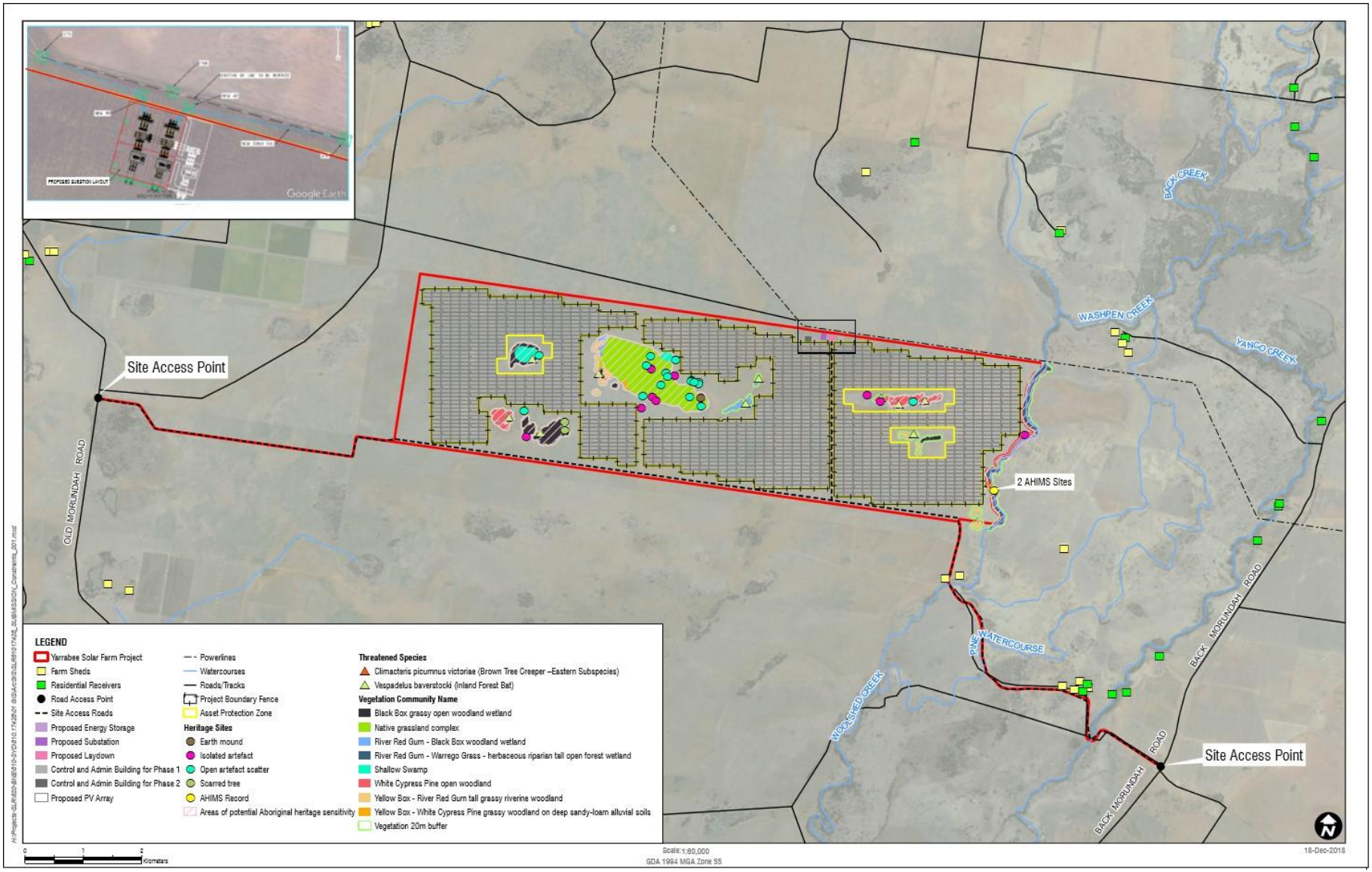

Figure 2 | Project Layout

3. Strategic Context

3.1 Project setting

The project is located on an approximately 3,000 hectare (ha) site within the Riverina Murray Region of NSW. It is zoned RU1 – Primary Production under the *Narrandera Shire Council Local Environment Plan 2013* (Narrandera LEP) and is comprised of flat, open grasslands (with pockets of remnant vegetation) that have historically been cleared for agricultural purposes, including cropping and grazing.

The eastern side of the site is bound by Washpen Creek, which forms the western boundary of the Yanco Creek system floodplain which spans approximately 5.3 km east to Yanco Creek (see **Figure 2**).

The proposed development footprint within the site is approximately 2,600 ha and has been designed to largely avoid site constraints including remnant native vegetation and Aboriginal heritage items.

The land surrounding the site is also zoned RU1 and is used for agricultural purposes. There is only one non-associated residence within 4 km of the project site, which is located approximately 1.5 km to the north-east of the site (see **Figure 2**).

Transgrid's 330kV Wagga to Darlington Point transmission line runs adjacent to northern boundary of the project site.

3.2 Other Solar Farms

The Riverina Murray Region has attracted considerable interest from solar developers given the proximity of major transmission lines and existing electricity substations.

In this regard, there are seven operational, approved or proposed State significant development solar projects within 60 km of the project (see **Table 2** and **Figure 3**).

