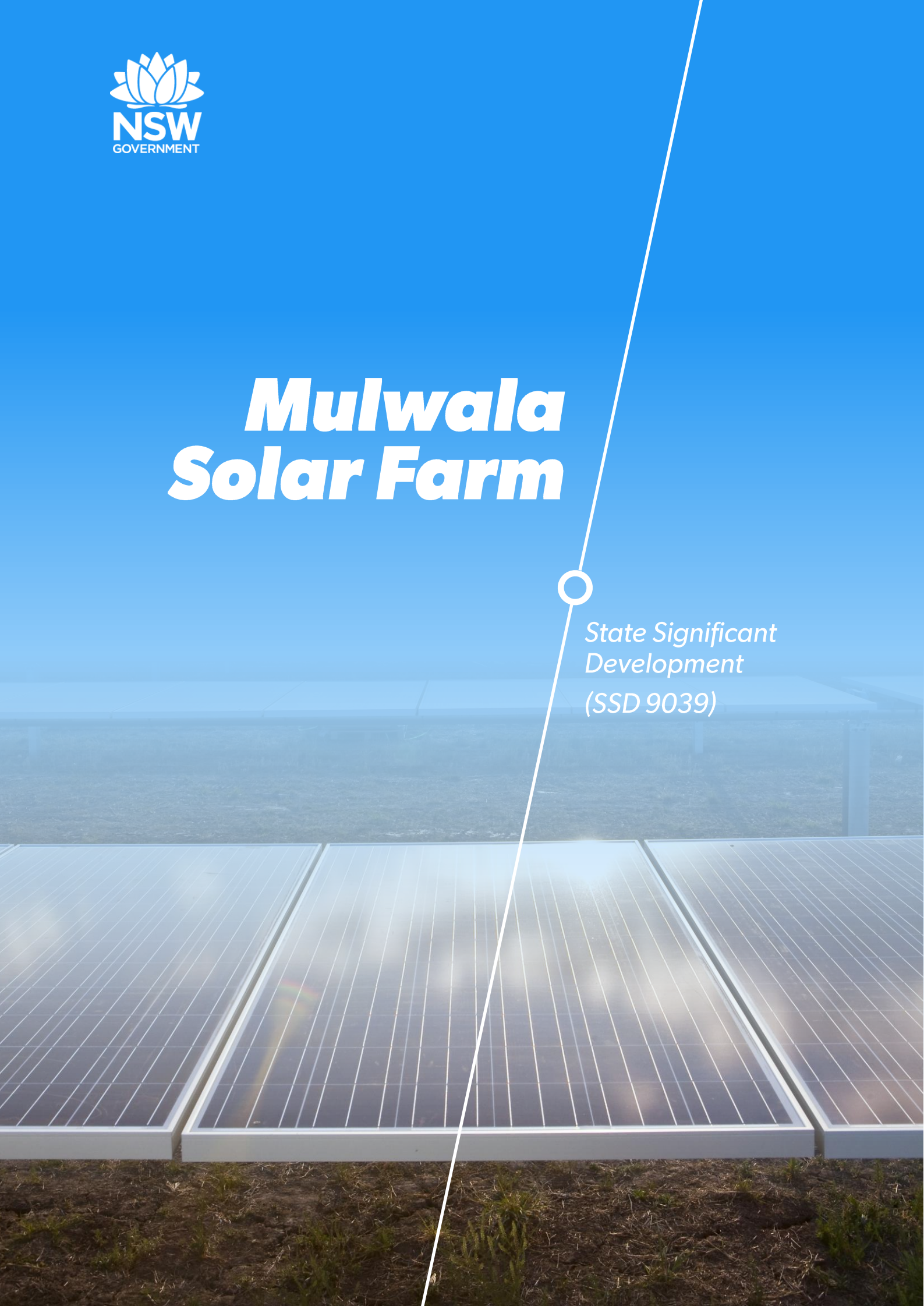
NSW GOVERNMENT

Mulwala Solar Farm

State Significant Development

(SSD 9039)



December 2018

Cover photo

Source: Moree Solar Farm, the Department of Planning and Environment Image Database (https://images.planning.nsw.gov.au)

Executive Summary

ESCO Pacific Pty LTD (the Applicant) proposes to develop a new 80 megawatt (MW) solar farm and 20 MW/40 MW-hour (MWh) of battery storage near Mulwala in southwest NSW.

Engagement

The Department exhibited the Environmental Impact Statement for the project from 5 July 2018 to 1 August 2018 and received 14 submissions, including 12 from Government agencies, one from a special interest group and one from the general public.

Federation Council supports the project and none of the other Government agencies objected to the project. The submissions from the special interest group and member of the public both objected to the project.

Assessment

The two key issues considered in the Department's assessment are land use compatibility and potential visual impacts.

Both submissions objecting to the project raised concerns about land use compatibility. The development footprint is 215 ha and is located on land zoned RU1 – Primary Industry and R2 – Low Density Residential. The use of agricultural land would not significantly reduce the overall agricultural productivity of the region and the site could be returned to agricultural uses in the future. Council supports the project on agricultural and residential zoned land and advised that there is sufficient supply of residential land elsewhere in Mulwala for future expansion. In addition, Council advised that the future growth of the town would likely be in a north-easterly direction along Lake Mulwala away from the project site.

While the Applicant has designed the project to minimise visual impacts, portions of the project would be visible to surrounding residences. However, the level of potential visual impacts is relatively minor at most surrounding residences due to intervening vegetation and/or distance. The Department considers that subject to the implementation of visual impact mitigation measures, including vegetation screening, there would be no significant visual impacts on the surrounding residences.

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 *Climate Change Policy Framework* and *Renewable Energy Action* Plan as it would contribute 80 MW of renewable energy to the National Electricity Market. The project also includes 40 MWh of energy storage that would enable the project to store solar energy for dispatch to the grid, which would contribute to increased grid stability and energy security.

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

ESCO Pacific Pty LTD (the Applicant) proposes to develop a new 80 megawatt (MW) solar farm and 20 MW/40 MW-hour (MWh) of battery storage (the project) approximately 1.2 kilometres (km) northwest of Mulwala, in the Federation local government area (LGA) (see **Figure 1**). The township of Mulwala is located along the foreshores of Lake Mulwala, approximately 4 km north of the Murray River and the Victorian township of Yarrawonga.

