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Edify Energy Pty Ltd (the Applicant) proposes to develop a new 275 megawatt (MW) solar farm with 100 MW-hour of battery storage approximately 10 kilometres south of Darlington Point, in Murrumbidgee local government area.

Engagement

The Department publicly exhibited the Environmental Impact Statement for the project and received 12 submissions, all from Government agencies. There were no submissions from the general public. Murrumbidgee Council supports the project and none of the other Government agencies objected to the project.

Assessment

The key assessment issues for this project are land use compatibility, biodiversity and traffic impacts.

While the agricultural output from the site would be reduced by the project, the land represents a very small fraction of the agricultural output of the area. The project would result in a negligible reduction in the overall productivity of the region and the site is not located in an area of Biophysical Strategic Agricultural Land (BSAL). Additionally, the site could be returned to agricultural uses after the project is decommissioned and the inherent agricultural capability of the land would not be affected.

The Applicant has designed the project to minimise biodiversity impacts. The project would not affect any endangered ecological communities, however the project would impact on native grassland vegetation and a small amount of native woodland.

The Department accepts that a discounted offset liability for impacts on the native grassland vegetation is appropriate for this project, primarily based on the indirect impacts on the grassland in areas under and between solar panels, and that these impacts can only be determined following project development.

As such, the Department has set a minimum number of ecosystem credits for the Applicant to retire at this stage and has required the Applicant to undertake an assessment of the impacts on the native grassland following project development to determine the final biodiversity offset liaibility of the project. Overall, the Department considers that any residual impacts could be managed and offset through the recommended conditions of consent.

The potential traffic impacts would largely be short-term, relatively minor in nature and can be managed in accordance with Government policy. Nevertheless, the Department has recommended strict conditions requiring restricted construction hours, relevant road upgrades and a comprehensive Traffic Management Plan, including the use of a bus service for construction workers to minimise any traffic impacts.

Summary

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

The project is consistent with both the Commonwealth's *Renewable Energy Target* and NSW's *Climate Change Policy Framework* and *Renewable Energy Action Plan*, as it would contribute 275 MW of renewable energy to the National Electricity Market, including up to 100 MW-hour of dispatchable generation. The project would also provide flow-on benefits to the local community, including up to five full time construction jobs, with a capital investment of up to \$407 million.

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.



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1. Introduction

Edify Energy Pty Ltd (the Applicant) proposes to develop a new 275 megawatt (MW) solar farm with 100 MW-hour (MWh) of battery storage approximately 10 kilometres south of Darlington Point on Donald Ross Drive, in the Murrumbidgee local government area (see **Figure 1**).

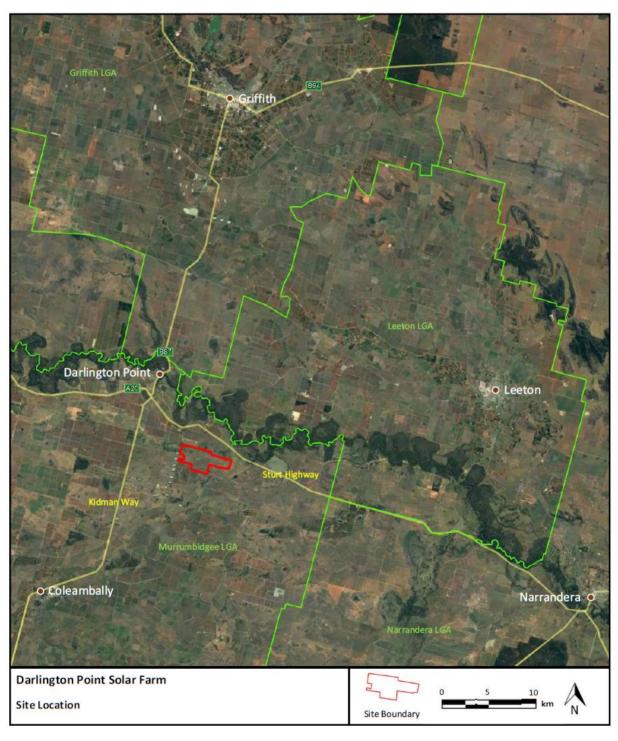


Figure 1 | Regional Context Map



The project involves the construction of a new solar farm with a generating capacity of approximately 275 MW and 100 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 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**), Response to Submissions (RTS) (see **Appendix F**), and additional information provided during the Department's assessment of the project (see **Appendix C**).

