Riverland Solar Farm Variation (Sponsored by the Department for Energy and Mining)

Variation to Crown application 711/V030/17 to modify transmission line connection point, shift approved Battery Energy Storage System (BESS) area, location of associated infrastructure and increase in capacity to 300MW/1200MWh.

278 Nikalapko Rd Stuart

Development Application 26001439

CONTENTS:

OVERVIEW

DEVELOPMENT NO.:	26001439
APPLICANT:	OX2
CONSENT SOUGHT:	Development Approval
ADDRESS:	278 Nikalapko Rd Stuart
NATURE OF DEVELOPMENT:	Variation to Crown application 711/V030/17 to modify transmission line connection point, shift approved Battery Energy Storage System (BESS) area, location of associated infrastructure and increase in capacity to 300MW/1200MWh.
ZONING INFORMATION:	**Zone / Subzone:** • Rural – Ru **All Overlays:** • Hazards (Bushfire - General) • Water Resources • Dwelling Excision • Hazards (Flooding - Evidence Required) • Native Vegetation • River Murray Flood Plain Protection Area • Murray-Darling Basin • Limited Land Division • Key Outback and Rural Routes **Variations:** • Finished Ground and Floor Levels – 11.52 AHD • Minimum Site Area - 40 ha • Minimum Site Area - 900 ha • Minimum Dwelling Allotment Size - 900 ha
LODGEMENT DATE:	2 March 2026
RELEVANT AUTHORITY:	Minister for Planning
P& D CODE VERSION:	Version 2026.4 (26 February 2026)
CATEGORY OF DEVELOPMENT:	Performance Assessed – Section 131 – Crown Development
APPEAL RIGHTS:	N/A
NOTIFICATION:	Public notification required –One (1) representor (to be heard)
REFERRALS STATUTORY:	Native Vegetation Council, Mid Murray Council
REFERRALS INFORMAL:	South Australian Country Fire Service, Commissioner of Highways
DELEGATION:	SCAP (as delegate of SPC) to provide advice to the Minister for Planning pursuant to Section 131 (17) of the *Planning, Development and Infrastructure Act 2016*.
REPORT AUTHOR:	Eric Alessi, Senior Planning Officer

EXECUTIVE SUMMARY

On 20 July 2017 Lyon Solar lodged a Crown Development application (specifically endorsed for the purposes of public infrastructure by the Department for Premier and Cabinet under s.49 of the repealed *Development Act 1993*) for the construction and operation of a 330 MW Solar Farm and 400 MW battery storage with associated site works and civil infrastructure.

The development was approved by the Minister of Planning on the 27 November 2017 subject to conditions and has received various extension of times to commence and complete works. The ownership of the project has also changed to OX2 Holdings Pty Ltd (OX2) and Magnetar Solar Australia DAC (Magnetar Solar).

OX2 have been undertaking a series of detailed assessments to determine the most appropriate way to connect the project into the high voltage transmission network. Two (2) options were investigated.

One (1) involves the connection via two (2) 132 kV North West Bend-Monash lines or alternatively, connection via a single 330kV Project Energy Connect (PEC) line. The PEC line is the high voltage transmission line forming the SA-NSW Interconnector from the Bundey Substation (north-east of Robertstown) to the Buronga Substation (north of Mildura) in New South Wales. The 330kV PEC line was determined to be the most feasible option.

To achieve the new connection several changes to the approved project are required.

These are summarised as follows:

- Changing transmission line connection point from 2 x 132kV North West Bend-Monash line connection to the Robertstown-Buronga 330kV Project Energy Connect line.
- Relocating the BESS area closer to the connection point including substation, switchyard and other infrastructure.
- BESS capacity will be increased to 300MW/1200MWh.

The subject land is within the Rural zone of the Planning and Design Code.

As part of the assessment prescribed referrals were undertaken to Mid Murray Council, and the Native Vegetation Council. Technical referrals were undertaken to the Commissioner of Highways and Country Fire Service. No objections were received from Council or the referral agencies but made comments and recommended conditions.

A detailed assessment against the Planning and Design Code has been undertaken.

The Rural Zone under the Planning and Design Code anticipates the establishment of Renewable Energy Facilities. There are several overlays which are relevant to the type of development in Rural zone, including Flooding and Bushfire Hazard, Key Outback and Rural Routes and Native Vegetation Overlays. The proposal remains consistent with the provisions within the overlays, and with the provisions of the Interface between Land Uses and Infrastructure and Renewable Energy Facilities – General Development Policies.

Overall, the development is not expected to prejudice the desired outcomes of the Rural zone and is expected to meet the provisions of the applicable Overlays and relevant General Development Policies.

