

EPS Energy (sponsored by Department for Energy and Mining)

Robertstown East Solar Project

Junction Road, Lower Bright Road and Pipeline Road, Geranium Plains

Development Application 24019147



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OVERVIEW

DEVELOPMENT NO.	24019147		
APPLICANT	EPS Pty Ltd		
7.1. 7. 2.107.11.11	Sponsored by the Department for Energy and Mining		
CONSENT SOUGHT	Development Approval		
ADDRESS	 LOT 31 JUNCTION RD GERANIUM PLAINS SA 5381 LOT 32 JUNCTION RD GERANIUM PLAINS SA 5381 LOT 30 LOWER BRIGHT RD GERANIUM PLAINS SA 5381 LOT 2 PIPELINE RD GERANIUM PLAINS SA 5381 		
NATURE OF DEVELOPMENT	Robertstown East Solar project comprising: 300MW photovoltaic modules, associated infrastructure and ancillary works (temporary and permanent), and connection to the national electricity grid through either Robertstown Substation or Bundey Substation.		
ZONING INFORMATION	Zone: Rural Overlays: Hazards (Bushfire - Regional) Hazards (Flooding - Evidence Required) Murray-Darling Basin Native Vegetation Water Resources Local Variations (TNV): Minimum Site Area (100 ha)		
LODGEMENT DATE	8 July 2024		
RELEVANT AUTHORITY	Minister for Planning		
PLANNING AND DESIGN CODE	P&D Code Version 2024.12 04/07/2024		
CATEGORY OF DEVLEOPMENT	Crown Development – section 131 (State Agency sponsored development)		
APPEAL RIGHTS	Nil		
NOTIFICATION	Public notification required – Two (2) representors, one wishing to be heard.		
REFERRALS STATUTORY	Regional Council of Goyder Native Vegetation Council		
REFERRALS NON-STATUTORY	Commissioner of Highways South Australian Country Fire Service		
DELEGATION	SCAP (as the delegate of the SPC) to provide advice to the Minister for Planning pursuant to Section 131 (17) of the Planning, Development and Infrastructure Act 2016.		
REPORT AUTHOR	Laura Kerber, Project Lead		



EXECUTIVE SUMMARY

The Robertstown East Solar Project involves the construction of photovoltaic solar modules with maximum capacity of 300MW, associated infrastructure and ancillary works (both temporary and permanent), and connection to the national electricity grid through either Robertstown Substation or Bundey Substation.

The application has been sponsored by the Department for Energy and Mining as 'essential infrastructure' pursuant to Section 131 *Planning, Development and Infrastructure Act 2016.* EPS Pty Ltd is the applicant / lead consultation for the project, and Amp Power Australia is the proponent / developer.

The subject land comprises four (4) parcels and is located immediately adjacent the approved Robertstown Solar & BESS project (DA 422/V005/18), also to be developed by Amp Power Australia. The subject land is within the suburb of Geranium Plains, Regional Council of Goyder.

The sole purpose of the Robertstown East Solar Project is to replace the generating capacity that has been lost on the approved Robertstown Solar & BESS project (DA 422/V005/18) due to geotechnical and ecological constraints.

The development cost of the project exceeds \$10 million and was therefore publicly notified for four (4) weeks between 24 July 2024 and 21 August 2024. Two (2) submissions were received – in opposition of the proposal with one (1) respondent electing to be heard. The applicant has prepared a response to the respondents' concerns.

The proposed clearance of native vegetation was considered by the Native Vegetation Assessment Panel (NVAP) on behalf of the Native Vegetation Council (NVC) on 28 January 2025. The NVAP supports the proposal, with conditions.

The Council and Commissioner of Highways support the development and have requested that a condition of approval for a Traffic Management Plan (TMP) be attached to any decision granted. Infrastructure agreements between Council and the Applicant, and DIT and the Applicant, may be negotiated separately, and the costs of any road upgrades will be borne by the proponent.