Table 1 | Main Components of the Project

Aspect	Description	
	The project includes:	
	• approximately 1,000,000 solar panels (up to 3 m high) and approximately 55 inverter stations (up to 4.5 m high);	
	• a lithium-ion battery storage facility within housing cubicles / containers (50 MW/100 MWh capacity);	
Project summary	• an on-site 132 kilovolt (kV) switchyard and overhead transmission line connecting to the adjacent TransGrid 132 kV Darlington Point substation;	
	 below ground cabling between the inverter stations; 	
	• a maintenance and storage building, car park, access tracks, fire breaks and security fencing; and	
	• subdivision of the project site to facilitate long term leasing of the land.	
Project area	1,042 ha (with a 710 ha development footprint)	
Access route	Over-dimensional and heavy vehicles would access the site via Donald Ross Drive, the Stu Highway and Kidman Way.	
Site entry and road upgrades	The site would be accessed at its existing entry point on Donald Ross Drive, which would require upgrading prior to commencement of construction.	
Operational life	• The expected operational life of the infrastructure is approximately 30 years. However, the project may involve infrastructure upgrades that could extend the operational life.	
Operational inc	• The project also includes decommissioning at the end of the project life, which would involve removing all infrastructure.	
Construction	The construction period would last for up to 18 months, and would include a peak period of up to 8 months.	
Construction	• Construction hours would be limited to Monday to Friday 7am to 6pm, and Saturday 8am to 1pm.	
	The project would operate during daylight hours.	
Hours of operation	• Daily operations and maintenance would be undertaken Monday to Friday 7am to 6 pm and Saturday 8am to 1pm.	
Employment	Up to 300 full time equivalent construction jobs, and 5 full time equivalent operational jobs.	
Capital investment value	\$407 million	

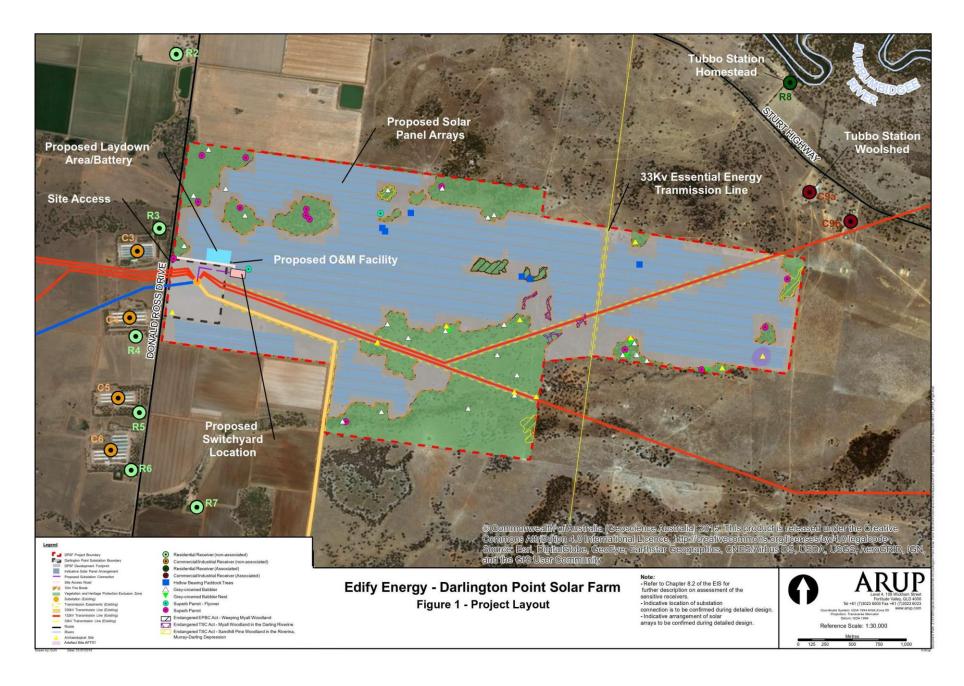


Figure 2 | Project Layout



3.1 Project setting

The project is located on a 1,042 hectare (ha) site that is zoned RU1 – Primary Production under the *Murrumbidgee Local Environment Plan (LEP) 2013* (Murrumbidgee LEP 2013). It is comprised of flat, open grasslands (with pockets of remnant vegetation) that has historically been cleared for agricultural grazing purposes.

The land surrounding the site is also zoned RU1 and is used for industrial and agricultural purposes. There are seven non-associated residences located within 2 km of the site boundary, and several poultry farms opposite the site on the western side of Donald Ross Drive (see **Figure 2**).

TransGrid's Darlington Point substation is located adjacent to the site's western boundary and there are several easements traversing the project site, including:

- a 330 kV overhead transmission line and two 132 kV overhead transmission lines (TransGrid); and
- a 33 kV overhead transmission line (Essential Energy).

The development footprint covers 710 ha within the site and is irregular in shape as it was designed to avoid the easements and minimise biodiversity and heritage impacts.

3.2 Other solar farms

The Riverina 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 70 km of the project (see **Table 2** and **Figure 3**).

Table 2 | Nearby solar farms

Project	MW capacity	Status	Distance from the project (km)
Coleambally	150	Operational	13
Yarrabee	900	Proposed	17
Yanco	60	Proposed	26
Griffith	27	Operational	35
Riverina	30	Under construction	36
Avonlie	200	Proposed	52
Sandigo	100	Approved	67