ASSESSMENT REPORT

1. BACKGROUND

Murray Mallee Regional Plan

The subject land is identified in the plan as 'Existing Primary Industry Land's'. The plan seeks the retention of rural lands for productive purposes, but also includes references to Renewable Energy development under the Energy long-term strategic objectives. It envisaged that the siting of any new large-scale renewable energy facility should avoid scenic landscapes, land with high environmental and food production value, and culturally significant areas in recognition of the important role these areas play in supporting the region's economy.

State Planning Policies

The development broadly supports the following SPPs:

- SPP 5 Climate Change – Objective: *Provide for development that is climate ready so that our economy, communities and environment will be resilient to climate change impacts.*
- SPP 12 Energy – Objective: *To support the ongoing provision of sustainable, reliable and affordable energy options that meet the needs of the community, business and industry.*

Process

The development was originally sponsored under the former *Development Act 1993* for the purposes of 'public infrastructure' by the Department for Premier and Cabinet on 20 July 2017. A variation application was lodged with the State Planning Commission (SPC) on 2 March 2026. The application has been assessed in accordance with the provisions of Section 131 of the *Planning, Development and Infrastructure Act 2016* including mandatory and information referrals, and public notification.

2. DESCRIPTION OF PROPOSAL

The solar farm and ancillary infrastructure components have been authorised.

This development authorisation proposed to connect to two 132kV PEC lines which traverse the site.

Following further negotiations and discussions with ElectraNet, the proponent has now sought a change to the connection point to the 330kV PEC line (with the line now built) for reasons of commercial feasibility.

To accommodate a change in the approved design, a number of revisions are required to the project which are summarised in the proponents planning report and below:

- Modification of the transmission line connection point.
    - changing from a connection via the 2 x 132kV North West Bend-Monash lines to the Robertstown-Buronga 330kV Project Energy Connection (PEC) line.
- Relocation of the Stage 1 BESS Area adjacent the new connection point.
    - The substation, switchyard and other connection infrastructure moving from property parcel CT 5900/945 Section 65 to CT 5990/945 Section 66 and CT 5990/945 Section 67.
- Increase in BESS storage / discharge capacity to 300MW/1200MWh (4-hour duration).

It should be noted the revised development footprint remains entirely within the project boundary as defined in the original Development Application.

The staging of the development (BESS and related infrastructure – Stage 1; Solar Farm - Stage 2 and related infrastructure) was approved in May 2025. This is unchanged.