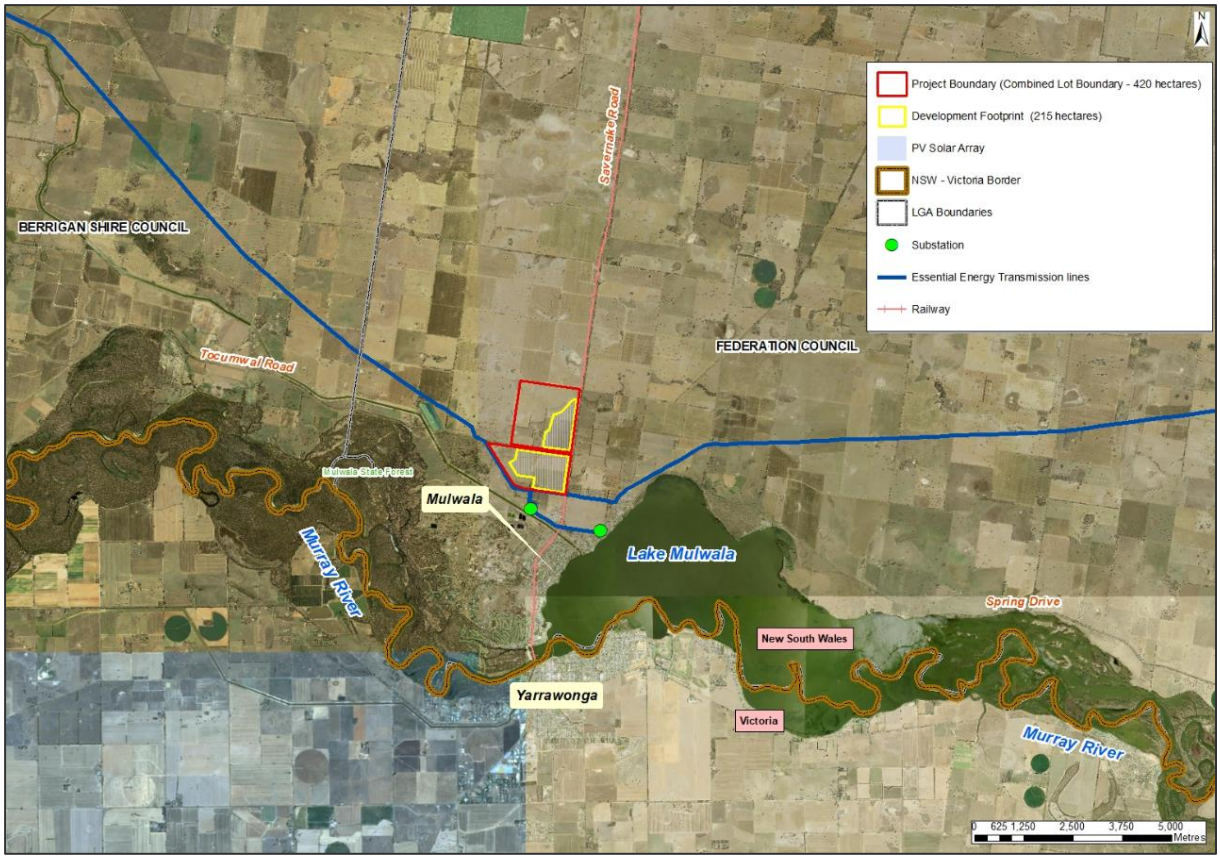


Figure 1 | Regional Context

2. Project

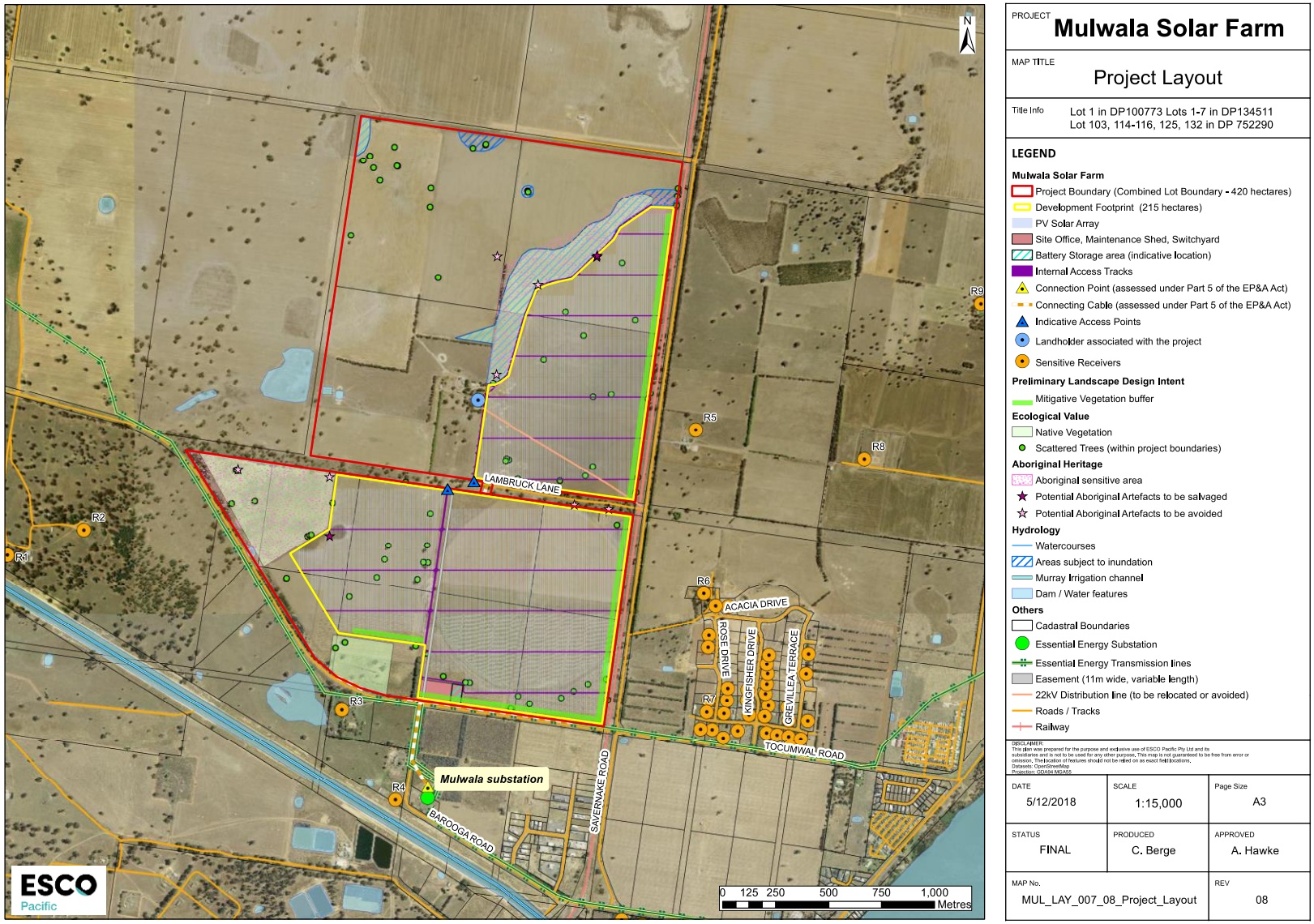
The project involves the construction of a new solar farm with a generating capacity of approximately 80 MW and 20 MW/40 MWh of battery storage. It also involves the upgrading and decommissioning of infrastructure and equipment in the future. While the capacity of the project may increase over time as technology improves, the footprint of the development would not increase.