Table 2 | Nearby Solar Farms

Project	Capacity (MW)	Status	Distance from the project (km)
Darlington Point	275	Approved	17
Coleambally	150	Operational	20
Yanco	60	Proposed	26
Avonlie	200	Proposed	28
Sandigo	100	Approved	43
Griffith	27	Operational	52
Riverina	30	Under construction	53

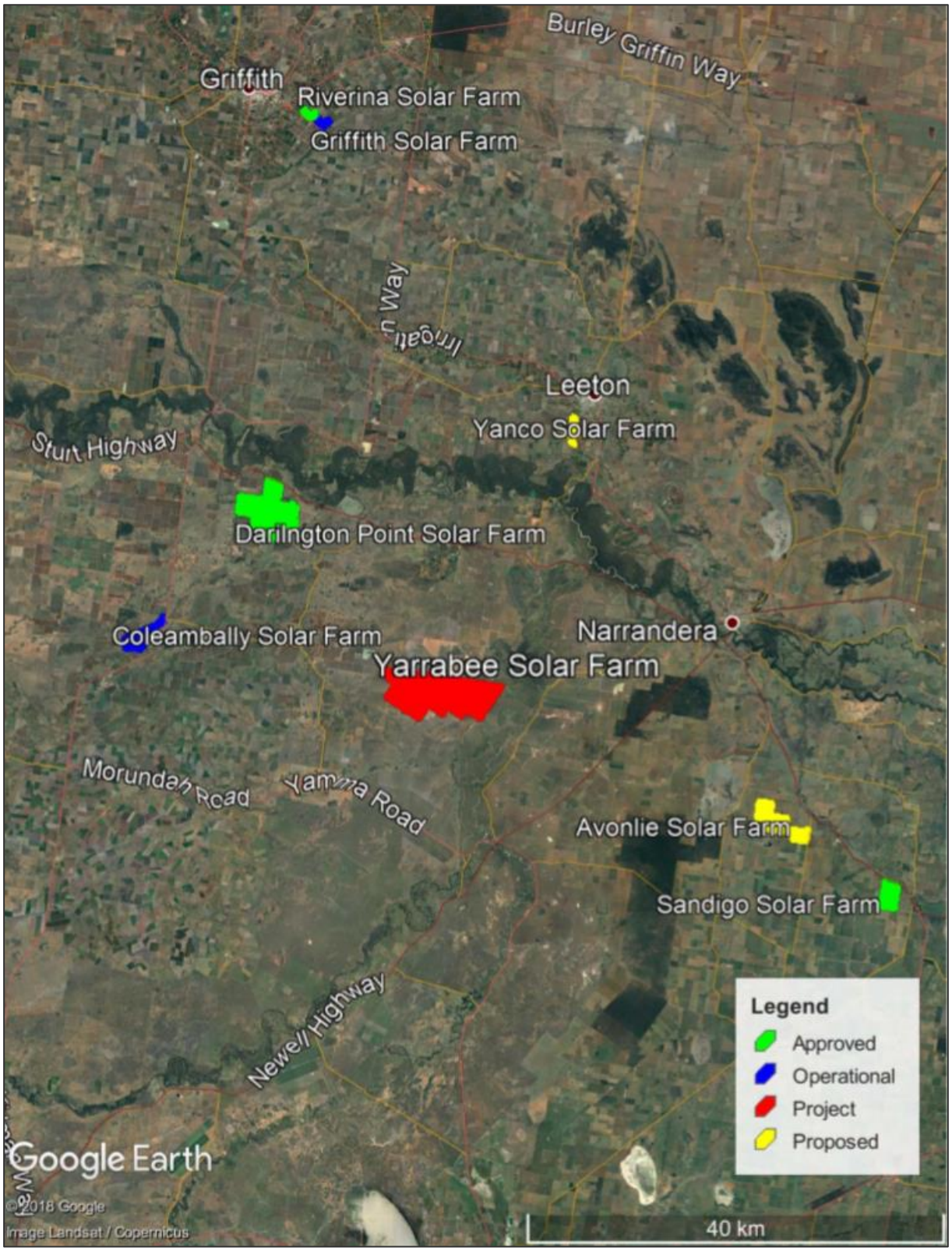

Figure 3 | Nearby Solar Farms

The key issues for cumulative impacts relate to workforce accommodation, traffic and impacts on agricultural land.

Three of these solar projects (i.e. Coleambally Solar Farm, Griffith Solar Farm and Riverina Solar Farm) are either operational or currently under construction. As such, there would no overlap in construction periods. Additionally, Yanco Solar Farm is at an early stage of the assessment process as the Department has not yet received a development application or environmental impact statement (EIS) for the project yet, while Avonlie Solar Farm and Sandigo Solar Farm are located closer to Wagga Wagga.

As such, cumulative impacts are only likely to occur if the project and Darlington Point Solar Farm are constructed simultaneously and would be limited to impacts associated with workforce accommodation and construction traffic.

In regard to workforce accommodation, the construction workforce for many of these solar projects would be sourced from the local and wider region, including neighbouring towns and LGAs, as discussed further in **section 6.3**.