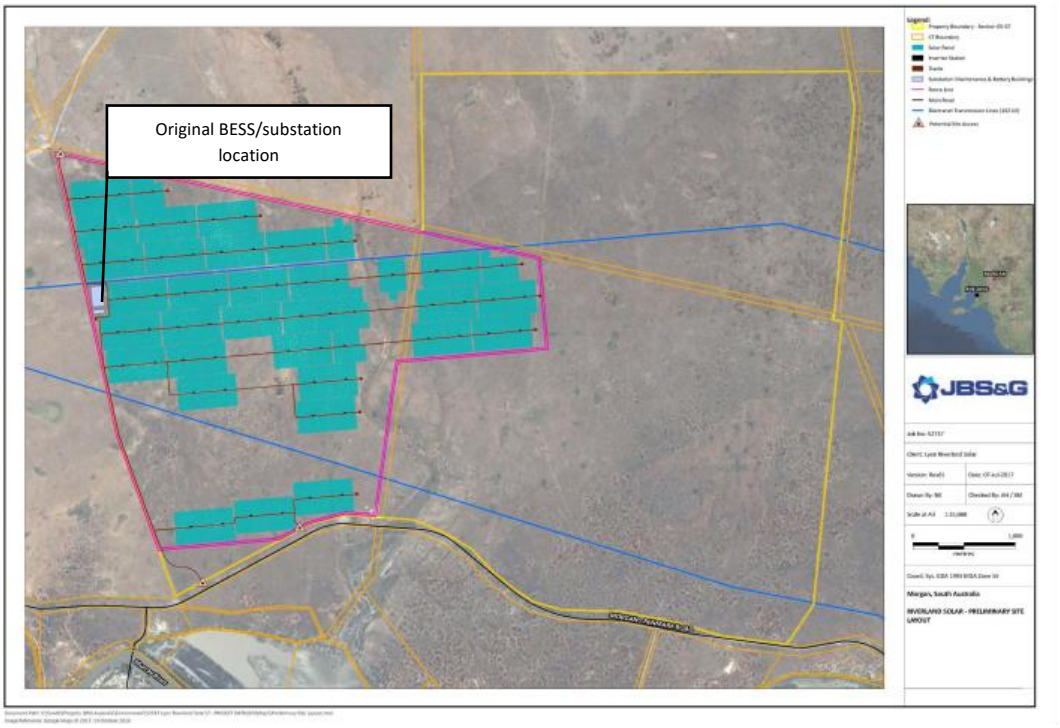

Image 1. *Approved site layout*

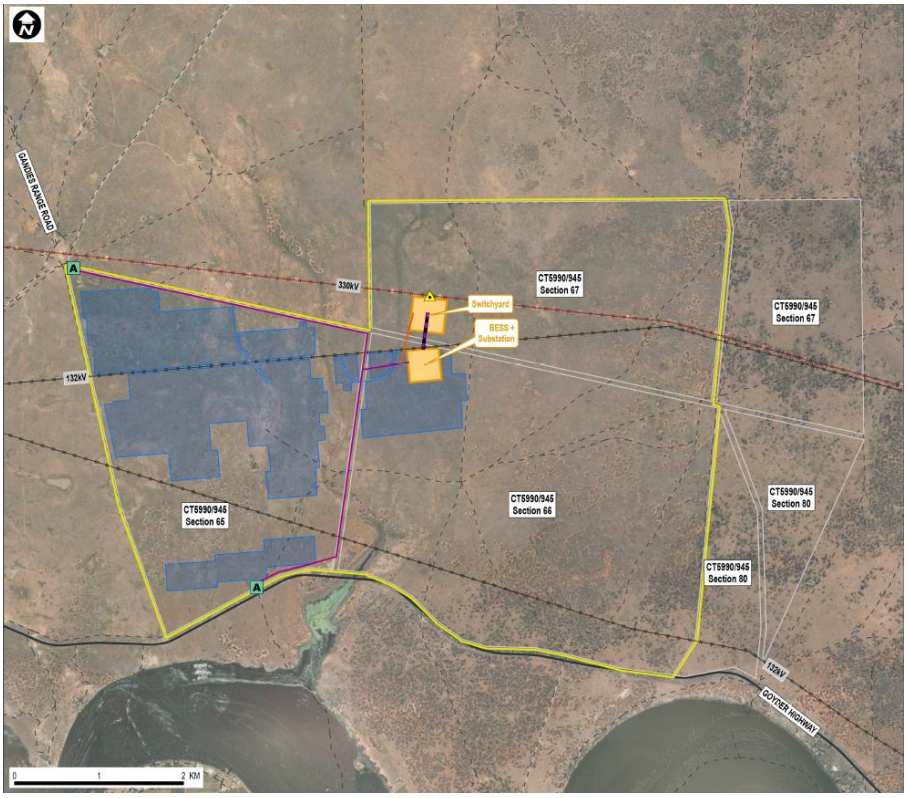

Image 2. *Proposed site plan*

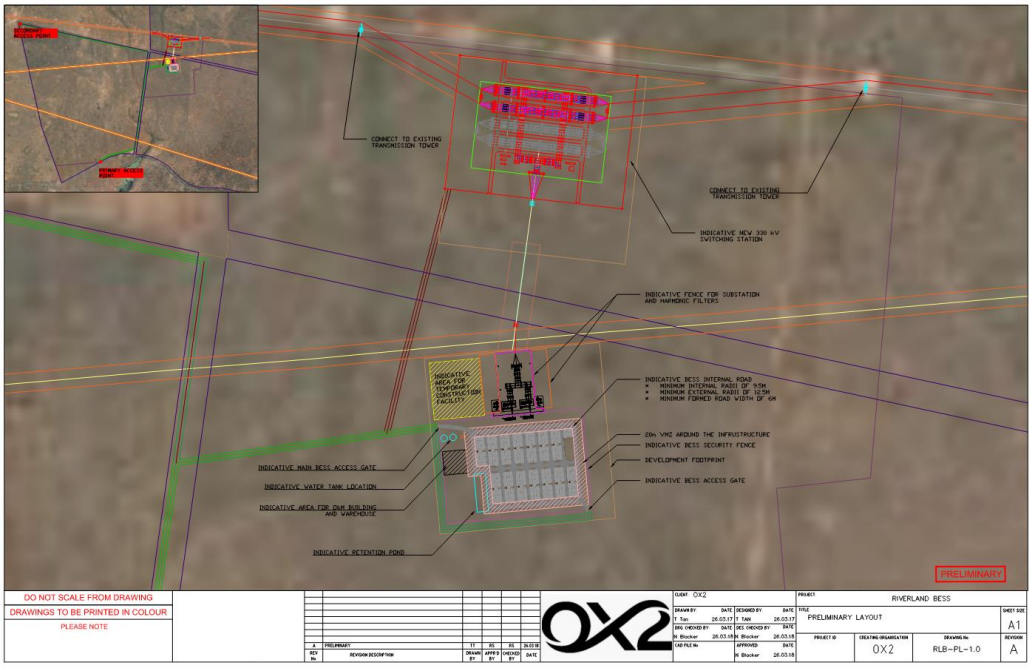

Image 3. *Substation and Switchyard Layout*

3. SITE AND LOCALITY

Location reference: 278 Nikalapko Rd Stuart SA

Title reference: CT 5990/945
CT 5990/945
CT 5990/945

Plan Parcel: H760400 SE66
H760400 SE65
H760400 SE67

Council: Mid Murray Council

3.1 Site Description

The land is located over four (4) allotments north of the Goyder Highway, Stuart.