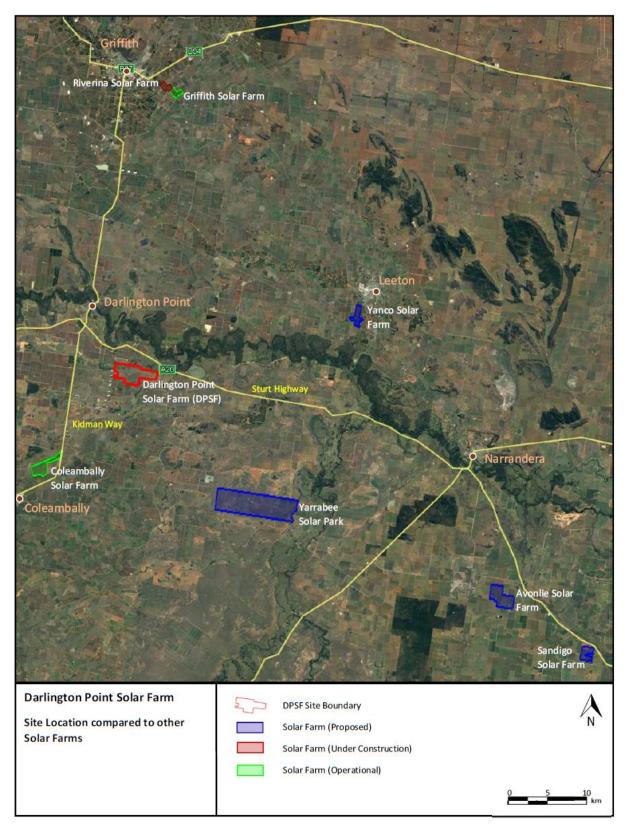


Figure 3 | Nearby solar farms

The key issue for cumulative impacts relates to workforce accommodation, which is discussed further in **section 6.4**. In this regard, the construction workforce for many of these projects would be sourced from the local and wider region, including neighbouring towns and local government areas.

Notwithstanding this, it is noted that three of these projects (Coleambally Solar, Griffith Solar and Riverina Solar) are either operational or currently under construction, meaning there would be no overlap in construction periods. In addition, Yanco Solar is at a preliminary stage with no application yet submitted to the Department, while Avonlie Solar (>50 km) and Sandigo Solar (>60 km) are located further from the project and closer to Wagga Wagga. As such, it is likely that cumulative impacts would be likely to occur if the project and Yarrabee Solar (17 km) are constructed simultaneously, and that these impacts would be constrained to traffic and workforce accommodation.

In this regard, the surrounding regional road network may experience an increase in traffic numbers, however the local roads surrounding the project would not experience cumulative traffic impacts, as the project would not share the use of local roads with other projects.

Given the number of solar projects in the area, the broader potential cumulative impacts on agricultural land in the region is also a key consideration, and is discussed further at **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 (the closest project being 13 km away).

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 ten 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 275 MW, the project would generate enough electricity to power up to 103,000 homes, and is therefore consistent with both the Commonwealth's *Renewable Energy Target* and NSW's *Renewable Energy Action Plan*.



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 (CIV) 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 application.

4.2 Permissibility

The site is located in the Murrumbidgee local government area and is on land zoned RU1 – Primary Production under the Murrumbidgee LEP 2013. As a solar farm is not expressly listed as permitted with or without consent, it is a prohibited land use under a strict reading of the LEP zoning table. The provisions of the Murrumbidgee LEP 2013 are discussed further in **section 6.1**.

Under the SEPP (Infrastructure) 2007 (Infrastructure SEPP), the project is permissible as it involves development for the purposes of electricity generating works.

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 H**).

The project was referred to the Commonwealth Department of Environment and Energy for assessment under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act), and it was confirmed that the project is not considered a 'controlled action'.

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 also given consideration to the relevant provisions of the environmental planning instruments in **Appendix D**.



5.1 Department's Engagement

The Department publicly exhibited the EIS from 22 May 2018 until 20 June 2018 (30 days) and advertised the exhibition in the Griffith Area News and The Narrandera Argus.

The Department inspected the site on 5 April 2017 and has consulted with the relevant Government agencies throughout the assessment process, including Council.

5.2 Submissions and Response to Submissions

During the exhibition, the Department received twelve submissions on the project, all from government agencies. Council supports the project and none of the other government agencies objected to the project.

No submissions were received from the public.

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**).

The Applicant has also provided additional information during the Department's assessment (see **Appendix C**). The additional information responded to agency requests, particularly regarding potential biodiversity impacts.

5.3 Key Issues – Government Agencies

Murrumbidgee Shire Council (Council) supports the development of the project, subject to conditions requiring:

- a safety fence be erected around the site;
- all above and below ground infrastructure be removed during decommissioning; and
- detailed plans to be submitted to Council for the proposed road upgrades.

These measures have been incorporated into the recommended conditions of consent.

The **Office of Environment and Heritage (OEH)** advised that it is appropriate to reduce the maximum biodiversity offset liability for this project. However, OEH's assessment predicted that the impacts of the project on native grassland vegetation would be higher than that predicted by the Applicant, particularly in relation to the different levels of shading, temperature and rainfall in areas under and between solar panels. These matters are discussed further at **section 6.2**.

The **Roads and Maritime Services (RMS)** recommended that all heavy vehicles access the site via the Sturt Highway and Donald Ross Drive and requested that the Applicant implement a bus service for construction

workers to minimise traffic impacts. The Department has recommended conditions of consent to address the requirements of RMS, while these matters are discussed further at **section 6.3**.

The **Department of Industry – Lands and Water (Dol – L&W)** recommended a Soil and Water Management Plan and Erosion and Sediment Control Plan should be developed prior to construction and decommissioning, and that all underground infrastructure be removed following decommissioning. These matters have been incorporated into the recommended conditions of consent.

NSW Rural Fire Service (RFS) and **Fire & Rescue NSW** recommended fire and emergency response plan conditions, which have been incorporated into the recommended conditions of consent.