In regard to construction traffic impacts, while the surrounding regional road network may experience an increase in traffic numbers, the local roads along the Yarrabee Solar Farm's transport route would not experience cumulative impacts, as only the project would be using these roads for construction traffic, as discussed further in **section 6.2**.

The broader potential cumulative impacts on agricultural land in the region is discussed further in **section 6.1**.

There would be no cumulative visual or noise impacts due to the distance from the project to other projects in the region.

3.3 Energy Context

In 2017, NSW derived approximately 15.8% of its energy from renewable sources. The rest was derived from fossil fuels, including 79.3% from coal and 4.8% from gas. 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 2017 *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 generation 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* 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*. Under this target, more than 20% of Australia's electricity would come from renewable energy by 2020. It is estimated that an additional 5,400 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 eight major operational projects, including the largest solar farm in Australia.

In March 2018, the NSW Government identified 10 potential Energy Zones across three broad regional areas, including the New England, Central West and South West regions of NSW. The project would be located within the proposed South West Energy Zone.

With a capacity of 900 MW, the project would generate enough electricity to power over 336,000 homes, and is therefore consistent with both the Commonwealth's *Renewable Energy Target* and NSW's *Renewable Energy Action Plan*.

4. Statutory Context

4.1 State Significant Development

The project is classified as State Significant Development under Section 4.38 of the *Environmental Planning and Assessment Act 1979* (EP&A Act). This is because it triggers the criteria in Clause 20 of Schedule 1 of *State Environmental Planning Policy (SEPP) (State and Regional Development) 2011*, as it is development for the purpose of electricity generating works 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 11 October 2017, the Executive Director, Resource Assessments and Business Systems, may determine the development application.

4.2 Permissibility

The site is located wholly within land zoned RU1 Primary Production under the *Narrandera Local Environment Plan 2013* (Narrandera LEP). As a solar farm is not expressly listed as permitted with or without consent on land zoned RU1, it is a prohibited land use under a strict reading of the Narrandera LEP, as discussed further in **section 6.1**.

However, under the *SEPP (Infrastructure) 2007* (Infrastructure SEPP) electricity generating works are permissible on any land in a prescribed rural, industrial or special use zone, including on RU1 zone. Consequently, the project is permissible with development consent.

4.3 Integrated and Other Approvals

Under Section 4.41 of the EP&A Act, a number of other approvals are integrated into the State Significant Development approval process, and consequently are not required to be separately obtained for the proposal.

Under Section 4.42 of the EP&A Act, a number of further approvals are required, but must be substantially consistent with any development consent for the proposal (e.g. approvals for any works under the *Roads Act 1993*).

The Department has consulted with the relevant government agencies responsible for the integrated and other approvals, considered their advice in its assessment of the project, and included suitable conditions in the recommended conditions of consent to address these matters (see **Appendix G**).

4.4 Mandatory Matters for Consideration

Section 4.15 of the EP&A Act outlines the matters that a consent authority must take into consideration when determining development applications. These matters are summarised as:

- the provisions of environmental planning instruments (including draft instruments), development control plans, planning agreements, and the EP&A Regulations;
- the environmental, social and economic impacts of the development;
- the suitability of the site;
- any submissions; and
- the public interest, including the objects in the EP&A Act and the encouragement of ecologically sustainable development (ESD).

The Department has considered all of these matters in its assessment of the project, as well as the Applicant's consideration of environmental planning instruments in its EIS, as summarised in **section 6** of this report. The Department has considered relevant provisions of the environmental planning instruments in **Appendix D**.

5. Engagement

5.1 Department's Engagement

The Department publicly exhibited the EIS from 27 August 2018 until 24 September 2018 and advertised the exhibition in the Narrandera Argus and Griffith Area News.

The Department has consulted with the relevant Government agencies throughout the assessment process, including Narrandera Shire Council and Murrumbidgee Council.

5.2 Submissions and Response to Submissions

During the exhibition, the Department received 11 submissions on the project, all from Government agencies. No submissions were received from the general public or special interest groups.

Full copies of the submissions are attached in **Appendix E**.

The Applicant provided a response to all matters raised in submissions on the project (see **Appendix F**), as well as additional information to address matters raised by the Department and other agencies during the assessment process (see **Appendix C**).

5.3 Key Issues – Government Agencies

Narrandera Shire Council supports the development of the project. However, Council initially raised concerns about the proposed road upgrades and potential impacts on local infrastructure and services, and requested development contributions. These matters were addressed by the Applicant in its RTS and the additional information provided during the assessment of the project, and are discussed in **sections 6.2** and **6.3**, respectively.

Murrumbidgee Council did not make a formal submission on the project and did not raise any concerns about the project or the recommended conditions of consent with the Department.

The **Office of Environment and Heritage** (OEH), initially raised concerns regarding the Aboriginal cultural heritage and biodiversity impacts of the project, and the level of flood impact assessment undertaken. However, after reviewing the response to submissions (RTS) and additional information, OEH advised that it has no objection to the project, subject to the recommended conditions of consent, as discussed further in **section 6.3**.

Roads and Maritime Services (RMS) did not object to the project, provided the Applicant was required to prepare a comprehensive Traffic Management Plan and undertake the relevant road upgrades prior to construction. These recommendations are discussed in **section 6.2** and have been incorporated into the recommended conditions of consent.