SA Country Fire Service (CFS) supports the development, subject to standard requirements with respect to siting, access, vegetation management, water supply and emergency response planning.

The applicant accepts all recommendations made by Council, Commissioner of Highways and CFS.

The Rural Zone of the Planning and Design Code supports the South Australian economy through a range of primary production, forestry and renewable energy activities. The zone envisages renewable energy facilities where they minimise significant fragmentation and displacement of existing primary production. The construction of a solar facility in proximity to the existing state-wide electricity transmission network is consistent with the intent of the zone.

Environmental and social impacts during construction and operation can be appropriately managed through a suite of management plans including a Construction Environmental Management Plan (CEMP), TMP and an Operational Environmental Management Plan (OEMP).

The proposed development is considered to be in accordance with key policies of the Rural Zone, relevant Hazard overlays and Native Vegetation Overlay, and General Development policies relating to siting, design, interface matters, transport and vegetation clearance.

It has been assessed that the proposal is not seriously at variance with the relevant provisions of the Planning and Design Code and warrants the granting of Development Approval, subject to the assignment of relevant conditions to manage external impacts during construction and operation.



ASSESSMENT REPORT

1. BACKGROUND

1.1 Strategic Context

South Australia is a leader in renewable energy, and the South Australian Government continues to prioritise and accelerate investment and policy reform in decarbonised economic development.

The Climate Change and Greenhouse Emissions Reduction Act 2007 sets targets for greenhouse gas emission reduction and renewable electricity. The Act is currently being reviewed, to reflect the SA Government's commitment to achieve at least 50% net emissions reduction on 2005 levels by 2030; net zero greenhouse gas emissions by 2050; and 100% net renewable electricity generation by 2027.

1.2 Project Drivers

On 25 June 2019 the former Minister for Planning, Mr Stephen Knoll approved the Robertstown Solar & BESS project, comprising a 500MW solar farm and 250MW Battery Energy Storage System (BESS) (DA 422/V005/18). The BESS capacity was increased to 500MW through a variation application approved on 14 March 2024 by the delegate of the Minister for Planning.

Post approval, investigations revealed that approximately 200MW of solar generation is unviable for construction due to geotechnical, hydrological and fauna constraints, including the presence of wombats.

To offset the loss of generation potential, additional unconstrained land was identified adjacent the approved development, on which to develop up to 300MW of solar panels. This additional generation project is called "Robertstown Solar East" and is the subject of this planning assessment.

The existing approved Robertstown Solar & BESS project, and the proposed Robertstown Solar East project will be integrated but separately operated, grid connected projects.

The Applicant for both projects is EPS Pty Ltd, on behalf of Amp Power Australia (proponent). Amp Power Australia has applied to the Australian Energy Market Operator (AEMO) to become a Registered Generator in the National Electricity Market (NEM).

Amp Power Australia's South Australian renewable energy portfolio includes the approved Bungama project (7km east of Port Pirie); and the Yoorndoo Ilga project (11km north-east of Whyalla).

1.3 Process

The development was sponsored for the purposes of 'essential infrastructure' by the Department for Energy and Mining on 27 June 2024. An application was lodged with the State Planning Commission (SPC) on 8 July 2024.

As required by regulation 107 of the *Planning, Development and Infrastructure (General) Regulations* 2017, the application was accompanied by a certificate from the Office of the Technical Regulator (OTR) supporting the proposed generator on the condition that the 250MW BESS as part of the approved Robertstown Solar / BESS project (DA 422/V005/18) provides 141.6MW of fast frequency response.

The application has been assessed in accordance with the provisions of Section 131 of the *Planning, Development and Infrastructure Act 2016* including mandatory and informal referrals, and public notification.

A site visit was undertaken by Department for Housing and Urban Development (DHUD) – Planning and Land Use Services (PLUS) staff on Wednesday 23 October 2024.