The land comprises a former pastoral company 'Nikalapko Station'.

The overall area of the allotments is approximately 3,500 hectares. Two existing 132 kV transmission lines travel through the site and one 330kV transmission line. The topography is relatively flat with a minor watercourse crossing through the centre of the site.

3.2 Locality

The broader locality is characterised by low-intensity agricultural land uses within the Rural zone. The nearest township is Morgan approximately 10 kilometres to the south-west of the site. The River Murray is to the south.

4. CATEGORY OF DEVELOPMENT

- **PER ELEMENT:**
  Variation to change connection point for transmission lines, change BESS area, and an increase capacity to 300MW/1200MWh (performance assessed Crown pursuant to Section 131 of the *Planning, Development and Infrastructure Act 2016*)

- **OVERALL APPLICATION CATEGORY:**
  Performance Assessed – Crown

- **REASON**
  The variation application was specifically endorsed for the purposes of 'essential infrastructure' by the Department for Energy and Mining. An application was subsequently lodged with the State Planning Commission (SPC) under Section 131 of the Act.

5. STATUTORY REFERRAL BODY COMMENTS

- **Mid Murray Council**

  No objection. A summary of their comments is below:

  - The preferred access is off the Goyder Highway which requires a s.221 permit for a new crossing.
  - Access off Woods and Forest Roads would require for the applicant to enter into an Infrastructure Agreement (IA) with Council to upgrade and maintain the road throughout the construction.
  - The upgrade of Woods and Forest Road will be dependent on a *dilapidation survey, pavement investigation, traffic volumes (from a Traffic Management Assessment/Plan) and swept paths.*
  - All internal access remains within internal road reserves.
  - *A s.221 permit is required for all works on Council road reserves.*
  - A Stormwater Management Plan is to be undertaken to minimise the impact of stormwater on neighbouring properties and infrastructure.

- **Native Vegetation Council**

  No objection. A condition and advisory note were recommended as follows:

  - *Prior to any clearance of native vegetation, the Native Vegetation Council must provide written confirmation that the Significant Environmental Benefit requirements under the Native Vegetation Act 1991 have been satisfied.*
  - *The clearance of native vegetation must be undertaken in accordance with an approval from the Native Vegetation Council under the Native Vegetation Act 1991.*

- **Commissioner of Highways**

  No objection. Four (4) conditions were recommended and one advisory note.

  The existing condition regarding site access from the Goyder Highway is recommended to be amended to clarify that the access location is to be approximately 300m east of the western boundary of CT 5990/945. This is to ensure the access location is consistent with the original approval which does not align with 'Access A' location shown on the updated plans.

- **South Australian Country Fire Service (CFS):**

  No objection. The response recommended the following conditions:

  - An Asset Protection Zone (APZ) is recommended to create a setback/buffer to any infrastructure using mineral earth breaks, roadways and/or areas of managed vegetation to prevent or prohibit the spread of bushfires.
  - The indicative area for temporary construction facility does not meet the requirement for an APZ.
  - All buildings and infrastructure should be located no less than 15 metres form the property boundaries/site boundaries for the purpose of maintaining and APZ to achieve the BAL 12.5 kW/m2.
  - Any internal road network should be designed to facilitate access for fire trucks in accordance with the planning and design code.
  - Vegetation management shall be established and maintained within each substation/control building/BESS or other similar assets.
  - A 72,000 litre water tank is to be made available in accordance with SA Fire Service Policy 14.
  - A Bushfire Management Plan and Emergency Management Plan will need to be established and reviewed every 12 months.
  - A manifest box should be incorporated into the development.
  - All class 2 – 9 buildings will need to comply with the provisions of the National Construction Code (NCC).

  It is noted that any condition recommendations made by the Council or State Agencies will only be taken into account that directly relate to the matters subject of this variation application.

6. PUBLIC NOTIFICATION

- **Reason**

  The cost of work of the original application was over $4 million and was notified at the time.

  Section 131 of the Act allows for a variation to not be notified only when it constitutes a minor variation. The development comprised both the relocation and expansion of approved elements onto other land within the project area (along with a different connection method). These changes were not "minor" in nature.