The **Department of Industry – Lands and Water** (DoI - L&W) requested additional information on the project's water usage and recommended that the Applicant be required to comply with the relevant guidelines for watercourse crossings, where relevant. The Applicant addressed these matters in the RTS as discussed further in **section 6.3**.

The **Rural Fire Service** (RFS) and **Fire & Rescue NSW** recommended the Applicant be required to develop a Fire and Emergency Response Plan, which has been incorporated into the recommended conditions of consent.

The **Division of Resources and Geoscience** (DRG) confirmed that the project would not sterilise any significant mineral resources.

TransGrid raised no concerns about the project and made no recommendations.

The **Environment Protection Authority**, **Local Land Services** and **SafeWork NSW** raised no concerns about the project and made no recommendations.

6. Assessment

The Department has undertaken a comprehensive assessment of the merits of the project. This report provides a detailed discussion of the two key issues: land use compatibility, and potential traffic impacts.

The Department has also considered the full range of potential impacts associated with the project, including the potential cumulative impacts of the other solar projects in the region, and has included a summary of the conclusions relating to these in **section 6.3**.

The key constraints for the project are depicted in **Figure 2** and a list of the key documents that informed the Department's assessment is provided in **Appendix A**.

6.1 Compatibility of Proposed Land Use

Provisions of the Narrandera LEP

The site is located wholly within the RU1 Primary Production zone under the Narrandera LEP. As a solar farm is not expressly listed as permitted with or without consent on land zoned RU1, it is a prohibited land use under a strict reading of the Narrandera LEP.

However, based on a broader reading of the Narrandera LEP, and consideration of the objectives of the RU1 zone and other strategic documents for the region, the Department considers that there is no clear intention to prevent the development of a solar farm on the project site.

Firstly, the Narrandera LEP expressly references the Infrastructure SEPP and acknowledges that electricity generating works are regulated by the Infrastructure SEPP, rather than the LEP. As described above, a solar farm is permitted with consent on land zoned RU1 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 and systems appropriate for the area; and
- minimising fragmentation and alienation of resource lands.

The proposed development would not fragment or alienate any resource lands during its operation as it has generally low impacts and it could easily be returned to agricultural land following decommissioning. In addition, Council supports the development, subject to the implementation of appropriate environmental mitigation measures.

Additionally, while the Narrandera LGA has traditionally relied upon agriculture, the introduction of solar energy generation would contribute to a more diverse local industry, thereby supporting the local economy and community. The proposed solar farm would encourage a new element of agricultural enterprise in renewable energy development which is an objective of Council's *Narrandera Shire Economic Development Strategy 2017-2020*.

Finally, the project is also consistent with the Department's *Riverina Murray Regional Plan 2036* which identifies the development of renewable energy generation as a future growth opportunity for the region.

Potential Impacts on Agricultural Land

The project is located within the Riverina Murray Region, which makes the largest regional contribution to agricultural production in NSW. The project site is not mapped as Biophysical Strategic Agricultural Land (BSAL). The soils on the site are classified as having Class 4 Rural Land Capability under the *Land and Soil Capability Mapping in NSW* (OEH, 2017), which means it is generally only suitable for grazing with limitations and is not suitable for cultivation unless special management practices are employed. Notwithstanding, the site has historically been used for agricultural purposes of grazing and dryland cropping.

The site covers an area of approximately 3,000 ha and the development footprint of the project infrastructure is approximately 2,600 ha. The agricultural output from the site would be reduced by the development of the solar farm while the project remains operational, however managed grazing could occur during the operation of the project to maintain the height of the ground cover.

The development footprint of the project combined with the approved and/or operating Darlington Point Solar Farm, Coleambally Solar Farm, Sandigo Solar Farm, Griffith Solar Farm and Riverina Solar Farm would be 4,346 ha. The loss of 4,346 ha of agricultural land represents a very small fraction (~0.0005 %) of the 9.1 million ha of land being used for agricultural output in the Riverina Murray Region[1] and would result in a negligible reduction in the overall productivity of the region.

Additionally, the inherent agricultural capability of the land would not be affected by the project due to the relatively low disturbance associated with the solar farm development. Furthermore, neither DoI L&W nor Council raised any concerns about the impacts of the project on the long-term use of the land for agricultural purposes.

[1] Riverina Murray Agricultural Industries Final Report, Department of Planning and Environment, January 2016.

The potential loss of a small area of agricultural 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;
- the economic benefits of solar energy in an area with good solar resources and capacity in the existing electricity infrastructure; and
- the benefits of dispatchable energy for grid stability and reliability.

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 ensure the agricultural capability of the land is reinstated following the decommissioning of the project.

6.2 Traffic and Transport

Transport Routes and Site Access

Heavy and over-dimensional vehicles would be used to transport the infrastructure components required for the project to the site. These vehicles would travel via the Sturt Highway, Main Canal Road, Old Morundah Road and to an existing site access point and then via an internal road located off Old Morundah Road (see **Figure 2**).

Light vehicles and shuttle buses used to transport construction personnel to the site would primarily travel via the Sturt Highway, Reas Lane, Back Morundah Road to an existing site access point and then via an internal road located off Back Morundah Road (see **Figure 2**). However, light vehicles and shuttle buses could also use the over-dimensional and heavy vehicle access route.