If a development authorisation is granted for the renewable energy facility, the approval will address the requirements that need to be met by the applicant for the final design and construction phases of the



development. The operational and decommissioning phases of the facility would be managed under the regulatory regime of the *Hydrogen and Renewable Energy Act 2023* administered by the Department for Energy and Mining, in accordance with the transitional provisions of the Act and regulations.

2. DETAILED DESCRIPTION OF PROPOSAL

2.1 Proposal

As illustrated in **Figures 1 and 2**, the proposed development is for construction of a renewable energy facility, comprising the following:

- Solar photovoltaic modules and ground mounted single axis tracking racks:
 - o Installed in parallel rows with spacing 4m to 10m depending on final design.
 - o Maximum height above ground level 2m to 4m depending on final design.
 - Modules will be aligned on the tracking system in a north/south row and rotate in position from east to west.
 - Foundations for the tracking racks may be driven piles, screw piles, or mass concrete, depending on geotechnical conditions.
 - The solar PV arrays are set back 30m from the development site boundary
- Ancillary electrical equipment and transmission lines, including:
 - Power conversion units (inverter stations) to convert energy from Direct Current (DC) to Alternating Current (AC). Step-up transformers are housed within the inverter containers. Indicative height of units = 6m.
 - Underground cables, connecting groups of solar panels to inverter stations.
 - Underground cables or transmission lines connecting each inverter station to the on-site switching yard and/or electrical substation.
 - Connection into the National Electricity Market will be via one of two options as follows:
 - a) Preferred option: to existing SAPN Robertstown substation via the existing project substation for the approved Robertstown Solar & BESS (DA 422/V005/18). A new switchyard within the proposed Robertstown East Solar farm will connect to the approved substation via a 33kV line within a cable corridor (total length 6km to 10km). The connecting transmission lines may be overhead or underground, depending on final design.
 - b) Secondary option: to existing Bundey Substation located at the corner of Sutherlands Road and Powerline Road. For this scenario a new switchyard and on-site substation will be required within the proposed Robertstown East Solar farm. The new on-site substation will connect to Bundey substation via a new 275kV line within a 20m wide cable corridor (total length 3km to 6km). The connecting transmission lines may be overhead or underground, depending on final design. The indicative cable corridor runs from the on-site substation along the northern boundary of the solar farm, then north along Sutherlands Road.
 - Infrastructure upgrades to Bundey substation may be required to facilitate the connection. Works within the existing ElectraNet substation would be excluded from the definition of development pursuant to Schedule 4A of the *Planning, Development and Infrastructure (General) Regulations 2017.*
 - For both scenarios the required on-site electrical infrastructure will be located on Junction Road. Synchronous condensers may be included in the final design.
- Ancillary infrastructure (permanent) including:



- Administration and control area including a control room, site office, amenities, maintenance building, other ancillary buildings, car parking for employees and contractors, laydown / compound area, internal access roads. Indicative height of buildings = 6m.
- Vehicular access points from the road network, internal access roads (minimum 6m wide with a 3m buffer either side),
- Fencing including perimeter fencing indicative height 1.8m chain wire mesh with three strand barb-wire top. Perimeter fencing is set back 10m from the solar PV arrays.
- CCTV with infrared capability and low-level security lighting.
- Lighting protection masts located every third or fourth inverter station, indicative height = 8m.
- Connection to mains water and electricity supply if required; provision of on-site sewage treatment system or installation of holding tanks.
- Landscaping: 10m wide vegetation screen located on the lower western boundary of Lot
 32 to mitigate visual impacts to a dwelling on adjacent allotment.
- Ancillary infrastructure (temporary) including:
 - o Vehicular access points, access roads and car parking areas.
 - Workshops, outbuildings, site office, amenities.
 - Laydown, waste storage and refuelling areas.
 - Clean-down facilities.
 - o Fencing.
- Bulk earthworks (excavation or filling in a designated flood overlay), drainage works and stormwater management systems.

