

STATE SIGNIFICANT DEVELOPMENT ASSESSMENT Griffith Solar Farm (SSD 6604)

1. BACKGROUND

Neoen Australia Pty Ltd proposes to develop a new solar farm near Griffith (see **Figure 1**).

1.1 Project setting

The Griffith Solar Farm would be developed on a 125 hectare site off Irrigation Way, approximately seven kilometres southeast of the Griffith CBD. The site is very flat and has been completely cleared for irrigated cropping. No native vegetation remains on the site (see **Figure 2**).

There are six dwellings within two kilometres of the site.

Griffith was established as a regional farming centre by the NSW government in the early 1900s, and agriculture remains the predominant land use in the region. However, Griffith has recently been identified as a 'region of interest' for renewable energy projects. This is because it has good solar resources and spare capacity in its electricity network. Transgrid has a substation 300 metres to the west of the site.



Figure 1: Project Site Location

1.2 Project description

The Griffith Solar Farm is expected to have an initial capacity of 60 megawatts (MW). This capacity is likely to increase over time as technology improves and the solar panels on site are upgraded. Despite these upgrades, the footprint of the development would remain the same.

The preferred access route to the site is via Irrigation Way and Hamilton Road (for the western portion of the site) and then on to Poletta Road (for the eastern portion). This route would need to be upgraded prior to the construction of the project (see **section 4.2** of this report).

Very few people live in close proximity to the site as the more densely populated areas of Griffith are located over five kilometres away. There are five residences on the eastern side of Irrigation Way, and one residence on the western side. The Department has considered the potential impacts of the project on these residences in **section 4** of this report. None of the nearby landowners have objected to the project.

The site is highly disturbed, and has little conservation value.

The project includes landscape planting around the perimeter of the site to minimise any visual impacts. This landscaping would be comprised of plants from the Weeping Myall Woodland endangered ecological community (EEC), and would enhance the existing EEC vegetation in the road reserve.

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

Table 1: Major components of the project

Aspect	Description
<i>Project summary</i>	The project includes: • approximately 200,000 solar panels supported by approximately 25,000 piles; • approximately 26 photovoltaic boxes or skids, each of them containing an inverter and a 33 kilovolt (kV) transformer; • one delivery station in a container, staff amenities and offices; • internal access tracks for site maintenance vehicles and car parking; • perimeter security fencing, approximately 2.3 m high; and • a 33 kV power line connecting to the existing Griffith/Yoogali Transgrid substation.
<i>Project area</i>	125 hectares
<i>Access route</i>	The preferred access route to the site is via Irrigation Way and Hamilton Road for the western lot, and then Poletta Road for the eastern lot. The alternate route would be via Burley Griffin Way, Ross Road, Hamilton Road and/or Poletta Road.
<i>Road upgrades</i>	Key road works include: • upgrading the intersections at Irrigation Way/Hamilton Road (including an auxiliary left hand turn), and Hamilton Road/Poletta Road; and • paving and widening of the currently unsealed Poletta Road.
<i>Site entry points</i>	There would be two site entry points, once located on Hamilton Road, southwest of the Hamilton Road/Poletta Road intersection for the western lot, the other located on Poletta Road for the eastern lot.
<i>Operational life</i>	The expected operational life of the initial infrastructure is 25-30 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 and belowground infrastructure.
<i>Construction traffic and timeframes</i>	• A total construction period of 9 months, including: - a peak traffic period of 5 months (up to 40 trucks and 88 other vehicles); and - a non-peak period of 4 months (up to 30 trucks and 44 light vehicles). • Construction hours would be limited to Monday to Friday 7 am - 6 pm, and Saturday 8 am - 1 pm.
<i>Hours of operation</i>	• The solar farm would operate during times when there is sunlight. • Daily operations and maintenance by site staff would be undertaken Monday to Friday 7 am - 6 pm, and Saturday 8 am - 1 pm.
<i>Employment</i>	90 full time equivalent construction jobs and one full time equivalent operational job.
<i>Capital investment value</i>	\$93.34 million