The Sturt Highway is a State road that serves as a key transport route for traffic travelling to local, regional and interstate locations. Main Canal Road, Old Morundah Road, Reas Lane and Back Morundah Road are local roads comprised of both sealed and unsealed surfaces and are mostly used by local traffic. Main Canal Road and Old Morundah Road are located within Murrumbidgee LGA, while Reas Lane and Back Morundah Road are located within Narrandera LGA.

While the Sturt Highway would experience cumulative impacts from the construction traffic associated with the Darlington Point Solar Farm if both projects were constructed concurrently, the local roads along the project's transport route would not experience cumulative impacts, as only the project would be using these roads for construction traffic.

Traffic Volumes

There would be minimal traffic to and from the project site during the operation of the project (i.e. no more than 2 heavy vehicle movements per day). Consequently, the only material traffic impacts would occur during each of the three 18 month construction periods, and during decommissioning and major upgrades of the project.

The estimated peak number of heavy vehicles using Main Canal Road and Old Morundah Road daily during construction would be 50. Additionally, up to 5 over-dimensional vehicles would be required to deliver the substation components.

Construction personnel would commute to the site in light vehicles and shuttle buses. The estimated peak number of vehicles using Reas Lane and Back Morundah Road daily by construction personnel during construction would be 22, comprising 15 light vehicles and 7 shuttle buses.

As construction activities would be restricted to daytime hours, construction related vehicles would only be using the local road network during the day.

Project traffic during decommissioning and major upgrades would be similar to construction traffic levels, but over shorter durations.

Road Upgrades and Maintenance

The RMS and both Councils support the proposed transport route, provided the required road upgrades are undertaken to support the increased traffic.

These include the following upgrades along the over-dimensional and heavy vehicle transport route within Murrumbidgee LGA:

- upgrade the intersection of the Sturt Highway and Main Canal Road, including providing an Auxiliary Left Turn - Short (AUL(s)) treatment;
- upgrade Main Canal Road to allow two-way construction traffic from the intersection of the Sturt Highway to Old Morundah Road, including sealing Main Canal Road a minimum of 50 m from the edge of the Sturt Highway travel lane;
- upgrade the intersection of Main Canal Road and Old Morundah Road, including providing a Basic Left Turn (BAL) treatment; and
- upgrade Old Morundah Road to allow two-way construction traffic from the intersection of Main Canal Road to the site access point, including widening and sealing to a minimum width of 7 m, with 0.5 m gravel shoulders; and
- upgrade the site access point off Old Morundah Road with a Rural Property Access type treatment to cater for the largest vehicle accessing the site, including providing a BAL treatment.

Additionally, the following upgrades would be required along the light vehicle and shuttle bus route within Narrandera LGA:

- upgrade the intersection of the Sturt Highway and Reas Lane, including a BAL treatment;
- upgrade the intersection of Reas Lane and Back Morundah Road, including providing a Basic Right Turn (BAR) and BAL treatment;
- upgrade Back Morundah Road to allow two-way construction traffic from the intersection of Reas Lane to 100 m past the site access point, including widening and sealing to a minimum width of 6 m, with 0.5 m gravel shoulders; and
- upgrade the site access point off Back Morundah Road (shown in Appendix 1) with a Rural Property Access type treatment to cater for the largest vehicle accessing the site, including providing a BAR treatment.

The Applicant has accepted the proposed upgrades and has confirmed they would be designed and constructed to the satisfaction of the relevant roads authority. Additionally, the Applicant has committed to preparing road dilapidation surveys and repairing any damage resulting from the construction traffic.

Recommended Conditions

The Department has recommended conditions of consent requiring the Applicant to:

- undertake the relevant road upgrades prior to the commencement of construction;
- restrict the number of vehicles during construction, upgrading and decommissioning;
- ensure the length of vehicles accessing the site (excluding over-dimensional vehicles) does not exceed 26 m; and
- prepare a Traffic Management Plan in consultation with RMS and the Councils, including provisions for dilapidation surveys, a flood response plan and details of the measures that would be implemented to address road safety.

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

6.3 Other Issues

The Department's consideration of other issues is summarised in **Table 3**.