It is noted that adjustments to the project design are expected, subject to the outcomes of ongoing design and engineering, stakeholder engagement and technical studies.

The applicant is seeking four (4) years to substantially commence construction (bulk onsite earthworks) and seven (7) years to complete construction.

2.2 Construction Snapshot

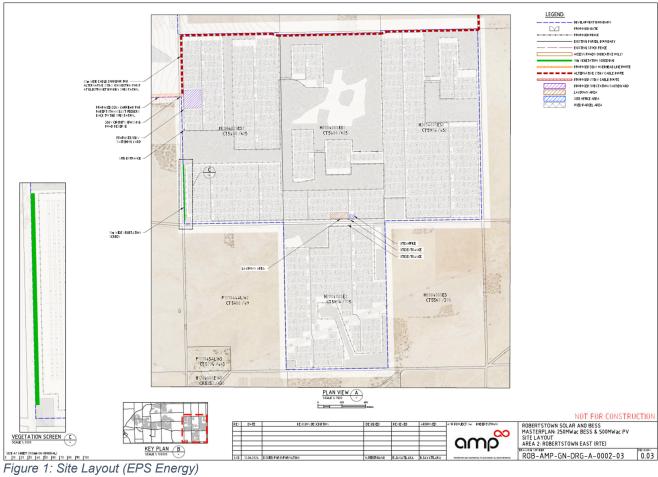
Construction workforce	275 equivalent full-time jobs		
Expected construction hours	7am to 7pm Monday to Saturday for noise generating activities in accordance with SA EPA construction noise advice.		
Environmental management	A suite of Environmental Management Plans, including a Construction Environmental Management Plan (CEMP) will be prepared by contractor.		
Construction traffic management	Scenario 1 (no on-site construction camp): Average 20 light vehicle and 30 heavy vehicle movements per day. Scenario 2: (on-site construction camp as approved for Robertstown Solar & BESS DA 422/V005/18): Average 2 light vehicle and 30 heavy vehicle movements per day. Project specific Traffic Management Plan (TMP) to be prepared in consultation with DIT and Goyder Regional Council.		



Construction staging	duration	and	The approved Robertstown Solar & BESS project (DA 422/V005/18) and proposed Robertstown East Solar project will be delivered as one construction project, with a total estimated duration of 28 months.	
			Sub-stages for the construction of Robertstown East Solar project are proposed: 1. PVS Stage 1: up to approx. 100MW with associated infrastructure 2. PVS Stage 2: up to approx. 100MW with associated infrastructure 3. PVS Stage 3: up to approx. 100MW with associated infrastructure	
			Works which do not require a Building Rules Consent (BRC) will be undertaken as a separate stage. For example: site mobilisation, establishing temporary laydown areas and facilities, access roads, underground cabling works, civil works.	
			Outside of the three main construction stages, BRC may be sought on an individual basis for structures or groups of structures.	

2.3 Operational Snapshot

Operational workforce	10 equivalent full-time jobs	
Expected operating hours	24/7 operation	
Environmental management	A suite of Environmental Management Plans, including a project specific Operational Environmental Management Plan (OEMP) will be prepared by contractor.	
Operational traffic management	Project specific Traffic Management Plan (TMP) to be prepared by contractor.	
Operational duration	30-year operational life. Operational activities may include solar panel washing, equipment maintenance and land management.	