  The application was placed on notification between 20 March 2026 and 20 April 2026. An advertisement was placed in the Adelaide Advertiser and Plan SA's online planning portal, and at the principal office of the Department for Planning and Urban Development. A sign was not required to be placed on the land in accordance with Practice Direction 13 (10).

- **Representations**

  One (1) representation (received in two submissions) was received during the notification period and the representor has indicated a wish to be heard by the State Commission Assessment Panel. The representation raised a number of objections to renewable energy developments in general.

  A full copy of representation received during consultation period are included in **Attachment 4**.

7. PLANNING ASSESSMENT

The application has been considered against the relevant provisions of the Code, which are contained in **Appendix 1**.

7.1 Land Use and Character

PO 1.1 The productive value of rural land for a range of primary production activities and associated value adding, processing, warehousing and distribution is supported, protected and maintained.

The initial development was considered against the Rural zone under the former Development Plan. Subsequently the Planning and Design Code has come into effect, and the land is located within the Rural zone. Renewable Energy Facilities are a type of land use envisaged within the zone. The code defines the land use as follows:

> *Means land and/or water used to generate electricity from a renewable source such as wind, solar, tidal, hydropower, biomass and/or geothermal.*
>
> *This use may also include:*
>
> *a) any associated facility for the storage and/or transmission of the generated electricity;*
> *b) any building or structure used in connection with the generation of electricity.*

The land use is consistent with what is envisaged within the zone.

7.2 Interface between Land Uses

The most relevant land use interface policies to the assessment are as follows:

PO 1.2 Development adjacent to a site containing a sensitive receiver (or lawfully approved sensitive receiver) or zone primarily intended to accommodate a sensitive receivers is designed to minimise adverse impacts.

PO 4.1 Development that emits noise (other than music) does not unreasonably impact the amenity of sensitive receivers (or lawfully approved sensitive receivers).

The initial application was supported by an Environmental Noise Assessment prepared by Sonus.

The report considered the potential noise sources from the development, including:

- 2 inverters for each of the 66 main blocks of solar photovoltaic modules;
- 2 transformers with a rating of 120MVA located at the substation;
- 80 external air-conditioning condensing units located at the battery storage building site.

The closest sensitive receivers were identified as being located south of the River Murray approximately 1.3 and 1.5 kilometres (respectively) to the south-west of the site.

The report was accompanied with a map displaying the curtilage of areas anticipated to be impacted by noise outside of the noise criteria. The amended application relocates the BESS approximately 2 kilometres north-east of the previous location. As there is an increased separation distance the conclusions of the original noise assessment are considered to remain applicable.

Code policy also seeks to minimise the potential for air quality impacts from development.

PO 5.1 Development with the potential to emit harmful or nuisance-generating air pollution incorporates air pollution control measure to prevent harm to human health of unreasonably impact the amenity of sensitive receivers (or lawfully approved sensitive receivers) with the locality and zones primarily intended to accommodate sensitive receivers.

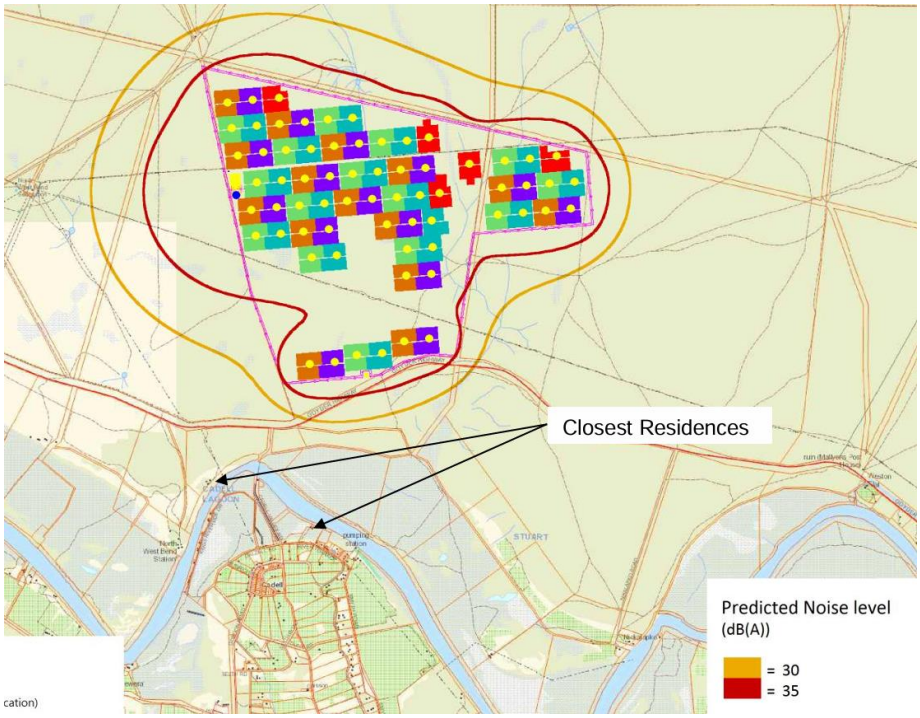

Image 4. *Curtilage of areas anticipated to be impacted by noise in original acoustic assessment*

The original application considered the risk of dust generation during the construction phase.