Table 3 | Other Issues

Issue	Findings	Recommended Condition
Heritage	• The site contains 25 Aboriginal heritage items, including 9 isolated finds, 13 artefact scatters, 1 earthen mound, and 2 scarred trees. Of these, 20 were considered to be of low significance, 4 of moderate significance and one of moderate to high significance. • The project's development footprint has been designed to avoid 19 of the Aboriginal heritage items, including all items of moderate to high significance. However, 6 items of low significance are located on an existing access track and likely to be disturbed. The Applicant has committed to salvaging and relocating these items prior to commencing construction. • Given the moderate to 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. • There are no items of historic heritage value within or surrounding the site. • With these measures, both the Department and OEH consider that the project would not significantly impact the heritage values of the locality.	• Ensure the development does not cause any direct or indirect impacts on any items located outside the approved development footprint. • Minimise and manage impacts on the 6 Aboriginal heritage items located within the development footprint, including undertaking salvage and relocation. • Prior to construction, prepare and implement a Heritage Management Plan in consultation with OEH and relevant Aboriginal stakeholders for the project, which includes a Chance Finds Protocol.
Biodiversity	• The site is mostly comprised of cleared agricultural land, but includes 91.75 ha of patches of remnant native vegetation ranging in size from 3 ha to 35 ha (see **Figure 2**). This includes a remnant patch of 12.87 ha of White Cypress Pine open woodland (PCT 28), listed as an endangered ecological community (EEC) under the *Biodiversity Conservation Act 2016*. • The project has been designed to avoid clearing all remnant native vegetation, including the 12.87 ha of EEC. • As such, the proposal is unlikely to have a significant impact on any threatened species. • Notwithstanding, OEH raised concerns that the site perimeter fencing has the potential to impact on fauna, particularly the Inland Forest Bat (*Vespadelus baverstocki*) listed as vulnerable under the *Biodiversity Conservation Act 2016*, and requested a Biodiversity Management Plan be implemented that incorporates a strategy to undertake regular monitoring of the perimeter fence for entangled fauna. • With these measures, both OEH and the Department consider that the project is unlikely to result in a significant impact on the biodiversity values of the locality.	• Prepare and implement a Biodiversity Management Plan which includes a strategy to regularly monitor the site perimeter fence for entangled fauna.

Issue	Findings	Recommended Condition
Visual	• The relatively low height of the project would limit the visual impact from most surrounding viewpoints. • The nearest non-associated residence is located 1.5km from the project site. Eight further non-associated residence are located between 2.3 km to 5 km of the site (see **Figure 2**). • Distance, existing vegetation and topography would result in negligible visual impacts for all non-associated residential receivers, including the nearest residence, and consequently no additional visual screening is required. • The photovoltaic panels are designed to absorb rather than reflect sunlight, and the Department is satisfied that the project would not cause noticeable glint or glare compared to other building surfaces. • The Department considers there would be no visual impacts on the surrounding residences or road users.	• Ensure that external lighting is minimised and complies with the relevant Australian Standards. • Prohibit any signage or advertising on the development, unless for safety purposes.
Noise	• Given the distance of all non-associated residences from the project site, no non-associated residences would be subject to noise impacts above the 'noise affected' criterion of 45 dB(A) in the EPA's *Interim Construction Noise Guideline* (ICNG). • Notwithstanding, the Applicant has committed to minimising and managing construction noise implementing the noise mitigation work practices set out in the ICNG, including 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, including consultation with nearby landowners. • Restrict construction hours to Monday to Friday 7 am to 6 pm, and Saturday 8 am to 1 pm.
Soil and water	• The project is located adjacent to the Yanco Creek floodplain system, which spans approximately 5.3 km east to west, with Washpen Creek forming its western boundary and Yanco Creek forming its eastern boundary (see **Figure 2**). • The project's development footprint has been designed to be setback from Washpen Creek, which abuts the eastern site boundary, a minimum of 40 m. • However, the existing internal road connecting the project's development footprint to Back Morundah Road traverses the Yanco Creek floodplain system. • The Applicant undertook a detailed Hydrological and Flood Modelling Study to assess the impacts of the project on flood levels during a 1% Annual Exceedance Probability (AEP) event. • The study demonstrated that in a 1% AEP event the project would have no impact on existing flood levels or flows, and that project infrastructure is designed to be secure so it would not be washed away in a flood and cause a hazard.	• Prohibit water pollution in accordance with Section 120 of the *Protection of the Environment Operations Act 1997*. • Undertake activities in accordance with OEH's *Managing Urban Stormwater: Soils and Construction* (Landcom, 2004) manual and *Guidelines for Controlled Activities on Waterfront Land* (DPI Water, 2012).

Issue	Findings	Recommended Condition
	• With the incorporated setback from Washpen Creek and the Yanco Creek floodplain system, the Department and DoI – L&W are satisfied the project is unlikely to have a significant impact on surface water behaviour. However, DoI – L&W requested that any upgrades to the watercourse crossings on the existing internal road are designed in accordance with the relevant guidelines. • The Department considers any erosion and sedimentation risks associated with the project can be effectively managed using best practice construction techniques. • The project would require approximately 350 megalitres (ML) of water during each of the three stages of construction and decommissioning (mainly for dust suppression) and 5 ML of water annually during operation. • The Applicant is proposing to source this water from either an existing on-site bore, the host landowners water supply works and water use approval, purchasing the water from adjoining landowners, trucking water to site or harvesting site surface water. • DoI – L&W accepts there is sufficient water supply for the project, but noted that changes may be required to the existing water licences to facilitate the provision of water to the project. • The project is not expected to affect groundwater resources.	
Battery storage facility hazards	• In response to increasing demands for dispatchable energy, the Applicant is proposing to install an on-site lithium-ion battery storage facility. The type of battery storage system used would be selected during the detailed design phase. • The Applicant would implement a range of hazard prevention and mitigation measures including (but not limited to): - a 20 m Asset Protection Zone (APZ) around the battery storage facility; - automated monitoring and control systems, with alarm and shutdown capability; and - appropriate separation between battery cubicles / containers. • The preliminary risk screening included in the EIS was undertaken in accordance with *SEPP No.33 – Hazardous and Offensive Development* and determined that a Preliminary Hazard Assessment was not required. • Subject to the recommended conditions, the Department is satisfied that risks associated with the facility would be negligible.	• Prepare and implement a Fire Safety Study consistent with the Department's *Hazardous Industry Advisory Paper No. 2, 'Fire Safety Study'* guideline and the *'Best Practice Guidelines for Contaminated Water Retention and Treatment Systems'*. • Prepare and implement an Emergency Plan consistent with the Department's *Hazardous Industry Advisory Paper No. 1.*