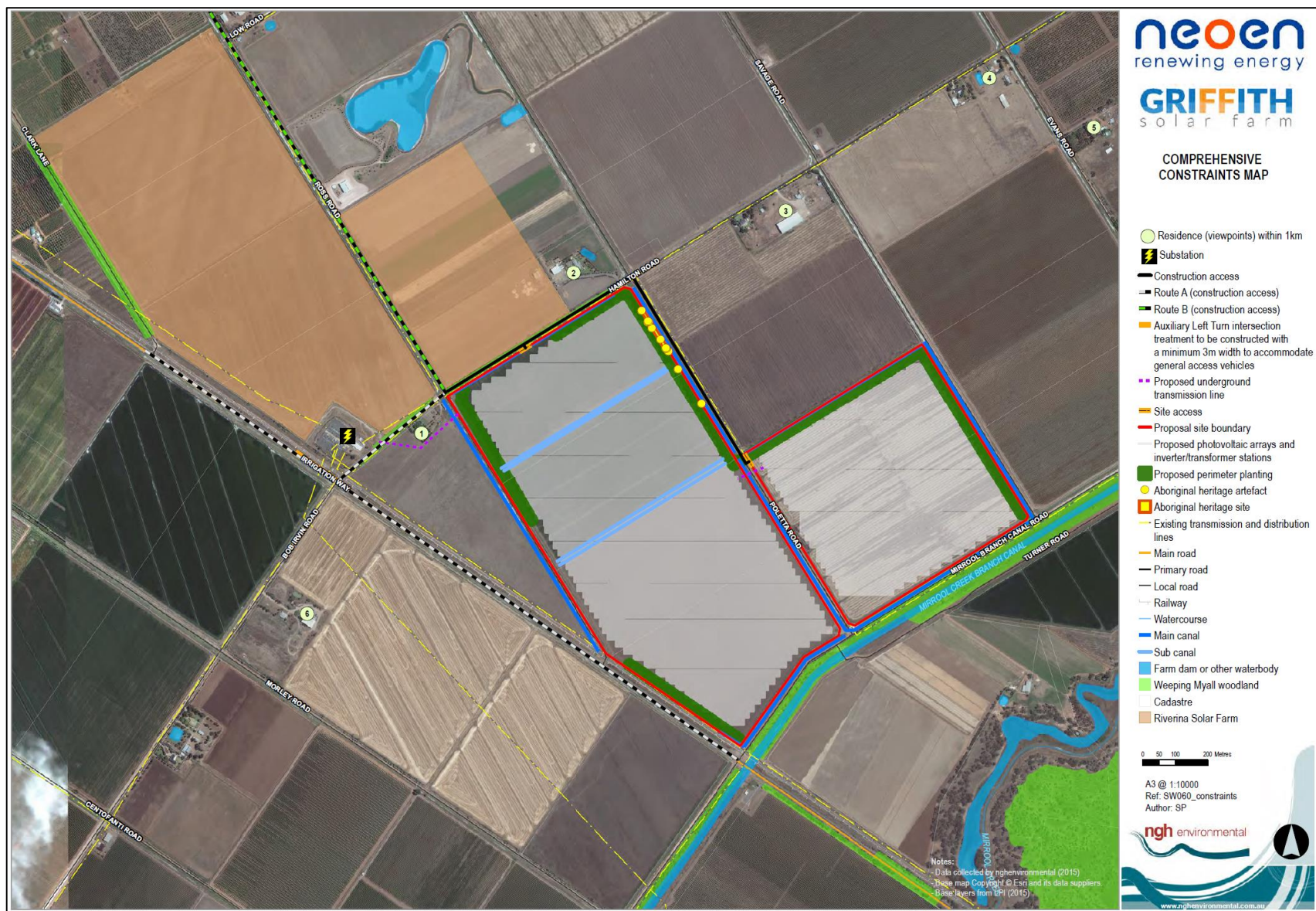


Figure 2: Project Constraints Plan

1.3 Relationship to proposed Riverina Solar Farm Project

The project would be adjacent to the proposed Riverina Solar Farm (SSD 7482), a new 30 MW solar farm on a 110 hectare site directly to the northwest of the site (see **Figure 2**).