A condition was placed on the consent for a Construction Environmental Management Plan (CEMP) to be developed prior to the commencement of construction outlining how air quality and dust is to be managed during the construction phase. Condition 10 also requires an Operational Environmental Management Plan (OEMP) to outline management measures for air quality (noise and dust) during the operation of the development.

It is not anticipated any of the changes to the development would generate additional air quality impacts and emissions.

Whilst the project area is located in a sparsely populated area (and not directly adjacent to more sensitive land uses), code policy also has regard to lighting impacts.

PO 6.1 External lighting is positioned and designed to not cause unreasonable light spill impact on adjacent sensitive receivers (or lawfully approved sensitive receivers).

PO 6.2 External lighting is not hazardous to motorists and cyclists.

The original application was granted with a condition requiring compliance with Australian Standard AS 4282-1779 - Control of the obtrusive effects of outdoor lighting. The amended application does not introduce any additional lighting which is anticipated to conflict with PO 6.1 and 6.2.

Solar farms can (mistakenly) be associated with glare impacts but invariably cause very little to no glare. Modern solar panels feature textured glass and anti-reflective coatings, designed to absorb over 90% of incoming sunlight rather than reflect it. The panels are also aligned to and/or track the sun.

PO 7.1 Development is designed and comprised of materials and finishes that do not unreasonably cause a distraction to adjacent road users and pedestrian area or unreasonably cause heat loading and micro-climatic impacts on adjacent buildings and land uses as a result of reflective solar glare.

Glare was considered in the initial application. The main source of potential glare was considered to be from the metal frame structure that supports the solar panels. Glare was not found to be a risk to aviation operations or nearby road users.

Condition 2 requires the final design to minimise glare risks. Condition 10 also required the Operational Environmental Management Plan to consider glare risk. The variation makes a minor reconfiguration of the solar arrays by changing the dimensions of the arrays around the former substation and battery buildings. There have been no changes to the nature of the infrastructure which would create additional opportunities for glare. The variation accords with PO 7.1.

7.3 Traffic and Car Parking

The Key Outback and Rural Routes Overlay advocates for the efficient movement of vehicle and freight traffic and the provision of safe and efficient vehicular access. The original application was accompanied with a Road Impact Assessment prepared by Advisian. The report recommended that a new access off the Goyder Highway is required in order to achieve the required sight lines. Construction traffic should not impact the capacity of roads for the delivery of construction materials, equipment and personnel. The nature of the changes should not materially affect construction or operational traffic volumes.

7.4 Vehicle Access

PO 1.1 Development is integrated with the existing transport system and designed to minimise its potential impact on the functional performance of the transport system.

The transport routes for the construction equipment, building materials and project components remain unchanged from the initial Traffic Assessment. Internal project access tracks have been revised to accommodate the amended location of the BESS.

7.5 Hazards (Flooding - Evidence Required)

PO 1.1 Development is sited, designed and constructed to minimise the risk of entry of potential floodwaters where the entry of flood waters is likely to result in undue damage to or compromise ongoing activities within buildings.

The original application addressed potential surface water impacts.