Issue	Findings	Recommended Condition
Other hazards	• The project would comply with relevant Australian Standards for electric and magnetic fields, including the National Health and Medical Research Council standards. • The bushfire risks can be suitably controlled through the implementation of standard fire management procedures, including the establishment of a static water supply (20,000 litres) near the substation for fire protection. • The Applicant has committed to including a 10 m defendable space, managing the entire site as an Asset Protection Zone and preparing a bushfire management plan to manage fire risk. • The Department is satisfied that the bushfire risks can be suitably controlled through the implementation of standard fire management procedures.	• Ensure that the entire development area complies with relevant asset protection requirements in the RFS's *Planning for Bushfire Protection 2006*. • Prepare and implement a Fire Management and Emergency Response Plan in consultation with RFS and Fire & Rescue NSW.
Workforce accommodation	• Up to 450 personnel would be required during construction for each of the three proposed stages of the project. • As discussed in **section 3.2**, there are seven large-scale solar projects within 70 km of the project at various stages of the development process. • Of these, it is likely that the main potential cumulative impacts on construction workforce accommodation would occur if the project is constructed simultaneously with Darlington Point Solar. • Should both projects be approved and their construction periods overlap, there would be up to 750 construction personnel required at a time. • Notwithstanding, the Applicant undertook an assessment of accommodation availability in the surrounding area for the construction period, including Narrandera local government area, as well as other regional centres, such as Wagga Wagga and Griffith. • The assessment indicated there is likely to be sufficient accommodation available to house workers during the construction period. • To ensure there would be sufficient accommodation to house construction employees, the Applicant would be required to develop an Accommodation and Employment Strategy.	• Prepare an Accommodation and Employment Strategy for the project in consultation with Narrandera Shire Council.
Community contributions	• The Applicant and Narrandera Shire Council have agreed to enter into a Voluntary Planning Agreement (VPA) for the project. • The terms of the VPA include the Applicant providing development contributions in the form of three lump sum payments equivalent to 0.1% of the capital investment value of each of the three stages of the project, on-going contributions in the order of $50,000 per annum over the operational life of the project and a lump sum payment of $10,000 to contribute towards the preparation of the VPA.	• The Applicant must enter into a VPA with Narrandera Shire Council prior to construction, in accordance with: - Division 7.1 of Part 7 of the EP&A Act; and - the terms of the offer from the Applicant.

Issue	Findings	Recommended Condition
	• The project is unlikely to result in significant additional demand on community services and infrastructure (excluding roads) given the relatively low level of local employment generated once it is operational. • Notwithstanding, the Applicant has committed to contributing towards a community benefit fund to support community groups, programs and activities in the locality, for an amount in accordance with Narrandera Shire Council's request. • The funding would be administered via a VPA established under Section 7.4 of the EP&A Act.	

7. Evaluation

The Department has assessed the development application, EIS, submissions, RTS and additional information provided by the Applicant and relevant government agencies. The Department has also considered the objectives and relevant considerations under section 4.15 of the EP&A Act.

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. The project has been designed to largely avoid key constraints, including remnant native vegetation and Aboriginal heritage items. Any residual impacts would be minor and can be managed through the recommended conditions of consent.

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

To address the residual impacts of the project, the Department has recommended a range of detailed conditions, developed in conjunction with agencies and the Council, to ensure these impacts are effectively minimised or offset. The Applicant has reviewed the conditions and does not object to them.

Importantly, the project would assist in transitioning the electricity sector from coal and gas-fired power stations to renewable energy sources. It would generate over 1.98 million MWh of clean electricity annually, which is enough to power over 336,000 homes and save over 1.9 million tonnes of greenhouse gas emissions per year. It is therefore consistent with the goals of the Commonwealth's *Renewable Energy Target* and NSW's *Renewable Energy Action Plan*. Further, the project includes a 40 MWh battery storage facility that would enable the project to store solar energy for dispatch to the grid, which would contribute to increased grid stability and energy security.

The Department considers 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, including up to 450 full time construction jobs during each stage, with a capital investment of $957 million and community funding contributions through a voluntary planning agreement with Narrandera Shire Council. On balance, the Department believes that the project is in the public interest and should be approved, subject to the recommended conditions of consent.

8. Recommendation

It is recommended that the Executive Director, as delegate of the Minister for Planning:

- **considers** the findings and recommendations of this report; and
- **accepts** and **adopts** all of the findings and recommendations in this report as the reasons for making the decision to grant consent to the application;
- **agrees** with the key reasons for approval listed in the notice of decision;
- **grants consent** to the application in respect of the Yarrabee Solar Farm (SSD 9237); and
- **signs** the attached development consent and recommended conditions of consent (see **Appendix G**).