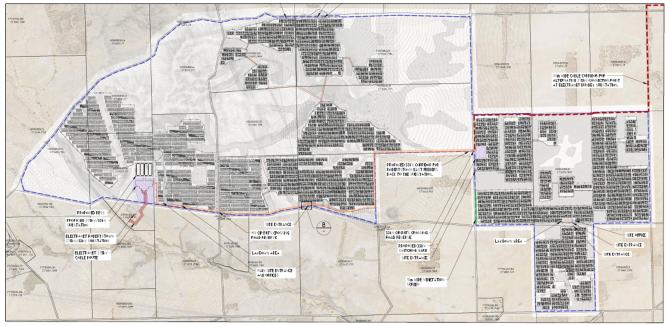


Figure 2: Site layout in relation to approved Robertstown Solar Project (EPS Energy)



3. SITE AND LOCALITY

Location Reference	Plan Parcel	Title	Council
LOT 31 JUNCTION RD GERANIUM PLAINS SA 5381	H200400 SE31	CT 5400/625	Regional Council of Goyder
LOT 32 JUNCTION RD GERANIUM PLAINS SA 5381	H200400 SE32	CT 5400/625	Regional Council of Goyder
957 LOWER BRIGHT RD GERANIUM PLAINS SA 5381	H200400 SE30	CT 5974/451	Regional Council of Goyder
LOT 2 PIPELINE RD GERANIUM PLAINS SA 5381	H200400 SE2	CT 5978/775	Regional Council of Goyder

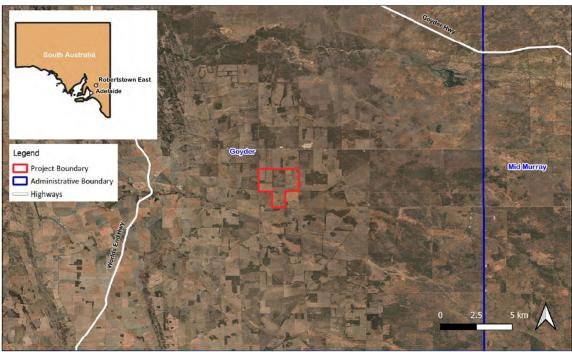


Figure 3: Location (EPS Energy)



Figure 4: Subject Site (EPS Energy)



3.1 Site Description

The subject site is located approximately 10km north-east of Robertstown and 115km north-east of Adelaide. The site covers approximately 630h within the suburb of Geranium Plains. The site is bordered by Junction Road to the west, Sutherlands Road to the east, and Pipeline Road to the south. Lower Bright Road dissects the project site.

All local roads are unsealed with roadside vegetation of varying density and quality. Above ground water pipelines are located either side of Pipeline Road.

The closest arterial road is the Worlds End Highway that connects with Powerline Road / Geranium Plains Road to the west of the site.

The subject site is flat to undulating, with no recorded watercourses. The site has been historically cleared and used for agriculture (cropping and grazing). Approximately 29% of the site is covered with native vegetation. A number of dilapidated buildings, sheds and associated farming equipment are located on the subject site.

The nearest sensitive receiver (dwelling) is located on Lower Bright Road, approximately 1.3km to the west of the subject site. This is a host landowner, associated with the EPS / Amp projects.

The next closest sensitive receivers (dwellings) are located on Geranium Plains Road, approximately 2.4km and 3km west of the south-west corner of the subject site. A fourth sensitive receiver (dwelling) is located approximately 2.4m south of the south-west corner of the subject site.

The development footprint occupies approximately 420ha of the 630ha subject site.



Figure 5: Street view into subject site (EPS Energy)



3.2 Locality

The subject site is within the Goyder Regional Council area which covers 6718.9km2 of the mid north region of South Australia. The Council area has an estimated resident population of 4132 (2023).

The main industry of employment in the region is agriculture, primarily cereal crops, as well as sheep grazing. The locality is east of Goyder's line and is therefore a semi-arid climate, highly influenced by rainfall.

The region provides a significant energy resource (wind and solar) with numerous renewable energy projects at varying stages of approval, development and operation. A small solar farm is located adjacent the south-east corner of the project site, at SA Water's Morgan Whyalla pump station.