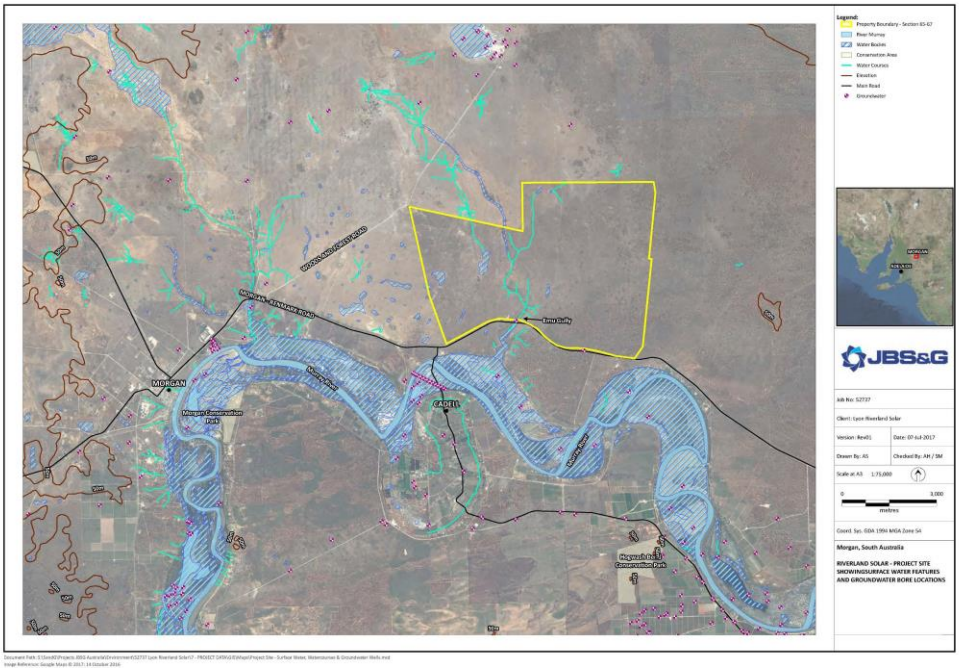

Image 5. *Surface water features from original application*

The site contains numerous depressions and claypans which would be temporarily inundated following heavy rainfall events. The original application was accompanied with a surface water features plan which shows the location of water courses and bodies throughout the site. The amended location of the BESS is not anticipated to disrupt local surface flows. The site is above the likely Murray River flood levels.

The proposal accords with PO 1.1.

7.6 Hazards (Bushfire - General)

PO 1.1 Buildings and structures are located away from areas that pose an unacceptable bushfire risk as a result of vegetation cover and type, and terrain.

As part of the assessment the application was re-referred to the Country Fire Service. The response considered the bushfire hazards to and from the site, and mitigation measures required to prevent the spread of fire to the site, or the environment. Several standard conditions were recommended.

7.7 Native Vegetation

PO 1.1 Development avoids, or where it cannot be practically avoided, minimises the clearance of native vegetation taking into account the siting of buildings, access points, bushfire protection measures and building maintenance.

The original application was supported by an Ecological Assessment prepared by T&M Ecologists dated June 2017. The report considered potential impacts on flora and fauna species based on the footprint of the development at the time. This included dividing the project site into vegetation communities. The amended BESS location is contained within vegetation community 1 which is described as open to very open shrubland with scattered emergent Eucalyptus species, and other species of vegetation. The amended location is within the same vegetation community as the original location on the eastern side of the site. There will be no additional impacts on a more sensitive vegetation community. The referral from the Native Vegetation Council advised that the previously determined Significant Environmental Benefit (SEB) Offset would need to be amended to account for the change in clearance area. The existing report is considered adequate for determining vegetation and habitat impacts. The proposal accords with PO 1.1.

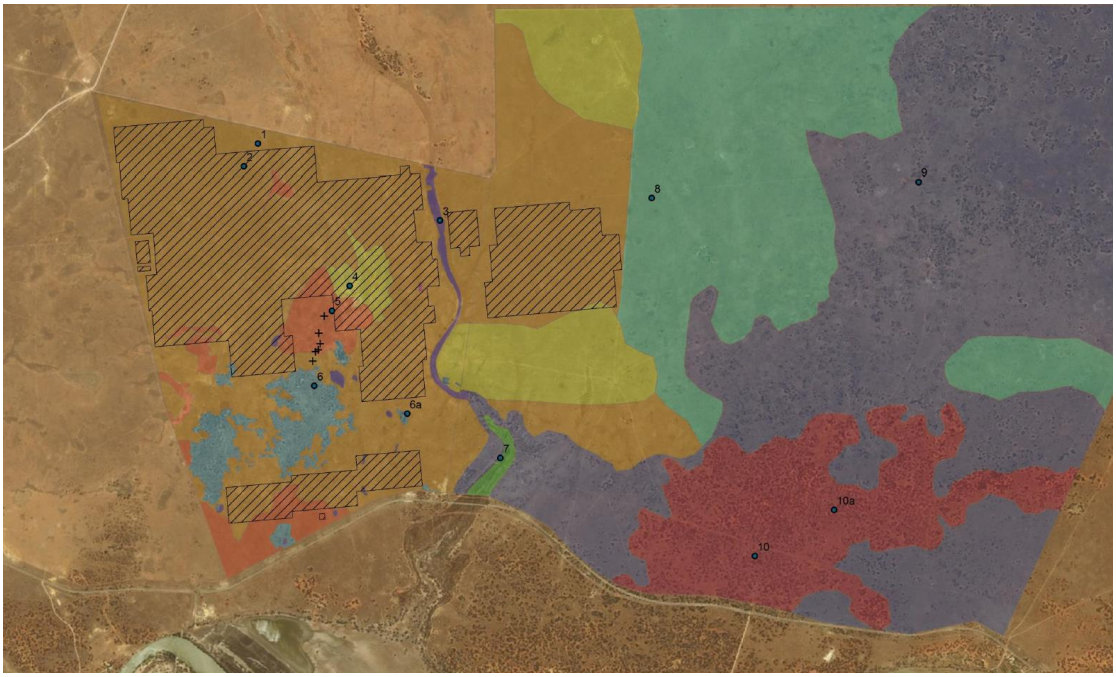

Image 6. *Vegetation communities on the project site (T&M Ecologist ecological assessment)*