The solar farm would be connected to Essential Energy's 132 kV Mulwala Substation by a new underground or overhead cable. This aspect of the project will be assessed and determined by Essential Energy under Part 5 of the *Environmental Planning and Assessment Act 1979* (EP&A Act).

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**).

Table 1 | Main Components of the Project

Aspect	Description
Project summary	The project includes: • approximately 300,000 single axis tracking solar panels (up to 4 m in height) and 20 power conversion units (up to 2 m in height) connected by above and/or below ground cabling; • an on-site substation and a lithium-ion battery storage facility within housing containers; • internal access tracks, car park, maintenance building, site office and security fencing; and • subdivision for the project site.
Project area	420 ha (with a 215 ha development footprint)
Access route	Over-dimensional and heavy vehicles would access the site via Lambruck Lane, Savernake Road, Tocumwal Road and either Melbourne Road or Corowa Road/Spring Drive.
Site entry and road upgrades	• All project related vehicles would enter the site via two existing access points on Savernake Road. • Road upgrades include upgrading the Savernake Road and Lambruck Lane intersection, Lambruck Lane between Savernake Road and the Benalla - Oaklands railway crossing and the site entry points.
Operational life	• The expected operational life of the infrastructure is approximately 40 years. However, the project may involve infrastructure upgrades that could extend the operational life. • The project also includes decommissioning at the end of the project life, which would involve removing all above ground infrastructure.
Construction	• The construction period would last for up to eight 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 undertaken Monday to Friday 7am to 6 pm and Saturday 8am to 1pm.
Employment	Up to 130 full time equivalent construction jobs, and 4 full time equivalent operational jobs.
Capital investment value	$119 million



PROJECT
Mulwala Solar Farm

MAP TITLE
Project Layout

Title Info: Lot 1 in DP100773 Lots 1-7 in DP134511
Lot 103, 114-116, 125, 132 in DP 752290

LEGEND

Mulwala Solar Farm
- Project Boundary (Combined Lot Boundary - 420 hectares)
- Development Footprint (215 hectares)
- PV Solar Array
- Site Office, Maintenance Shed, Switchyard
- Battery Storage area (indicative location)
- Internal Access Tracks
- Connection Point (assessed under Part 5 of the EP&A Act)
- Connecting Cable (assessed under Part 5 of the EP&A Act)
- Indicative Access Points
- Landholder associated with the project
- Sensitive Receivers

Preliminary Landscape Design Intent
- Mitigative Vegetation buffer

Ecological Value
- Native Vegetation
- Scattered Trees (within project boundaries)

Aboriginal Heritage
- Aboriginal sensitive area
- Potential Aboriginal Artefacts to be salvaged
- Potential Aboriginal Artefacts to be avoided

Hydrology
- Watercourses
- Areas subject to inundation
- Murray Irrigation channel
- Dam / Water features

Others
- Cadastral Boundaries
- Essential Energy Substation
- Essential Energy Transmission lines
- Easement (11m wide, variable length)
- 22kV Distribution line (to be relocated or avoided)
- Roads / Tracks
- Railway

DISCLAIMER
This plan was prepared for the purpose and exclusive use of ESCO Pacific Pty Ltd and its subsidiaries and is not to be used for any other purpose. This map is not guaranteed to be free from error or omission. The location of features should not be relied on as exact field locations.
Datasets: OpenStreetMap
Projection: GDA94 MGA55

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Figure 2 | Project Layout

3. Strategic Context

3.1 Site and Surrounds

The project is located on a 420 hectare (ha) site that is comprised of flat land that has historically been cleared for agricultural purposes, including grazing and cropping. The site is zoned RU1 – Primary Production and R2 – Low Density Residential under the *Corowa Local Environment Plan (LEP) 2012* (Corowa LEP).

The proposed development footprint within the site is 215 ha and was designed to avoid impacts on land subject to localised flooding and to minimise visual impacts and impacts on native vegetation and Aboriginal heritage.

The site is surrounded by a mix of land uses to the south, west and north, including industrial, agricultural and special uses, while residential development is confined to the east of the site beyond the Benalla to Oaklands railway line and Savernake Road.

Tocumal Way forms the southern boundary of the site, beyond which is the Mulwala Business Park. The Mulwala substation, owned by Essential Energy, is located approximately 500 metres (m) south of the site and Essential Energy's 132 kV transmission line runs along the site's southwestern boundary (see **Figure 2**).

The Mulwala Explosives Factory, owned by the Department of Defence, is located southwest of the site.

Agricultural land, primarily used for grazing and cropping, is located to the west and north of the site.

The site's eastern boundary is delineated by the Benalla to Oaklands railway line and Savernake Road, beyond which is a mix of residential and agricultural land uses.

Immediately to the east of the site, beyond the railway and Savernake Road, there is a residential subdivision comprising 224 lots, extending between 100 m and 1.3 km from the site boundary. This is a staged development, of which 25 dwellings have been completed to date.

There are an additional 6 'non-associated' rural residences located within 1 km of the project site, with the two closest dwellings located 220 m and 270 m east and south of the development footprint respectively.