The **Heritage Council of NSW (Heritage Council)** confirmed that no historic archaeology or items listed on the State Heritage Register are located within the site or the immediate vicinity and, as such, confirmed it has no comments on the project.

The **Division of Resources and Geoscience** confirmed it is satisfied the project would not sterilise any mineral resources.

The **Environment Protection Authority, Local Land Services** and **TransGrid** raised no concerns on the project and made no recommendations.



The Department has undertaken a comprehensive assessment of the merits of the project. This report provides a detailed discussion of the three key issues, being the compatibility of the proposed land use, biodiversity, and traffic and transport.

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 **section 6.4**.

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 Murrumbidgee LEP 2013

The site is located wholly within the RU1 Primary Production zone under the Murrumbidgee LEP 2013. The RU1 zone includes various land uses that are both permitted with and without consent. As a solar farm is not expressly listed as permitted with or without consent, it is 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 strategic documents, the Department considers that there is no clear intention to prevent the development of a solar farm on the project site.

Firstly, the Murrumbidgee LEP 2013 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;
- encouraging sustainable primary industry production by maintaining and enhancing the natural resource base; 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 be easily returned to agricultural land following decommissioning. Further, managed grazing may also occur during the operation of the solar farm. In addition, Council supports the development of the project, subject to the implementation of appropriate environmental mitigation measures.

Thirdly, the proposed solar farm is in line with Council's strategic objectives relating to sustainability and the guardianship of the local environment. Specifically, the project would improve energy efficiency and increase the use of alternative sustainable energy sources, which are both principles of the *Murrumbidgee Community Strategic Plan (2012)* and the draft *Murrumbidgee Council Community Strategic Plan 2017-2027* (draft Strategic Plan). In addition, the introduction of solar energy 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 and contribute to a resilient and vibrant agricultural sector, which is part of the vision of the draft Strategic Plan.

Finally, the project is consistent with the Department's *Riverina Murray Regional Plan 2036* which identifies the development of renewable energy generation as a priority growth sector for the region, and Council supports the development of the project, subject to the implementation of appropriate environmental mitigation measures.

Potential Impacts on Agricultural Land

The project site is located within the Riverina Murray region of NSW, which has a strong and diverse agricultural sector. Irrigation cropping and grazing are the most significant land uses in the region.

The development footprint covers a 710 ha area and currently supports grazing. The agricultural output from the site would be reduced by the development of the solar farm while the project remains operational.

The development footprint of the project combined with the operational Griffith Solar and Riverina Solar, and approved Coleambally Solar, projects would be 1,515 ha.

The loss of 1,515 ha of agricultural land represents a very small fraction (0.02 %) of the agricultural output of the Riverina Murray region and would result in a negligible reduction in the overall productivity of the region.

The Department also notes that neither Council nor Dol – L&W raised concerns that the operation of the project would compromise the long-term use of the land for agricultural purposes.

Furthermore, the inherent agricultural capability of the land would not be affected by the project due to the relatively low scale of the development, while the land would be returned to agricultural use following decommissioning.

The potential loss of a small area of cropping and grazing 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 maintain the productivity of the agricultural land during the construction and operation of the project and to fully reinstate the agricultural capability of the land following the decommissioning of the project.

6.2 Biodiversity

The site is dominated by plains grassland habitat that has historically been cleared for agricultural grazing purposes. Fragmented areas of grassy woodland and open forest also occur within the project boundary.

The EIS included a biodiversity assessment prepared in accordance with the NSW *Biodiversity Offset Policy for Major Projects* (the Offset Policy) and the supporting NSW *Framework for Biodiversity Assessment* (FBA).

Avoidance and Mitigation

The project has been designed to minimise clearing of native woodland vegetation and threatened species habitats. In this regard, the development footprint comprises only 710 ha of the 1,042 ha project area, primarily to minimise biodiversity impacts.

The Applicant has ensured the retention of:

- the majority of woodland and open forest vegetation of high importance; and
- threatened communities listed as endangered under the *Environment Protection and Biodiversity* Conservation Act 1999 (EPBC Act) and / or the *Biodiversity Conservation Act* 2016 (BC Act).

In addition, the Applicant is proposing a range of mitigation and management measures to address potential indirect impacts on threatened species and communities, including:

- land management, including selective mowing and grazing to manage out exotic species to promote native grasses;
- for under-panel microclimatic impacts, ensuring that the adaptive management plan is implemented for the management of the native grassland under the solar panels;
- minimising vehicle movements across the plains grasslands; and
- installing perimeter fencing, eradicating feral animals and undertaking ongoing weed and pest control.

While the Applicant has designed the project to minimise biodiversity impacts, the project would affect native grassland and woodland vegetation, as discussed below.

Flora impacts

Endangered Ecological Communities (EEC)

The project would not distub any EECs.

Two EECs were identified on the site during surveys, including:

- Weeping Myall Woodland (listed as endangered under the EPBC Act and BC Act); and
- Sandhill Pine Woodland (listed as endangered under the BC Act).

The Applicant has designed the project layout to avoid impacts on these EECs, and has committed to implementing measures during the construction, operation and decommissioning of the project to ensure any impacts are avoided. The Department and OEH accept that these EECs would not be affected by the project.