Existing utility-scale electricity infrastructure includes SA Water's substation at the Morgan Whyalla pump station; ElectraNet's Robertstown substation approx. 5.4km to the west; Bundey substation approx. 1.6km to the north-east; and the SA-NSW Interconnector. Low voltage transmission lines traverse the landscape, including through the subject site.

The locality is predominantly cleared for agricultural purposes; however pockets of vegetation are scattered throughout the locality, along with roadside vegetation. Scattered dwellings and structures are located throughout pastoral holdings.

There are no conservation lands in the locality, the closest being Mimbara Conservation Park, some 10km to the north-east.



Figure 6: Drone view at 100m of subject site (EPS Energy)



4. CATEGORY OF DEVELOPMENT

PER ELEMENT:

Essential Infrastructure - Performance Assessed - Crown

OVERALL APPLICATION CATEGORY:

Crown Development

REASON

Pursuant to section 131 of the Act, Crown sponsorship by the Department for Energy and Mining (sponsorship letter with conditions provided at Attachment 1A).

5. DECLARATIONS

Regulated / Significant tree impacts:	YES □ NO □ N/A ⊠	Outside of regulated / significant tree overlay.
Easements or Encumbrances:	YES □ NO ⋈ N/A □	Nil.
State or local heritage:	YES □ NO □ N/A ⊠	NA.
Electricity Declaration Form:	YES ⊠ NO □ N/A □	Certificate from Office of the Technical Regulator provided on lodgment.
Native Vegetation Declaration Form:	YES ⊠ NO □ N/A □	Data report prepared in response to RFI from Native Vegetation Council.

6. STATUTORY REFERRAL BODY COMMENTS

6.1 Regional Council of Goyder

The application was referred to the Council for comment in accordance with Regulation 107(4) of the *Planning, Development and Infrastructure (General) Regulations 2017* (the Regulations).

A copy of the referral response is contained in Attachment 3A.

The Applicant has been in direct contact with Council to discuss local roads and access requirements for the project. Council is likely to require an infrastructure agreement, which will be negotiated outside of the development assessment process.

Council has requested a condition of approval for preparation of a Traffic Management Plan (TMP) in consultation with Council.

Applicant Response

The Council comments align with EPS Energy's direct discussions with Council.

6.2 Native Vegetation Council (NVC)

This application was referred to NVC in accordance with s.131(10) of the Act and r.107(5) and Schedule 9 Clause 3 Part A(11) of the PDI (General) Regulations.

In accordance with s.131(11) of the Act, the NVC issued a request for further information. The desktop native vegetation assessment report lodged with the application does not meet NVC data report requirements. NVC requested that a data report be prepared in accordance with Regulation 18(2)(a) of the *Native Vegetation Regulations 2017*.

A data report was subsequently submitted by the Applicant and reviewed by the Native Vegetation Assessment Panel (NVAP) on behalf of NVC at its 28 January 2025 meeting. The NVAP does not object to the proposal and recommended four (4) conditions and one (1) advisory note.

Applicant Response: N/A



7. INFORMAL / TECHNICAL REFERRAL BODY COMMENTS

7.1 Commissioner of Highways (CoH)

This application was referred to the CoH for technical advice as the proposed development utilises the State-maintained road network as the main transport route to/from the site.

The CoH notes that upgrades to the Worlds End Highway / Pipeline Road intersection may be required to facilitate B-Double manoeuvres. Any necessary arterial roads upgrades must be undertaken to DIT requirements with all costs borne by the applicant.

The potential construction traffic volumes are yet to be determined, as the traffic report presents two (2) scenarios:

- 1. All movements travel to/from the development site each day; and
- 2. Provision of a construction camp (part of approved Robertstown Solar & BESS DA 422/V005/18).

The CoH supports the development on the condition that a TMP be prepared in consultation with Council and DIT, which reflects the final scenario with respect to construction traffic. The Applicant will also need to undertake a route assessment for over mass and oversized vehicles and obtain all required permits from the National Heavy Vehicle Regulator. A total of five (5) conditions and two (2) advisory notes are recommended.