Recommended by:

18/12/18

Diana Mitchell
A/Team Leader
Resource and Energy Assessments

Recommended by:

18/12/18

Clay Preshaw
Director
Resource and Energy Assessments

9. Determination

The recommendation is **Adopted** / **Not adopted by:**

20/12/18

David Kitto
Executive Director
Resource Assessments and Business Systems

Appendices

Appendix A – List of Documents

Yarrabee Solar Project Environmental Impact Statement, SLR Consulting, 17 August 2018.

Yarrabee Solar Project Response to Submissions Report, SLR Consulting, 17 October 2018.

Yarrabee Solar Project Response to Additional Information Request – Issues raised by OEH, SLR Consulting Australia Pty Ltd, 22 November 2018.

Yarrabee Solar Project Response to Additional Information Request – Issues raised by DPE, SLR Consulting Australia Pty Ltd, 26 November 2018.

Asset Protection Zone and Indicative Project Boundary Fence Figure, SLR Consulting, 4 December 2018.

Appendix B – Environmental Impact Statement

See the Department's website at:

http://www.majorprojects.planning.nsw.gov.au/index.pl?action=view_job&job_id=9237

Appendix C – Additional Information

See the Department's website at:

http://www.majorprojects.planning.nsw.gov.au/index.pl?action=view_job&job_id=9237

Appendix D – Statutory Considerations

In line with the requirements of Section 4.15 of the EP&A Act, the Department's assessment of the project has given detailed consideration to a number of statutory requirements. These include:

- the objects found in Section 1.3 of the EP&A Act; and
- the matters listed under Section 4.15(1) of the EP&A Act, including applicable environmental planning instruments and regulations.

The Department has considered all of these matters in its assessment of the project and has provided a summary of this assessment below.

Aspect	Summary
Objects of the EP&A Act	The objects of most relevance to the Minister's decision on whether or not to approve the project are found in Section 1.3(a), (b), (c), (e) and (f) of the EP&A Act. The Department is satisfied that the project encourages the proper development of natural resources (Object 1.3(a)) and the promotion of orderly and economic use of land (Object 5(c)), particularly as the project is: • a permissible land use on the subject land; • located in a logical location for efficient solar energy development; • able to be managed such that the impacts of the project could be adequately minimised, managed, or at least compensated for, to an acceptable standard; and • consistent with the goals of the Renewable Energy Action Plan and would assist in meeting Australia's renewable energy targets whilst reducing greenhouse gas emissions. The Department has considered the encouragement of ESD (Object 1.3(b)) in its assessment of the project. This assessment integrates all significant socio-economic and environmental considerations and seeks to avoid any potential serious or irreversible environmental damage, based on an assessment of risk-weighted consequences. The Applicant has also considered the project against the principles of ESD. Following its consideration, the Department considers that the project can be carried out in a manner that is consistent with the principles of ESD. Consideration of environmental protection (Object 1.3(e)) is provided in **section 6** of this report. Following its consideration, the Department considers that the project is able to be undertaken in a manner that would improve or at least maintain the biodiversity values of the locality over the medium to long term and would not significantly impact threatened species and ecological communities of the locality. The Department is also satisfied that any residual biodiversity impacts can be managed and/or mitigated by imposing appropriate conditions and retiring the required biodiversity offset credits. Consideration of the sustainable management of built and cultural heritage (Object 1.3(f)) is provided in **section 6.5** of this report. Following its consideration, the Department considers the project would not significantly impact the built or cultural heritage of the locality. The Department satisfied that any residual impacts on heritage can be managed and/or mitigated by imposing appropriate conditions.

Aspect	Summary
State Significant Development	Under Section 4.38 of the EP&A Act the project is considered a State Significant Development. The Minister for Planning is the consent authority for the development. Under the Minister's delegation of 11 October 2017, the Executive Director, Resource Assessments and Business Systems, may determine the project.
Environmental Planning Instruments	The *Narrandera Local Environment Plan (LEP) 2013* applies and is discussed in **sections 4.2** and **6.1** of this report. The project is permissible under the Infrastructure SEPP. In accordance with the Infrastructure SEPP, the Department has given written notice of the project to TransGrid as the electricity supply authority for the area. The Applicant completed a preliminary risk screening in accordance with *SEPP No.33 – Hazardous and Offensive Development*, while the screening determined that a Preliminary Hazard Assessment was not required. The Department's consideration of this analysis is discussed in **section 6.3**. The Department has considered the provisions of *SEPP No. 44 – Koala Habitat Protection*. There are patches of remnant woodland on and around the site which contain trees that would be considered suitable habitat for koala. However, due to a lack of recent koala sightings, low numbers of koala records within the locality and the fragmented nature of potential koala habitat within and surrounding the site, the project is not considered to constitute core koala habitat. As such, the Department is satisfied that the project is consistent with the aims, objectives and requirements of SEPP 44. 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.

Appendix E – Submissions

See the Department's website at:

http://www.majorprojects.planning.nsw.gov.au/index.pl?action=view_job&job_id=9237

Appendix F – Response to Submissions

See the Department's website at:

http://www.majorprojects.planning.nsw.gov.au/index.pl?action=view_job&job_id=9237

Appendix G – Recommended Conditions of Consent

See the Department's website at:

http://www.majorprojects.planning.nsw.gov.au/index.pl?action=view_job&job_id=9237