Plant Community Type (PCT) 45

The majority of the development footprint (i.e. 699 ha) contains native grassland (PCT 45).

The potential impacts of the project on PCT45 would be both direct and indirect. The direct impacts (approximately 40 ha) include access roads, parking and solar panel piles. The indirect impacts (approximately 660 ha) include areas under panels, between panel rows and areas not being used, which would experience different levels of shading, rainfall and temperature.

Under the FBA, the offset credit liability is calculated based on direct impacts. Based on this approach, the offset liability for impacts of the development on PCT45 equates to 25,061 ecosystem credits.

However, the Applicant states that this is unreasonable, and has instead assumed full liability for the direct impacts and a discounted liability for the indirect impacts. Based on these assumptions, the project would require 3,435 ecosystem credits for PCT45.

While OEH accepts the principle of using a discount rate to calculate the liability of the indirect impacts on PCT45, it has recommended the use of a lower discount rate than the Applicant. With this rate, the project would require 6,973 ecosystem credits for PCT45.

Due to the large difference in these estimates and uncertainty about what discount rate to apply, the Department sought advice from an independent ecologist from Umwelt.

Umwelt was asked to provide independent advice to the Department about the biodiversity impacts of the project, including on PCT45 (see **Appendix G**).

In undertaking its assessment, Umwelt considered all material submitted by the Applicant and advice provided by OEH. Umwelt also consulted closely with the Department, OEH, the Applicant and its ecologists to understand the approaches undertaken to calculate the offset liability of the project and to discuss the findings of the site visits undertaken by the Applicant and OEH.

Umwelt's report highlighted the difficulties in predicting the precise future impacts on PCT45, given the complexities surrounding the potential impacts in under-panel and between-panel areas, particularly in relation to different levels of shading, rainfall and temperature.

Overall, Umwelt's report concluded that the principle of using a discount rate to calculate the liability of the impacts on PCT45 is appropriate for this project. It found that the offset liabilities proposed by both the Applicant and OEH are reasonable and that the likely impacts on PCT45 would be within the range calculated by both parties.

However, importantly, Umwelt noted that the actual impacts on PCT45 would only be realised following project commissioning, and recommended that a portion of the credit obligation be deferred to the operational phase once an assessment of the impacts could be undertaken. Umwelt recommended that this assessment is undertaken two to three years following development of the project.

Following its consideration of the material provided by the Applicant, OEH and Umwelt, the Department accepts that using a discount rate to calculate the liability of the impacts on PCT45 is appropriate for this project and notes the difficulties associated with resolving uncertainty in the offset liabilities prior to development. However, the Department considers that the impacts on PCT45 would be in the range between the Applicant's and OEH's predictions, and that the impacts can only be determined once the project has been operating for at least two years.

Consequently, the Department has recommended the following approach to offsetting the impacts on PCT45:

- the Applicant's estimated ecosystem credits for PCT45 is to form the minimum offset liability (i.e. 3,435 credits);
- within two years from the commencement of construction, the Applicant must retire these credits;
- after the project has been operating for two years, the Applicant is to commission an independent expert to
 undertake a review and assessment of the impacts on PCT45, and submit a subsequent report to the
 Secretary;

- the Department would then review the report and seek advice from OEH, and may also seek independent advice; and
- following its review, the Department, on behalf of the Secretary, may set an additional credit liability up to a maximum of 6,973 credits for PCT45 (i.e. that calculated by OEH), which the Applicant would be required to retire within 12 months.

Importantly, this approach provides a significant incentive for the Applicant to avoid and minimise impacts on PCT45 during the detailed design, construction and operation of the project.

Other PCTs

In addition to PCT45, the Applicant would be required to retire credits for two other communities, PCT16 and PCT75. The Applicant and OEH calculated the same credit liability for these communities.

Table 3 provides a summary of the impacts of the project on each native vegetation type as calculated by both the Applicant and OEH.

Table 3 Native Vegetation Communities, Disturbance Area and Credit Liability

		Credit Liability	
Native Vegetation Community	Disturbance Area (ha)	Applicant	OEH
PCT 16: Black Box grassy open woodland wetland of rarely flooded depressions in south western NSW (mainly Riverina Bioregion and Murray Darling Depression Bioregion).	8.14	294	294
PCT 45: Plains Grass grassland on alluvial mainly clay soils in the Riverina Bioregion and NSW South Western Slopes Bioregion.	699.43	3,435	6,973
PCT 75: Yellow Box - White Cypress Pine grassy woodland on deep sandy-loam alluvial soils of the eastern Riverina Bioregion and western NSW South Western Slopes Bioregion.	0.16	7	7
Total	707.73	3,736	7,274

Fauna Impacts

Two threatened fauna species were recorded during field surveys, being:

- Superb Parrot (listed as vulnerable under the EPBC Act and BC Act); and
- Grey-crowned Babbler (listed as vulnerable under the BC Act).

The project would impact on 3.33 ha of woodland habitat for the Superb Parrot. The Applicant would be required to retire 60 species credits for the Superb Parrot.

The majority of Grey-crowned Babbler habitat would be retained, however the project would require the clearing of 8.30 ha of foraging, breeding and shading habitat for this species. As this habitat corresponds directly with PCT16 and PCT75 to be cleared for the project, the offsets for PCT16 and PCT75 would sufficiently offset this impact, and no additional species credit offsets would be required under the Offsets Policy.