As there is uncertainty around the timing of these projects, the Department has taken a conservative approach and assumed that both projects would be constructed and operated at the same time.

The cumulative worst-case traffic volumes for both projects would be during construction with 86 truck movements and 174 other vehicle movements a day. While there are two potential access routes for both projects, the Department considers the Irrigation Way/Hamilton Road route to be the best route (see **section 4.2**).

1.4 Strategic context

In 2014, NSW derived only 10.8% of its energy from renewable sources. The rest was derived from fossil fuels, including 82.3% from coal and 6.9% from gas.

Under the international Paris Agreement, Australia has committed to reducing 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.

The NSW Government has a *Renewable Energy Action Plan*, which promotes the development of renewable energy in NSW.

The Australian Renewable Energy Agency (ARENA) has been established by the Commonwealth Government to promote the development of renewable energy across Australia. ARENA is currently running a \$100 million funding competition for large-scale solar facilities. There are eight projects shortlisted in NSW. These projects would be able to generate up to 290 MW of solar power, and are worth around \$500 million. The Griffith Solar Farm is one of the eight shortlisted projects.

With an initial capacity of 60MW, the project would generate up to 116,000 MWh of electricity a year. This would power around 18,000 homes, and could save up to 111,000 tonnes of greenhouse gas emissions a year.

The Griffith Solar Farm Project 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 *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 no objections or political disclosure statements.

2.2 Environmental planning instruments

Under the *SEPP (Infrastructure) 2007*, the project is permissible as it is an electricity generating works in a rural zone.

In accordance with the Infrastructure SEPP, the Department has consulted with Transgrid, and confirmed that there is capacity to accommodate both the Griffith Solar Farm Project and the Riverina Solar Farm Project at the nearby sub-station.

SEPP No. 44 – *Koala Habitat Protection* does not apply as there is no koala habitat or koalas either on or in the vicinity of the site. SEPP No. 55 – *Remediation of Land* also does not apply as the site is not contaminated.

The consistency of the project with the provisions of the *Griffith Local Environmental Plan (LEP) 2014* is discussed in **section 4.1** of this report.

2.3 Other approvals

Under the *Roads Act 1993*, the project requires approvals from the Roads and Maritime Services (RMS) and Griffith City Council (Council) 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. They support the project subject to conditions, and these conditions have been incorporated into the proposed conditions of consent (see **section 4.2**).

3. CONSULTATION

On 3 March 2016, the Department inspected the project site with Council representatives.

The Department publicly exhibited the EIS from 18 March 2016 until 20 April 2016, and received seven submissions. Six of these submissions were from public authorities. None of the surrounding landowners made a submission.

There were no objections to the project.

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

Council and the other public authorities also support the project subject to conditions (see **section 4**).

The only public submission raised concerns about the potential “lake effect” of the solar panels: birds could mistake the panels for a lake and be injured or killed when they dive into the panels.

4. ASSESSMENT

The Department has undertaken a comprehensive assessment of the merits of the project. This report provides a detailed discussion of the three key issues below, and a summary of the conclusion of the findings on the other matters in **Table 2**.

4.1 Compatibility of proposed land use

Provisions of the Griffith LEP

The project site is located wholly within the RU1 Primary Production zone under the Griffith LEP.

The RU1 zone includes various land uses that are permitted with and without consent. As a solar farm is not expressly listed in either of these categories, it is a prohibited land use in the zone.

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

Firstly, the Griffith 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 the agricultural industries; and*
- *minimising fragmentation and alienation of resource lands.*

The project would help to diversify the agricultural uses in the area, and grazing would continue on the site once the solar farm is established. Further, it would provide a sustainable source of power for agricultural industries in the region, and could do this without comprising the integrity of the agricultural land it is located upon or sterilising any valuable resources.