3.2 Renewable Energy in NSW

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 seven major operational projects, including the largest solar farm in Australia, and an additional six under construction.

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 identified energy zones are aimed at encouraging *"investment in new electricity infrastructure and unlocking additional generation capacity in order to ensure secure and reliable energy in NSW"*.

The project would not be located within any of the three priority energy zones. However, with a capacity of 80 MW, the project would generate enough electricity to power up to 30,000 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 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

Under *State Environmental Planning Policy (Infrastructure) 2007* (Infrastructure SEPP), electricity works are permissible on any land in a prescribed rural, industrial or special use zone. Consequently, the Infrastructure SEPP makes the project permissible with consent on the land zoned RU1 (see **Figure 3**).

However, the Infrastructure SEPP only allows small scale solar energy development (i.e. less than 100 kilovolts) in residential zones. Consequently, the project is prohibited on the land zoned R2 (see **Figure 3**).

Under Section 4.38(3) of the EP&A Act, a consent authority may approve a State significant development project provided it is not wholly prohibited. Because most of the project is located on land zoned RU1 where the project is permissible with consent, the consent authority may determine the application for the project even though it is prohibited on the land zoned R2.

4.3 Infrastructure SEPP Notice

In accordance with the Infrastructure SEPP, the Department has given written notice of the project to Essential Energy as the electricity supply authority for the area and the Australian Rail and Track Corporation (ARTC) as the project would increase the number of vehicles crossing the Benalla to Oaklands railway. Essential Energy and ARTC raised no concerns about the project.

4.4 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*).

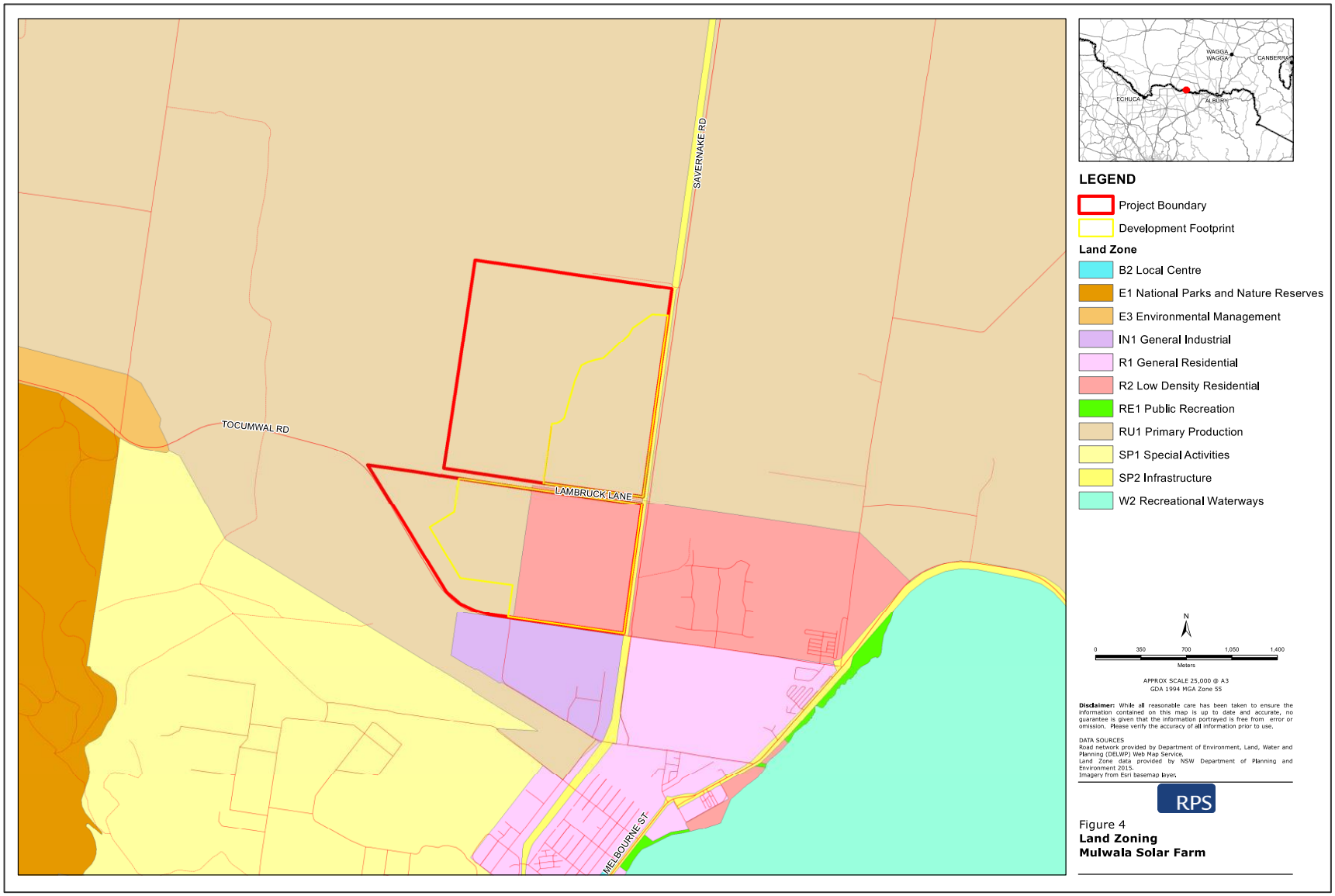

Figure 3 | Zoning

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 F**).

4.5 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 considered relevant provisions of the environmental planning instruments in **Appendix C**.

5. Engagement

5.1 Department's Engagement

The Department publicly exhibited the EIS from 5 July 2018 until 1 August 2018 (28 days), and advertised the exhibition in the Corowa Free Press and the Yarrawonga Chronicle. The Department also notified Federation Council (Council), relevant government agencies and landowners adjoining the project boundary.

The Department inspected the site on 19 November 2018 and has consulted with Council and the relevant Government agencies throughout the assessment process.

5.2 Submissions and Response to Submissions

During the exhibition of the EIS, the Department received 14 submissions, including:

- advice from twelve government agencies (all comments);
- one from the general public (objecting); and
- one from a special interest group (objecting).

Full copies of the submissions are attached in **Appendix D**. The Applicant provided a response to all matters raised in submissions on the project (see **Appendix E**).

5.3 Key Issues – Government Agencies

Federation Council advised that the EIS addressed all matters raised by Council in the Secretary's Environmental Assessment Requirement's for the project. Council raised no concerns about the project and made no recommendations.