Biodiversity Offsets

The offset requirements for the likely impacts on native vegetation communities is summarised in **Table 3**.

The Department notes that the Offsets Policy allows for the retirement of biodiversity offset credits to be achieved by a number of mechanisms (not just through land-based offsets), namely:

- acquiring or retiring 'biodiversity credits';
- making payments into an offset fund that has been developed by the NSW Government; or
- providing supplementary measures.

The offset credit requirements for the project must be retired using the abovementioned mechanisms.

Recommended Conditions

The Department considers that while the project would result in biodiversity impacts, particularly regarding PCT45, these impacts are able to be adequately managed, or compensated for, through a range of mitigation and offsetting measures. The Department has therefore recommended conditions requiring the Applicant to:

- minimise disturbance of EEC and threatened species, including the Swift Parrot;
- prepare and implement a detailed Biodiversity Management Plan; and
- retire the applicable biodiversity offset credits in accordance with the Offsets Policy.

With the retirement of the required biodiversity offset credits, the Department is satisfied that the project could be undertaken in a manner that improves or at least maintains the biodiversity values of the locality over the medium to long term.

6.3 Traffic and Transport

Traffic Volumes

During the peak construction period (up to 8 months) there would be up to 385 vehicle movements per day (300 light vehicles, 80 heavy vehicles and 5 over-dimensional vehicles).

During operations, there would be up to 10 heavy vehicle movements per day (primarily associated with water supply and waste removal) and an average of 5 light vehicle movements per day.

The Applicant may upgrade the battery storage facility and solar panels over the life of the development, however traffic volumes for these upgrades would be significantly less than the abovementioned construction traffic numbers.

Transport Routes and Site Access

All heavy and over-dimensional vehicle movements would be restricted to Donald Ross Drive, Sturt Highway and Kidman Way due to constraints at the intersection of Kidman Way and Ringwood Road (see **Figure 4**).

Light vehicles would access the site via either the Sturt Highway and Donald Ross Drive from the north, or Ringwood Road and Donald Ross Drive from the south.

The site would be accessed via an existing access point on Donald Ross Drive, approximately 3.5 km south of the Sturt Highway (see **Figure 2** and **Figure 4**).

Road Upgrades and Maintenance

An upgraded site access point onto Donald Ross Drive capable of catering for all construction, operational and decommissioning traffic (including over-dimensional vehicles) would need to be provided prior to the commencement of construction.

The Applicant is also required to undertake independent dilapidation surveys of the roads on the transport route before and after construction works, and repair any project-related damage, as requested by RMS and Council.

The Applicant has committed to implement a bus service to transport construction workers to the areas where the workers will reside to reduce the number of light vehicles utilising this intersection. As such, an upgrade of the Sturt Highway / Donald Ross Drive is not required. RMS supports this approach.

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.

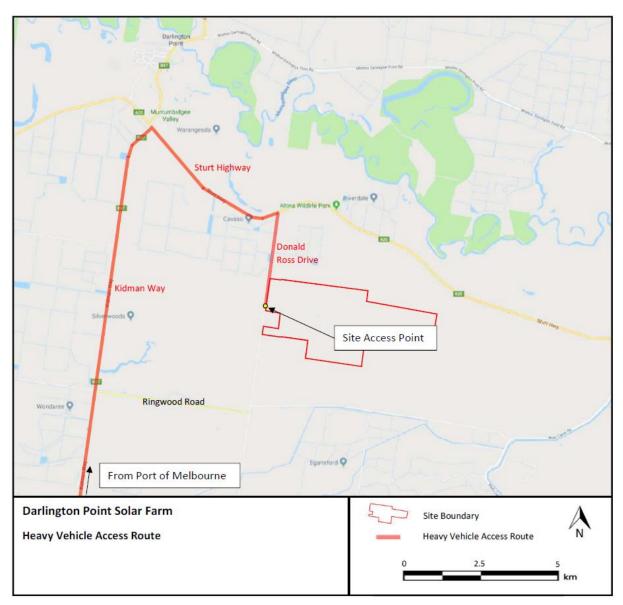


Figure 4 | Heavy vehicle route

6.4 Other Issues

The Department's consideration of other issues is summarised in **Table 4**.