7.8 Infrastructure and Renewable Energy Facilities

PO 1.1 Development is located and designed to minimise hazard or nuisance to adjacent development and land uses.

PO 2.1 The visual impact of above-ground infrastructure networks and services (excluding high voltage transmission lines), renewable energy facilities (excluding wind farms), energy storage facilities and ancillary development is minimised from townships, scenic routes and public roads by:

- *(a) Utilising features of the natural landscape to obscure views where practicable.*
- *(b) Siting development below ridgelines where practicable.*
- *(c) Avoiding visually sensitive and significant landscapes*
- *(d) Using material and finishes with low-reflectivity and colours that complement the surroundings*
- *(e) using existing vegetation to screen buildings*
- *(f) incorporating landscaping or landscape mounding around the perimeter of a site and between adjacent allotments accommodating or zoned to primarily accommodate sensitive receivers.*

PO 5.1 Electricity infrastructure is located to minimise visual impacts through techniques including:

- *(a) siting utilises and services:*
  - *(i) on areas already cleared of native vegetation*
  - *(ii) where there is minimal interference or disturbance to exiting native vegetation or biodiversity*
- *(b) grouping utility buildings and structures with non-residential development, where practicable.*

PO 5.3 Battery storage facilities are co-located with substation infrastructure where practicable to minimise the development footprint and reduce environmental impacts.

The original application included an assessment of potential visual impacts which considered the existing environment and adjoining roads to the development.

There are three main locations the project would be visible from. The Goyder Highway (Morgan-Renmark Road) which traverses the southern boundary of the project site. Woods and Forest Road which traverses in a north-easterly direction to the west of the site and principally services the Morgan Gypsum Mine. Views from the nearest town of Cadell was considered and from a number of dwellings along the northern banks of the River Murray. The land is relatively flat other than localised rises.

From the Goyder Highway there will be areas where the southern blocks of panels would be visible. There is vegetation which breaks views of the project along certain sections. Woods and Forest Road is an unsealed road where traffic volume are low and the overall visual impact is considered minor. The project would not be visible from Cadell. Certain elements of the project may be visible from the corner of Smyth Road and River Terrace north of the town.

The southern portion of the site closest to the Goyder Highway and Cadell has the highest visual exposure. Within this portion of the project there are no changes that would create additional visual impacts. The solar arrays remain unchanged in this location. Along the western boundary the orientation of the arrays is augmented to account for the change in location of the substation maintenance and battery buildings. The overall length of solar arrays along the western side remains similar.

None of the changes in the variation are anticipated to increase the visual impact of the proposal. The development accords with PO 1.1 and 2.1.

CONCLUSION

The variation to the approved Solar Farm and BESS is considered acceptable in recognition of the following:

- A grid-scale renewable energy land use was previously approved on the land.
- Renewable energy facilities remain an envisaged land use within the Rural zone under the P&D Code.
- Referrals were undertaken to the Mid Murray Council, the Native Vegetation Council, South Australian Country Fire Service and Commissioner of Highways. No objections were received.
- The variation is acceptable having regards to the provisions of the Infrastructure and Renewable Energy Facilities and Interface between Land Uses – General Development Policies.
- The Significant Environmental Benefit fees will need to be amended. There are no additional impacts on a more sensitive vegetation community.
- There are negligible impacts on adjoining land uses, with separation distances increased to the BESS.
- Fire risks can be adequately managed, noting the general level of bushfire risk.
- The proposal accords the applicable overlays including Hazards (Flooding - Evidence Required), Hazards (Bushfire - General) and Native Vegetation Overlays.

A suitable range of conditions can manage any residual construction impacts, noting that operational conditions will now be managed under the licencing regime of the *Hydrogen and Renewable Energy Act 2023* by the Department for Energy and Mining.

If no further information is required, and all relevant assessment matters have been considered, this planning report can be endorsed by the State Commission Assessment Panel pursuant to Section 131 (14) of the *Planning, Development and Infrastructure Act 2016*, and a formal recommendation with appropriate conditions provided to the Minister for Planning for his further review and decision.