The **Office of Environment and Heritage** (OEH) confirmed that the biodiversity and Aboriginal cultural heritage assessments were undertaken in accordance with the relevant guidelines, and that the Applicant had sufficiently addressed concerns regarding flooding. OEH recommended a number of standard conditions, including the

requirement to retire biodiversity credits, prepare a Biodiversity Management Plan and implement a chance finds protocol. The Department has included these requirements in the recommended conditions.

The **Roads and Maritime Services** (RMS) requested that the Applicant establish vegetation buffers to minimise views of the solar farm from the public road network and raised concerns about the proposed access driveway off Tocumwal Road. The Applicant has revised the proposed landscape plan to include buffers adjacent to Tocumwal Road and Savernake Road, and removed the Tocumwal Road access point.

The **Department of Industry – Lands and Water** (DoI - L&W) requested additional information about water supply and nuisance flooding and recommended that the Applicant prepare an erosion and sediment control plan, design fencing to minimise impacts on nuisance flooding and manage potential impacts on groundwater. The Applicant addressed DoI - L&W's concerns in the Response to Submissions, and the Department has incorporated DoI – L&W's comments into the recommended conditions.

The **Heritage Council of NSW** confirmed that there are no State Heritage Register items within or surrounding the site, but noted that the Mulwala Station Homestead (a locally listed site) is located in close proximity to the site. The Department has considered potential impacts on the Homestead in **section 6.3**.

The **Department of Defence** confirmed that it has no objections about the location of the proposed solar farm in relation to the Mulwala Explosive Facility, which is a Major Hazard Facility under the *Work Health and Safety Act 2011*.

The **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 **Division of Resources and Geoscience** (DRG) raised no concerns and confirmed it is satisfied that the project would not sterilise any mineral resources.

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

5.4 Key Issues – Community

The community submission objecting to the project was from a resident of Mulwala. The key issues raised in this submission related to land use compatibility. This matter is addressed in **section 6.1** of this report.

5.5 Key Issues – Special Interest Groups

The special interest group submission objecting to the project was from the **Peter Thomas Family Trust,** which owns land located approximately 1.7 km east of the site. The submission raised concerns about land use compatibility, the proximity of the site to Mulwala township and potential visual impacts. The submission also raised concerns that the government is funding the project. The Applicant addressed these matters in its RTS. The Department notes that the NSW Government has no part in funding the proposed project and has considered the remainder of these concerns throughout **section 6** of this report.

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 raised in submissions, namely the compatibility of the proposed land use and potential visual impacts.

The Department has also considered the full range of potential impacts associated with the project and has included a summary of the conclusions of this assessment in **section 6.3**.

A list of the key documents that informed the Department's assessment is provided in **Appendix A**.

6.1 Compatibility of Proposed Land Use

Existing residential development in Mulwala is typically located in a linear form along Lake Mulwala, between the Benalla to Oaklands railway line to the west and Lake Mulwala to the east (see **Figure 4**).

Land to the west of the railway is generally characterised by a mix of industrial, agricultural and special uses, including the Mulwala Explosives Factory and the Mulwala Business Park.

As such, there is a clear delineation between residential land uses to the east of the railway along Lake Mulwala and a mix of uses to the west.

The project site, located to the west of the railway and directly north of the Mulwala Business Park, would form a natural continuation of the mix of land uses on this side of the railway.

Despite this, the project is located on land zoned partly RU1 - Primary Production and R2 – Low Density Residential in the Corowa LEP (see **Figure 3**), and the two submissions objecting to the project raised concerns about land use compatibility.

Potential impacts on agricultural land

Provisions of the Corowa LEP - RU1 (Primary Production) land

The majority of the site (approximately 75%) is zoned RU1. The RU1 zone includes various land uses that are 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 is satisfied that there is no clear intention to prevent the development of a solar farm on the project site.

Firstly, the Corowa 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 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
- minimising fragmentation and alienation of resource lands.

While the Federation local government area 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 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, approximately half of the site (~200 ha) would continue to be used for agricultural purposes, and managed grazing may occur beneath the solar panels during operations.

Agricultural output of the region

The project site is located in the Southern Riverina region of southwestern NSW where agriculture, forestry and fishing are the major economic industries. The site is currently used for grazing and cropping. However, it is mapped as having Class 3 and Class 5 land and soil capability (60% Class 3 and 40% Class 5), and is not mapped as Biophysical Strategic Agricultural Land.

The Department notes that approximately 570,000 ha of land in the Federation local government area is used for agricultural purposes. The agricultural output from the site would be reduced by the development of the solar farm, however the land area to be taken up by the solar farm represents a very small fraction (0.037%) of the agricultural output of the LGA.

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 site covers an area of 420 ha, the proposed development footprint covers an area of only 215 ha and the remaining land would continue to be used by the land owner for agricultural purposes. Managed grazing may be used to maintain the ground cover during operations and the land would be returned to agricultural use following decommissioning.

Neither DoI L&W nor Council has raised concerns that the operation of the project would compromise the long-term use of the land for agricultural purposes.

Potential impacts on residential land

Site suitability and provisions of the Corowa LEP – R2 (Low Density Residential) land

Approximately 25% (86 ha) of the site is located on land zoned R2 and the Applicant is proposing solar panels in this portion of the site. Both the LEP and the Infrastructure SEPP prohibit large-scale solar farms on land zoned R2.

While the consent authority has the power to override a partial prohibition (under Section 4.38(3) of the EP&A Act), it must carefully assess the merits of such a decision, including considering the views of Council and the public interest.

Council supports the project and advised that is has no concerns with the project being located on residential zoned land. Council also noted that there is ample supply of residential land elsewhere in Mulwala, including that the land zoned R1 - General Residential and R2 – Low Density Residential to the southeast and east of the site have available capacity for continued growth. In addition, Council advised that the future growth of the town would likely be in a north-easterly direction along Lake Mulwala.

The submissions objecting to the project both cited the use of residential land as a key concern, with one submission stating that the project would limit the availability of land suitable for residential development.

In this regard, the Department notes that Mulwala has experienced a low rate of population growth between 2012 and 2018, with an increase of approximately 1% (from 2,129 to 2,151 people) and, as discussed above, notes that Council has advised there is available capacity for continued residential growth elsewhere in Mulwala. Meeting the needs of a growing population through the provision of additional housing is therefore not considered to be major issue in Mulwala.