Table 4 | Other Issues

Issue	Findings	Recommended Condition
Visual	 The solar panels would be relatively low lying (up to 3 m). The maintenance and storage building, site office and battery storage facility would stand at maximum heights of 6 m, 4.5 m and 3.3 m, respectively. These structures are considered a similar size to agricultural sheds commonly utilised in the local area. 	 Ensure that external lighting is minimised and complies with the relevant Australian Standards.
	 The relatively low height of the infrastructure would limit the visual impact from most viewpoints. In addition, it is noted that the maintenance and storage building, site office and battery storage facility would be located adjacent to the existing TransGrid substation, while several overhead transmission lines traverse the extent of the site. 	 Prohibit any signage or advertising on the development, unless for safety purposes.
	 Seven non-associated residential receivers (R1 – R7) are located within 2 km of the proposed development footprint (see Figure 2). Of these, four (R3, R4, R5 and R6) are workers' accommodation located on the poultry farms on the opposite side of Donald Ross Drive, the nearest of which (R3 and R4) are located 100 m from the site. The nearest private residence (R2) is located 790 m north of the site. Existing vegetation and topography would provide significant screening of the solar panels from these residences. As such, the Department considers that the visual impacts of the project on these residences would be low, 	
	 and mitigation in the form of visual screening is not 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 significant visual impacts on the surrounding residences or road users. 	
Noise	 The proposed construction, upgrading and decommissioning activities would be below the 'highly noise affected' criterion of 75 dB(A) in the EPA's Interim Construction Noise Guideline (ICNG). However, six non-associated receivers (i.e. R2, R3, R4, R5, R6 and R7) may be subject to noise impacts of up to 24 dB(A) above the 'noise affected' criterion of 45 dB(A) when construction activities (including the battery storage facility) are undertaken on site near the project boundary nearest to them. These exceedances would be short-term, limited to standard daytime construction hours and similar to noise generated by agricultural machinery such as tractors and harvesters. Construction noise would be minimised and managed by 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 - 6 pm, and Saturday 8 am - 1 pm.

Issue **Findings Recommended Condition** No specific conditions Workforce • Up to 300 personnel would be required during the construction of the required. accomodation project. The Applicant is proposing to source the workforce for the project from Prepare an the local and wider region including the surrounding local government Accommodation and areas. **Employment Strategy for** the project in As discussed at **section 3.2**, there are seven large-scale solar energy consultation with within 70 km of the project at various stages of the development process. Council. Of these, it is likely that the main potential cumulative impacts on construction workforce accomodation would occur if the project is constructed simulteaneously with Yarrabee 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, including Darlington Point, Coleambally and Griffith, which are within 50 km of the site. The assessment indicated there is likely to be sufficient accommodation available to house workers during the construction period, and Council has not expressed any concerns regarding workforce accommodation. To ensure there would be sufficient accommodation to house construction employees, the Applicant would be required to develop an Accommodation and Employment Strategy. Subdivide the proposed Subdivision The Applicant proposes to subdivide all lots on which the development lots, providing footprint is located (i.e. excise the development footprint from existing information is provided lots) to facilitate lease agreements with the land owners, with the in accordance with exception of the lot on which Transgrid's substation is located, which is not requirements of section subject to subdivision. 157 of the Environmental The proposed subdivision would result in 9 new lots. These lots would Planning and Assessment range in size from approximately 2 ha to 536 ha. Regulation 2000. 5 of the new lots would be prohibited under a strict reading of the Murrumbidgee LEP 2013 as they would not meet the minimum lot size for RU1 land (200 ha). Notwithstanding, under Section 4.38(3) of the EP&A Act, development consent for the project as a whole can be granted despite the subdivision component of the application being prohibited by the LEP. The Department is satisfied that the subdivision should be approved as: o it would permit existing agricultural land uses to continue on land that is not required for the development; o it would not result in the addition of any dwelling entitlements on the subdivided lots; and it is consistent with key objectives of the RU1 zone as it would encourage diversity in primary industry enterprises and minimise conflict between land uses. Further, Council has not objected to the proposed subdivision.

Issue **Findings Recommended Condition** Water and The project would require around 80 megalitres (ML) of water during Prohibit water pollution Erosion construction and decommissioning (mainly for dust suppression) and 15 in accordance with ML of water annually during operation. Section 120 of the Protection of the The Applicant is proposing to either source this water from on site dams, **Environment Operations** an on site bore or via trucks. Dol – I &W advised that it was satisfied there Act 1997. appears to be sufficient water supply to be trucked to site, however noted that the on site bore would need to be approved as a production bore for Undertake activities in industrial purposes prior to its use for the project. accordance with OEH's The project would have minimal impacts on groundwater resources. Managing Urban There are no mapped watercourses within the site, however the site is Stormwater: Soils and located within the floodplain of the Murrumbidgee River. The Department Construction (Landcom, notes that there is a risk of stormwater flooding on the site, potentially 2004) manual and resulting in localised inundation. Guidelines for The Department is satisfied that these measures would ensure stormwater Controlled Activities on flooding impacts are minimal. Waterfront Land (DPI Water). The Department is satisfied any erosion and sedimentation risk associated with the project can be effectively managed using best practice construction techniques. Heritage Site surveys identified 10 Aboriginal heritage items within the project site, Salvage Aboriginal comprising 6 culturally modified trees; 2 earth mound / hearth and heritage item (Tubbo modified tree; 1 earth mound / hearth; and 1 surface artefact scatter AFT 01) and transfer to (AFT01). the Griffith Local Aboriginal Land Council. The Applicant has designed the project to avoid all of these items except for the single surface artefact scatter (ARTO1), which has been identified as Cease works and notify having moderate significance. the NSW Police and The Applicant has committed to salvaging ARTO1 prior to construction OEH if human remains commencing, in agreement with the Griffith Local Aboriginal Land Council. are identified over the life Given the highly disturbed nature of the site, the likelihood of identifying of the project. unexpected items during construction is low. If Aboriginal artefacts or skeletal material are identified, all work would cease and the Chance Finds Prepare a Chance Finds Protocol would be implemented. Protocol. There are no known items of historic heritage value listed on the State Heritage Register and no historic archaeology within, or in the immediate vicinity of, the project site. Tubbo Station Group, listed as a heritage item with local significance in the non-statutory Register of the National Estate, comprises approximately 70% of the site. The Department notes that the Tubbo Station Group heritage listing comprises the Tubbo Station Homestead, Woolshed and other associated buildings – the nearest of which is located 700 m from the site boundary. OEH did not raise concerns regarding any impacts to the Tubbo Station The Department and OEH consider that the project is unlikely to result in a

significant impact on the heritage values of the locality.