Thirdly, the proposed solar farm would help Council meet its broader goals around sustainability, climate change and the future economic growth of the region. In particular, the project would contribute towards the key objectives of the *Growing Griffith 2030 Community Strategic Plan*, including improving sustainable land use, reducing greenhouse gas emissions, and attracting new value-adding industries.

Potential impacts on agricultural land

The site is located within the Murrumbidgee Irrigation Area, which covers an area of 660,000 hectares of irrigated land, and is one of the most productive agricultural regions in Australia.

The Griffith and Riverina solar farm projects cover a combined area of 235 hectares, and currently support various irrigated crops, including rice, wheat and corn. Given the relatively small size of the both sites, the combined loss of agricultural cropping land from the two projects would be negligible, and is not expected to adversely affect the agricultural productivity of the region.

Furthermore, the inherent agricultural capability of the land would not be affected by the projects due to the relatively low scale of the development. The land would be used for grazing during the operation of the projects and could be returned to agricultural uses after the projects are decommissioned.

Neither the Department of Primary Industries (DPI) – Agriculture nor Council are opposed to the proposed use of this land for solar farms.

The potential loss of a small area of cropping land in the Griffith region must be balanced against:

- the broader strategic goals of the Commonwealth and NSW governments for the development of renewable energy;
- 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.

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

In addition, the Department has recommended suitable conditions to maintain the productivity of the agricultural land while the solar farm is operating, and ensure the land is returned to agricultural use once the solar farm is decommissioned.

4.2 Traffic and transport

Access route selection

Both this project and the Riverina Solar Farm Project have proposed two access routes: the preferred option is via Irrigation Way and Hamilton Road, while the alternative option is via Burley Griffin Way and Ross Road (shown as 'Route A' and 'Route B' in **Figure 2**).

The Department, RMS and Council prefer the Irrigation Way and Hamilton Road route as:

- it is located between both sites and would provide the most direct access to these sites;
- it requires fewer road upgrades; and
- it would result in less traffic-related impacts to nearby landowners.

However, this option requires the Irrigation Way/Hamilton Road intersection to be upgraded, and this upgrade is dependent on the applicant being able to secure access to land within the existing rail easement for some of the intersection works. If it is unable to secure access to this land, then access to the site would need to be via the Burley Griffin Way and Ross Road route.

Traffic volumes

The main increase in traffic volumes would occur during the nine-month construction period, and would peak over a five month period. There would be similar increases in traffic if the solar farm is upgraded at some stage in the future or decommissioned. There would be negligible traffic during operation.

During construction, the traffic volumes of the project would peak at 40 truck movements and 88 other vehicle movements a day. However, the cumulative worst-case traffic volumes with the Riverina Solar Farm could be 86 truck movements and 174 other vehicle movements a day.

Road upgrades and site access

Both RMS and Council support the use of either access route, provided the required road upgrades are undertaken to support the increased traffic.

The Irrigation Way and Hamilton Road route would require:

- an upgrade of the Irrigation Way/Hamilton Road intersection to the satisfaction of the RMS and Council;
- an upgrade of the Hamilton Road/Poletta Road intersection to the satisfaction of Council; and
- paving of the currently unsealed Poletta Road and widening of the road to 8.4 m to allow two-way construction traffic to the satisfaction of Council.

As indicated earlier, if the applicants are unable to secure access to the railway land for the upgrade of the Irrigation Way/Hamilton Road intersection, then they would need to upgrade the Burley Griffin Way and Ross Road route.

This would include:

- an upgrade of the Burley Griffin Way/Ross Road intersection, including a Basic Right Turn – Short and Basic Left Turn treatment, to the satisfaction of the RMS and Council;
- paving and widening Ross Road to 8.4 m to allow two-way construction traffic (with the exception of the bridge located immediately south of Burley Griffin Way) to the satisfaction of Council; and
- paving of the currently unsealed Poletta Road and widening of the road to 8.4 m to allow two-way construction traffic to the satisfaction of Council.

The site entries would need to be upgraded to a rural property access standard to the satisfaction of Council.