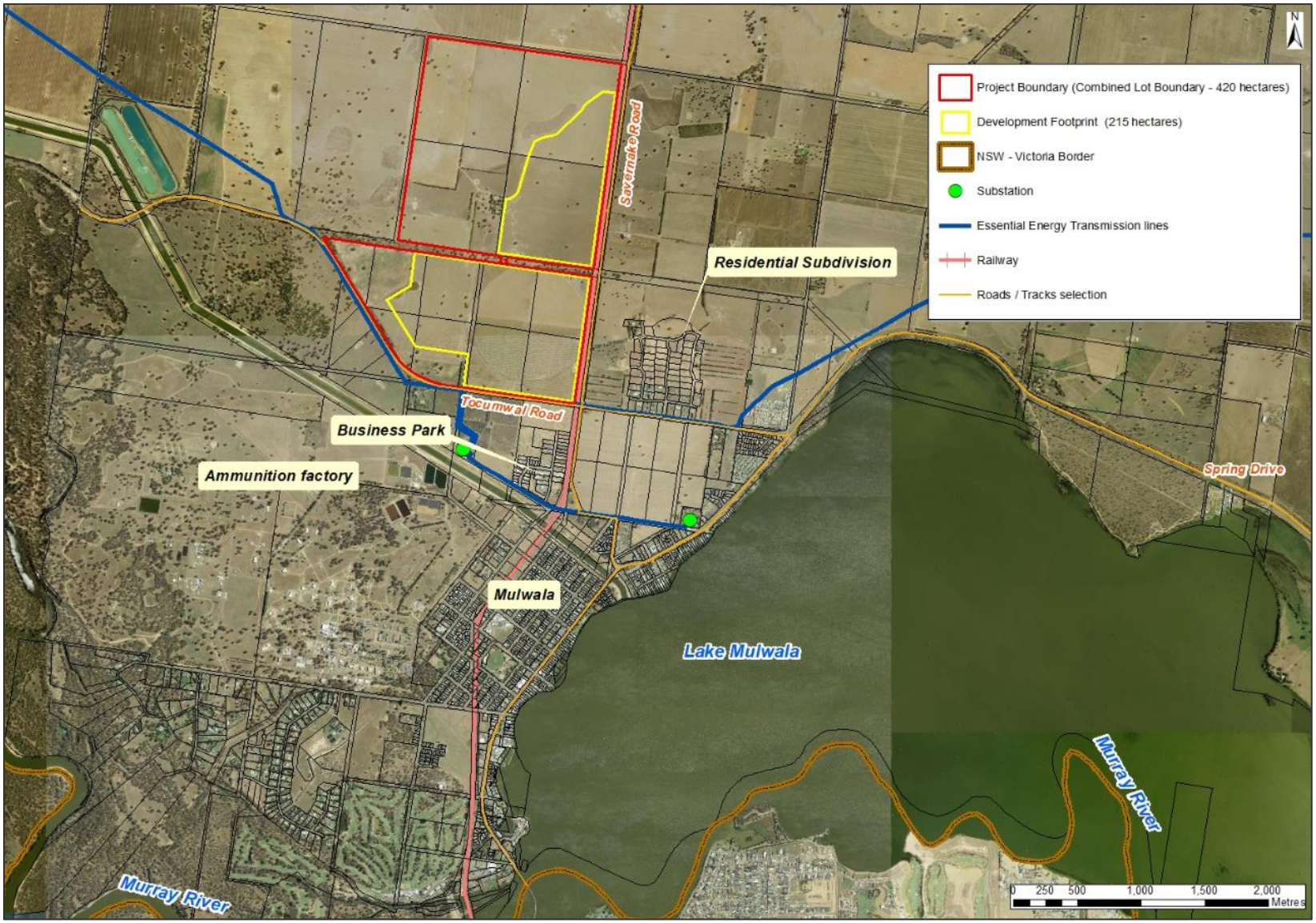

Figure 4 | Mulwala township

The Department has also considered potential impacts on the amenity of nearby residences, including visual, noise, traffic an property values. These matters are discussed at **section 6.2** and **6.3**. With the implementation of the recommended conditions of consent, the Department does not consider that the project would have a significant impact on the amenity of nearby residences.

Additionally, the project is consistent with the *Federation Council Community Strategic Plan 2018 – 2028,* which identifies local renewable energy production as important. 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.

Finally, the Department considers that the project would represent a continuation of the mix of industrial, agricultural and special land uses to the west of the railway line, supporting the clear delineation between the residential land uses to the east of the railway along Lake Mulwala.

In summary, given the low rate of population growth and the availability of existing land zoned for residential use, the Department and Council have no residual concerns about any effect that the proposed development would have on the availability of housing within Mulwala.

Summary

The potential loss of a relatively small area of residential and 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; 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 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.

The Department has also considered and recommended conditions to minimise impacts on the amenity of surrounding residences, including any future residences that may be constructed in the adjacent R2 land. These matters are discussed in **section 6.2** and **6.3** below.

6.2 Visual

There are 25 non-associated dwellings located in the residential subdivision east of the site, forming part of a larger residential subdivision of 224 lots, located between 100 m and 1.3 km from the site. In addition, there are six non-associated rural residences located within 1 km of the project site, with the two closest dwellings (R3 and R5) located 220 m and 270 m south and east of the development footprint respectively.

No listed scenic or significant vistas are located in proximity to the project site, and the project would not be visible from Mulwala township due to distance and intervening vegetation.

Concerns about visual impacts were raised in one submission, from a special interest group that owns land located approximately 1.7 km east of the site. No surrounding landowners made a submission on the proposal.

The EIS includes a comprehensive visual impact assessment that is based on seven viewpoints and includes photomontages showing the visual extent of the project for all viewpoint locations.

The Applicant has designed the project to be set back from the southern property boundary to avoid clearing native vegetation, which has reduced visual impacts at residence R3.

Additionally, the Applicant has proposed vegetation screening along the full extent of the southern and eastern site boundaries, which would reduce visual impacts on surrounding residences, including the residential subdivision to the east, and road users along Tocumwal Road and Savernake Road (see **Figures 4** and **5**).

The proposed landscaping plan was developed by the Applicant in consultation with nearby residents and was further refined during the assessment process in response to advice from the RMS.