Issue Findings Recommended Condition

Battery storage facility hazards

- In response to increasing demands for dispatchable energy, the Applicant is proposing an on-site lithium-ion battery storage facility, comprising approximately 14,400 lithium-ion cells, consisting of approximately 1000 individual cubicles or 30 containers. The type of battery storage system used would be selected during the detailed design phase.
- The proposed battery storage facility footprint would be approximately 2 ha and located adjacent to the TransGrid substation, approximately 100 m east of the site access point (see **Figure 2**).
- The preliminary risk screening included in the EIS was undertaken in accordance with SEPP No.33, while a Preliminary Hazard Assessment was also undertaken due to the proposed size of the battery.
- The assessment concluded that the implementation of control measures would minimise the potential risks of handling, storing and operating the batteries. These measures include (but are not limited to):
 - o a 20 m Asset Protection Zone (APZ) around the battery storage facility;
 - o automated monitoring and control systems, with alarm and shutdown capability:
 - appropriate separation between battery cubicles / containers;
 - o vegetation exclusion areas; and
 - o tank stored firefighting water storage in close proximity.
- The Department has carefully assessed the proposed battery storage facility in consultation with its internal hazards unit and relevant government agencies. The Department notes that the facility would be located away from residences and environmentally sensitive landscapes.
- Subject to the recommended conditions, the Department is satisfied that risks associated with the facility would be minimal.

- Prepare 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', and describe
 the final design of any
 energy storage plant or
 equipment.
- Prepare an Emergency Plan in conjunction with the Department's Hazardous Industry Advisory Paper No. 1.

Other hazards

- The project would comply with the National Health and Medical Research Council standards for electric and magnetic fields.
- The site is not mapped as bushfire prone land.
- Following a request by RFS, the Applicant has committed to managing the
 entire site as an Asset Protection Zone, preparing a bushfire management
 plan to manage fire risk, and has revised the project to include a 10 m APZ
 around project infrastructure.
- The Department considers that the bushfire risks can be suitably controlled through the implementation of standard fire management procedures.
- Ensure that the development complies with the relevant asset protection requirements in RFS's Planning for Bush Fire Protection 2006.
- Prepare an Emergency
 Plan in consultation with
 RFS and Fire & Rescue
 NSW.



The Department has assessed the development application, EIS, submissions, Response to Submissions, independent biodiversity expert advice, 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 (see **Appendix D**).

The Department considers the site to be appropriate for a solar farm as it has good solar resources and there is available capacity on the existing electricity network.

The project has been designed to largely avoid key constraints, particularly in relation to biodiversity and heritage. The Department acknowledges that the project would impact on threatened species habitat, however following extensive consultation with agencies and considering advice from the independent expert, it is considered that any residual impacts would be managed or offset 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 be easily returned 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 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 low emissions sources. It would generate approximately 607,000 MWh of clean electricity annually, which is enough to power up to 103,000 homes and save up to 583,000 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 100 MWh energy 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 300 full time construction jobs, with a capital investment of up to \$407 million.

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



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

- considers the findings and recommendations of this report;
- **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 Darlington Point Solar Farm (SSD 8392);
- signs the attached development consent and recommended conditions of consent (see Appendix H).

Recommended by:

Dei 23/11/18

Senior Environmental Assessment Officer Resource and Energy Assessments Recommended by:

Clay Preshaw

Director

Resource and Energy Assessments



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

David Kitto

Executive Director

Resource Assessments and Business Systems



Appendix A – List of Documents

Darlington Point Solar Farm Environmental Impact Statement, Arup, 2018.

Darlington Point Solar Farm Response to Submissions Report, Arup, 2018.

Additional Information Report, Edify Energy, 2018.

Independent Peer Review (Biodiversity), Umwelt, 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=8392

Appendix C – Additional Information

See the Department's website at:

http://www.majorprojects.planning.nsw.gov.au/index.pl?action=view_job&job_id=8392

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;
- 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 6.2** 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. The Department considers the project would not significantly impact the built or cultural heritage of the locality. The Department is 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 Murrumbidgee 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. TransGrid has provided landowner's consent for the development application and connection into its Darlington Point 132 kV substation.
	The Applicant completed a Preliminary Hazard Analysis for the battery storage facility, in accordance with <i>SEPP No. 33 – Hazardous and Offensive Development</i> (SEPP No. 33). The Department's consideration of this analysis is discussed in section 6.5 .
	SEPP No. 44 – Koala Habitat Protection does not apply to land within the Murrumbidgee LGA.
	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=8392

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=8392

Appendix G – Independent Peer Review (Biodiversity)

See the Department's website at:

http://www.majorprojects.planning.nsw.gov.au/index.pl?action=view_job&job_id=8392

Appendix H – Recommended Conditions of Consent

See the Department's website at:

http://www.majorprojects.planning.nsw.gov.au/index.pl?action=view_job&job_id=8392