Recommended traffic conditions

The Department has recommended conditions requiring the applicant to:

- access the site via Irrigation Way and Hamilton Road, unless it unable to secure access to the land in the railway corridor for some of the intersection upgrade works;
- undertake the relevant road upgrades prior to the commencement of construction;
- share the cost of the relevant road upgrades with the applicant of the Riverina Solar Farm Project, if both projects proceed;
- ensure the length of vehicles accessing the site does not exceed 19 metres;
- ensure the number of vehicles does not exceed:
 - 40 heavy vehicle movements a day during construction, upgrading or decommissioning; and
 - 20 heavy vehicle movements a day during operations; and
- prepare and implement a Traffic Management Plan 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 any significant impacts on the capacity, efficiency or safety of the road network.

4.3 Local contributions

In its submission, Council sought a development contribution of 1% of the proposed cost of carrying out the development under Section 94A of the *Environmental Planning and Assessment Act 1979* (EP&A Act).

This equates to around \$930,000 for this project.

The Department has examined the merits of this request, paying particular attention to project's demand for local infrastructure or services, or whether the project would use infrastructure that was paid for by Council and where Council is still recouping the costs associated with providing this infrastructure.

Apart from the road upgrades outlined above, which will be required as a condition of the development consent, the project will give rise to no new demand for local infrastructure and services. The applicant would also be required to repair any damage on the road network resulting from project-related traffic.

Based on this analysis, the Department can see no merit in imposing the levy on the project, as it would amount to a tax on the project for no clear public benefit, and it would add an unnecessary cost to the development of both the project and renewable energy in NSW.

4.4 Other issues

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

Table 2: Other issues

Issue	Consideration	Recommendations
Visual	- The project would be visible from six residences surrounding the site. One of these residences is associated with the project. - No submissions were received from any of the non-associated landowners. - The proposed solar farm is a relatively low-lying development with panel heights of 2.3-3.4 m. - The Department is satisfied that vegetation buffers along the perimeter of the site would provide an effective screen, and ensure there would be no significant visual impacts on surrounding non-associated residences, significant vistas or road users (see Figure 2).	- Establish vegetation buffers along sections of the perimeter of the project to minimise visual impacts. - Ensure that external lighting is minimised and complies with the relevant Australian Standards. - Prohibit advertising on the site, unless it is for safety purposes.
Noise	- The proposed construction activities would largely comply with the noise management levels in the <i>Interim Construction Noise Guideline</i> (ICNG). - There would be minor, short term exceedances of these management levels at two residences during certain construction and decommissioning activities, however these levels would still be below the maximum levels in the ICNG. - The one nearby residence on the western side of Irrigation Highway (which is currently unoccupied) would experience a minor increase in traffic-related noise during construction and decommissioning. - There would be negligible noise during operation. - The Department is satisfied that construction, upgrading and decommissioning noise can be minimised by implementing the noise mitigating work practices detailed in Tables 5 to 8 of the ICNG. These include scheduling activities to minimise noise, using quieter equipment, informing potentially affected neighbours and establishing a complaints handling procedure.	- Minimise the noise generated by any construction, upgrading or decommissioning activities by implementing the best practice noise management requirements outlined in the ICNG. - Restrict construction hours to Monday to Friday 7 am - 6 pm, and Saturday 8 am - 1 pm.
Biodiversity	- The project site is highly disturbed and has been largely cleared. There is no native vegetation within the site. - There would be no significant impacts on any threatened species or EECs. - There would be a limited amount of clearing of some highly disturbed Weeping Myall Woodland EEC located within the road reserve for site access. - However, both the Department and OEH are satisfied that this clearing would be offset by improvements to the extent and quality of the Weeping Myall Woodland EEC in the local area through perimeter planting	- Minimise clearing of the Weeping Myall Woodland EEC within the road reserve. - Use species that form part of the Weeping Myall Woodland EEC in the vegetation buffers. - Prepare a detailed Landscaping Plan for the site in consultation with OEH and Council.