Figure 5 provides an example of the predicted view looking west towards the project from Savernake Road. As the proposed solar farm is relatively low-lying (i.e. with a maximum solar panel height of up to 4 m), with the proposed vegetation screening, the views of the project from receivers in this locality (i.e. R5 and R7 and the residential subdivision), would be largely screened. The Applicant's visual impact assessment concluded that the most affected residences would experience only low residual visual impacts.

The operations and maintenance building, site office and battery storage facility would be a similar size to agricultural sheds commonly utilised in the local area. Additionally, the photovoltaic panels are designed to absorb rather than reflect sunlight and the project would not cause noticeable glint or glare compared to other building surfaces.

As such, with the proposed avoidance and mitigation measures, the visual impacts to surrounding residences would not be significant.

Recommended conditions

The Department has recommended a range of stringent conditions requiring the Applicant to establish and maintain a mature vegetation buffer along the site's eastern and southern boundaries. This buffer must:

- be established prior to the commencement of operations;
- consist of species that facilitate the best possible outcome in terms of visual screening (i.e. the buffer does not have to consist only of native vegetation);
- be effective at screening views of the solar panels and ancillary infrastructure from surrounding residences within 3 years of the commencement of construction; and
- be properly maintained with appropriate weed management.

Furthermore, the Applicant must prepare a detailed Landscaping Plan for the site, in consultation with Council and surrounding landowners, which must include a description of measures that would be implemented to ensure the effectiveness of the vegetation buffer. This plan must also include a program to monitor and report on the effectiveness of these measures.

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

Subject to the implementation of these measures, the Department considers that there would be no significant visual impact.

Figure 4 | East facing view of the proposed landscaping along Tocumwal Road

Figure 5 | West facing view of the proposed landscaping along Savernake Road

6.3 Other Issues

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

Table 3 | Other Issues

Issue	Findings	Recommended Condition
Biodiversity	• The site is mostly cleared agricultural land comprised of a mixture of grazed and cropped paddocks. Nonetheless, the site includes 41 ha of native vegetation (see **Figure 2**). • The project layout has been designed to avoid all remaining patches of native vegetation and 51 paddock trees. However, 33 assessable paddock trees would be removed. • The Applicant has calculated the ecosystem offset credits in accordance with the *Biodiversity Assessment Methodology*, resulting in 30.75 ecosystem credits to be retired. OEH has confirmed that the credits have been calculated correctly. • The project is unlikely to have a significant impact on any threatened species. • Subject to the recommended conditions, the Department and OEH consider that the project is unlikely to result in a significant impact on the biodiversity values of the locality.	• Retire required offset credits in accordance with the NSW Biodiversity Offsets Scheme for Major Projects within two years of the commencement of construction. • Prepare a Biodiversity Management Plan in consultation with OEH.
Heritage	• There are no items of historic heritage value within the site. The Mulwala Station Homestead is the closest item, located approximately 850 m south of the site, and would not be impacted by the project. • An Archaeological and Cultural Heritage Assessment was completed in accordance with the relevant guidelines and included adequate consultation with the local Aboriginal community. • Ten Aboriginal sites were identified within the site, including (see **Figure 2**): - an Aboriginal resource and gathering area of low significance; - seven isolated artefacts of low significance; and - two sensitive landform features (a dune formation and wetland) considered likely to contain subsurface artefacts. • Two new scarred trees located within the Lambruck Lane road reserve (outside the project boundary) were also identified. • The project (including road upgrades) has been designed to avoid all identified sites, except for three of the isolated artefacts of low significance. • The Applicant would confirm during the detailed design phase whether these sites would remain insitu (i.e. protected) or be salvaged and relocated. • OEH raised no concerns on Aboriginal cultural heritage impacts and the Registered Aboriginal Parties who participated in the process supported the proposed mitigation and management measures. • The Department considers that the project would not significantly affect the Aboriginal heritage values of the locality.	• Ensure the project does not cause any direct or indirect impacts on any items located outside the approved development footprint. • Salvage and relocate all Aboriginal heritage items located within the development footprint to suitable alternative locations within the site. • Prepare and implement a chance find protocol.
Soil and water	• The project would require around 10 megalitres (ML) of water during construction (mainly for dust suppression) and 0.5 ML of water annually during operation. A static water supply (20,000 litres) would also be established and maintained for fire protection. • Water demands during construction and decommissioning would be met by a combination of potable water trucked to the site or sourced from onsite bores and dams. During operations, potable water would be trucked to the site. • There are no watercourses located within or immediately surrounding the site, and there is no riverine flood risk. • The site includes areas identified as wetlands under the Corowa LEP. • The project has been designed to avoid all areas identified as wetlands or subject to local inundation (see **Figure 2**).	• Prohibit water pollution. • 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). • Prepare and implement a Stormwater Plan.

Issue	Findings	Recommended Condition
	• DoI – L&W recommended that the Applicant design fencing to reduce impacts on localised flooding, and the Department has recommended a condition of consent to this effect. • The Department has also recommended a condition requiring the Applicant to prepare and implement a Stormwater Plan. • Any potential erosion and sedimentation risks associated with the project can be effectively managed using best practice construction techniques • The Department and DoI – L&W consider that these measures would minimise the water impacts of the project.	• Ensure the project is designed, constructed and maintained to avoid causing any erosion on site, to avoid or reduce impacts on localised flooding, and avoid impacts on groundwater.
Traffic	• The main transport route to be used for the project during construction and operation is via Melbourne Road (to the south) or Corowa Road/Spring Drive (to the north) and Tocumwal Road, Savernake Road and Lambruck Lane. All roads along the transport route are designated for use by B-doubles. • Site access during construction, operations, decommissioning and/or rehabilitation would be via two existing site access points from Lambruck Lane (see **Figure 2**). • The main increase in traffic volumes associated with the project would occur during the 8 month construction period, with a peak period of 2 months. The estimated peak daily vehicle movements during construction would be 39 vehicle movements per day, comprising 26 light vehicles (cars and shuttle buses) and 20 heavy vehicles (trucks). Additionally, there would be 10 over-dimensional vehicle movement during construction. • Traffic during operations would be negligible (i.e. up to 2 heavy vehicle per day). • Road upgrades would be undertaken in consultation with the RMS and Council and include upgrading the intersection of Savernake Road and Lambruck Lane to accommodate two-way heavy vehicle movements, widening and sealing Lambruck Lane from Savernake Road to the Benalla - Oaklands railway crossing and upgrading the intersections of the access driveways with Lambruck Lane. • With these upgrades and the implementation of a Traffic Management Plan, the Department, RMS and Council are satisfied that the project would not result in significant impacts on the road network capacity, efficiency or safety.	• Undertake the relevant road upgrades prior to commencing construction. • Ensure the number and length of vehicles does not exceed those predicted in the EIS. • Prepare and implement a Traffic Management Plan in consultation with RMS and Council.
Noise	• The proposed construction, upgrading and decommissioning activities would be well below the 'highly noise affected' criterion of 75 dB(A) in the EPA's *Interim Construction Noise Guideline* (ICNG). • However, some non-associated residences surrounding the site may be subject to temporary noise above the 'noise affected' criterion of 45 dB(A) during two of the three construction phases. • The piling and earthworks phases may last for up to 2 months, and up to 5 residences (R3, R4, R5, R6, R7) may be subject to noise levels between 1 and 13 dB(A) above 45 dB(A). • These exceedances would be short-term (a few days at each receiver), 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, including noise form vehicle movements.	• 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
Battery storage facility hazard	• In response to increasing demands for dispatchable energy, the Applicant is proposing an on-site battery storage facility. • The battery storage facility would be located within a cleared and fenced area approximately 400 m away from residences and other sensitive locations (see **Figure 2**) • The facility would include purpose-built containers to house the batteries, each comprising power conversion systems, transformers, air conditioning and temperature monitoring systems. • The Applicant would implement a range of hazard prevention and mitigation measures including (but not limited to): - minimum separation distances of 2 m between containers; - a 10 m Asset Protection Zone around the battery storage facility; - an integrated fire suppression system in each container; - automated monitoring of voltage and temperature, including alarm and shutdown response systems; and - pressure release exhaust in the container. • The Department has carefully assessed the proposed battery storage facility in consultation with its internal hazards unit, the Department of Defence and other relevant government agencies. • The Department has recommended several conditions in accordance with *Hazardous Industry Planning Advisory Paper No. 12* to control any potential hazards. • Subject to the recommended conditions, the Department is satisfied that risks associated with the facility would be minimal.	• 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 in conjunction with the Department's *Hazardous Industry Advisory Paper No. 1.* • Submit a compliance report outlining how the conditions have been addressed prior to the commencement of construction.
Other hazards	• The project would comply with the National Health and Medical Research Council standards for electric and magnetic fields. • The bushfire risks can be suitably controlled through the implementation of standard fire management procedures. • The Applicant has committed to managing the entire site as an Asset Protection Zone and preparing a bushfire management plan to manage fire risk.	• Ensure that the development 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.
Subdivision	• The Applicant proposes to subdivide all lots on which the development footprint is located (i.e. excise the development footprint from existing lots) to facilitate a lease agreement with the land owner. • The proposed subdivision would consolidate 10 existing lots into 5 new lots, including 2 lots for the project site (an 82 ha northern lot and a 133 ha southern lot), 1 lot for the substation (0.25 ha) and 2 residual lots that would continue to be used by the land owner for agricultural purposes (29 ha and 43 ha). • All of the reconfigured lots would be prohibited under a strict reading of the Corowa LEP as the minimum lot size for RU1 land (250 ha) and R2 land (1 ha) would not be met. • 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 considers that the subdivision should be approved as: - it would permit existing agricultural land uses to continue on land that is not required for the development; - it would not result in the addition of any dwelling entitlements on the subdivided lots; and - it is consistent with the key objectives of the RU1 zone as it would encourage diversity and primary industry enterprises and minimise conflict between land uses. • Further, Council supports the proposed subdivision.	• Subdivide the proposed lots subject to information being provided in accordance with the requirements of section 157 of the *Environmental Planning and Assessment Regulation 2000.*

7. Evaluation

The Department has assessed the development application, EIS, submissions, Response to Submissions 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 also been designed to largely avoid key constraints, particularly in relation to visual impacts, biodiversity, heritage and local inundation and traffic impacts. Any residual impacts would be minor and can be managed through the recommended conditions.

Both the Department and Federation Council consider a solar farm development to be a suitable land use for the site. The project would not significantly reduce the overall agricultural productivity of the region and the site could be returned to agricultural uses in the future. Additionally, the project would not have a significant impact on the availability of housing within Mulwala.

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 low emissions sources. It would generate approximately 177,000 MWh of clean electricity annually, which is enough to power up to 30,000 homes and save up to 170,000 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 an 40 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 130 full time construction jobs, with a capital investment of up to $119 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.

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 Mulwala Solar Farm (SSD 9039); and
- **signs** the attached development consent and recommended conditions of consent (see **Appendix F**).

Recommended by:

14/12/18

Iwan Davies
Senior Environmental Assessment Officer
Resource and Energy Assessments

Recommended by:

17/12/18

Clay Preshaw
Director
Resource and Energy Assessments

9. Determination

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

18/12/18

David Kitto
Executive Director
Resource Assessments and Business Systems

Appendices

Appendix A – List of Documents

Mulwala Solar Farm Environmental Impact Statement, RPS Manidis Roberts PTY LTD, May 2018

Mulwala Solar Farm Proposal, Response to Submissions Report, October 2018

Appendix B – Environmental Impact Statement

See the Department's website at:

http://majorprojects.planning.nsw.gov.au/index.pl?action=view_job&job_id=9039

Appendix C – 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 6.2** 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 6.3** 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 *Corowa Local Environment Plan (LEP) 2012* applies and is discussed in **sections 4.2** and **6.1** of this report. The project is permissible under the Infrastructure SEPP. The Applicant completed a preliminary risk screening for the battery storage facility, in accordance with *SEPP No. 33 – Hazardous and Offensive Development* (SEPP No. 33). The Department's consideration of this analysis is discussed in **section 6.5**. 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 D – Submissions

See the Department's website at:

http://majorprojects.planning.nsw.gov.au/index.pl?action=view_job&job_id=9039

Appendix E – Response to Submissions

See the Department's website at:
http://majorprojects.planning.nsw.gov.au/index.pl?action=view_job&job_id=9039

Appendix F – Recommended Conditions of Consent

See the Department's website at:
http://majorprojects.planning.nsw.gov.au/index.pl?action=view_job&job_id=9039