Issue	Consideration	Recommendations
	The single community submission raised concern about the 'lake effect'. The Department is satisfied that the proposed solar panels would have a significantly lower level of reflectivity than water and it is unlikely birds would perceive the panels to be a waterbody.	
Water	- The project would require approximately 135 mega-litres (ML) of water during construction (primarily for dust suppression) and 3 ML of water a year during operation (primarily to wash the solar panels). - All of this water would be delivered to site by truck. - DPI Water raised no concerns about the proposed arrangements. - Two of the three irrigational channels that traverse the site would be removed. The irrigation channel adjacent to Poletta Road would remain intact in order to maintain flows across the site and to supply downstream users. - Any potential erosion and sedimentation risks associated with the project can be effectively managed using best practice construction techniques.	- Prohibit water pollution. - Undertake activities in accordance with OEH's <i>Managing Urban Stormwater: Soils and Construction</i> (Landcom, 2004) manual. - Limit post-development flows from the site to pre-development flows for all storms up to and including the 100 year ARI event. - Prepare a detailed Stormwater Plan for the site to the satisfaction of Council.
Heritage	- Eleven Aboriginal heritage items were identified within the site. They are located on bare ground between Poletta Road and adjacent irrigation channel. - The items have low to moderate significance due to the highly disturbed nature of the site. - The project would involve earthworks that would likely require the removal or displacement of all 11 items. - Given the highly disturbed nature of the project site, the Department, OEH and the Griffith LALC are satisfied that the project is unlikely to result in any significant impacts on the heritage values of the locality.	- Record, analyse and relocate all identified heritage items that would be disturbed by the development, in consultation with the Aboriginal stakeholders. - Cease works and notify OEH if human remains are identified over the life of the project.
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 standard fire management procedures. Fire & Rescue NSW asked for a detailed Emergency Response Plan to be prepared for the development outlining how these risks would be managed.	Prepare an Emergency Response Plan in consultation with the Rural Fire Service and Fire & Rescue NSW.

5. CONCLUSION

The Department has assessed the development application, the Environmental Impact Statement, the submissions, the applicant's Response to Submissions and additional information provided by the applicant and relevant government agencies (see **Appendices B, C, D and E**). 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 project site to be an appropriate site for a solar farm as it is very flat, has been largely cleared for irrigated cropping, and has good solar resources and access to the existing electricity network. Additionally, there are few landowners in close proximity to the proposed solar farm and none of the nearby landowners have objected to the project.

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

The Department has assessed the potential cumulative impacts of both this project and the Riverina Solar Farm Project on the basis that construction would occur concurrently and both projects would be operational at the same time. The Department is satisfied that there would not be any significant cumulative impacts from

the projects on the road network capacity, efficiency or safety, subject to the implementation of range of recommended traffic and transport conditions.

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 116,000 MWh of electricity a year, which would power about 18,000 homes and save up to 111,000 tonnes of greenhouse gas emissions. It is therefore consistent the NSW *Renewable Energy Action Plan*, and would make a valuable contribution towards meeting the Commonwealth's *Renewable Energy Target*.

The Department is satisfied that the project achieves a reasonable balance between maximising the the solar resource development potential of the site 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 Griffith Solar Farm; and
- signs the attached recommended conditions of consent (**Appendix A**).

 14/6/16

Elle Donnelly
A/Senior Planning Officer
Resource Assessments

 14/6/16

Clay Preshaw
A/Director
Resource Assessments

APPENDIX A:

RECOMMENDED CONDITIONS OF CONSENT

See website link at http://majorprojects.planning.nsw.gov.au/index.pl?action=view_job&job_id=6604

APPENDIX B:

Environmental Impact Statement

See website link at http://majorprojects.planning.nsw.gov.au/index.pl?action=view_job&job_id=6604

APPENDIX C:

Submissions

See website link at http://majorprojects.planning.nsw.gov.au/index.pl?action=view_job&job_id=6604

APPENDIX D:

Response to Submissions

See website link at http://majorprojects.planning.nsw.gov.au/index.pl?action=view_job&job_id=6604

APPENDIX E:

Additional Information

See website link at http://majorprojects.planning.nsw.gov.au/index.pl?action=view_job&job_id=6604