A copy of the referral response is contained at in Attachment 3B. CoH's referral comments are discussed further in the assessment of the application.

Applicant Response

EPS Energy has reviewed the advice from the Commissioner of Highways and confirm that Amp has no concerns with the consideration and advice.

7.2 South Australian Country Fire Service (CFS)

This application was referred to the SA CFS as the proposed development is located within the Hazards Overlay (Bushfire - Regional). Utility scale renewable energy projects assessed under the Crown s.131 pathway are routinely referred to CFS for comment.

The CFS supports the development and has no direct concerns with the proposal.

The CFS notes that the current site layout does not meet CFS requirements with respect to the establishment and maintenance of an Asset Protection Zone (APZ) round all infrastructure.

Standard requirements were also provided with respect to access / egress, vegetation management, water supply, emergency response planning, and building considerations.

A copy of the referral response is contained in Attachment 3C. CFS's referral comments are discussed further in the assessment of the application.

Applicant Response

EPS Energy has reviewed the advice from CFS and confirm that Amp has no concerns with the recommendations and advice regarding APZs and road/access details for the design, water supply requirements and emergency planning with CFS.



8. PUBLIC NOTIFICATION

8.1 Reason

Pursuant to s.131(13) of the Act, a Crown development application where the total construction cost exceeds \$10 million must undertake public notification.

The application was notified for 20 business days between 24 July 2024 and 21 August 2024 with a public advertisement in the Adelaide Advertiser and Plains Producer, and physical signs erected on the subject land at the Junction Road, Sutherlands Road, Pipeline Road, and Lower Bright Road frontages.

The applicant provided photographic evidence of placement of the signs of the land at the commencement of the public notification period.

At the conclusion of the period, the Applicant discovered that the sign on Junction Road was missing. It was last sighted by the Applicant on Friday 9 August 2024. The remaining three (3) signs were in place throughout the notification period, with photographic evidence provided. Advice was sought from the legislation team, DHUD, regarding the validity of the public notification process. Whilst signs were not in place on all road frontages for the duration of the public notification period, as required by Practice Direction 13, it was determined that there was no reason to undertaken further action and the application can proceed to determination.

Application details were displayed on PlanSA's online planning portal and at the principal office of DHUD-PLUS.

8.2 Representations and Applicant Response

Two (2) representations were submitted during the public notification period.

The representations were submitted by interstate residents:

- 1. Ian McDonald (Walcha, NSW): opposed to the development, does not wish to be heard
- 2. Lynette LaBlack (Lake Albert, NSW): opposed to the development, wishes to be heard

A copy of the representations and applicant's response is provided in Attachment 4A and Attachment 4B and summarised below.

Representation Comments #1 Submission #1 included the on-line form and three attachments citing opposition to solar farms, BESS development and high voltage transmission lines. Opposed to solar farms: Contamination of waterways, soil and waste management. Public liability concerns with fire risk. Opposed to BESS developments: Environmental impact from trace elements required for battery manufacture. Support for electricity generated by anthracite, nuclear and natural gas fuelled power stations. Security risks with sourcing batteries made in factories controlled by China. Opposed to high voltage transmission lines: No proof that regional interconnectors will solve the basic flaw of wind and solar generated electricity that is weather dependent. Power lines are susceptible to faults and blowing over in severe weather. Impact on the rural landscape, natural farmland and valuable farmland.



Representation Comments

#2 Submission #2 included the on-line form and a range of emails, articles and photos from various sources.

General concern / opposition to renewable energy development:

- Unreliability.
- Environmental, social and visual impacts.
- Impact on agricultural land including contamination and heat island effect.
- Promotion of slave labour chains.
- Security risks with componentry being manufactured in China and remotely controlled.
- Support for coal power stations and nuclear power.
- Affiliation with the 'National Rational Energy Network' (<u>www.nren.com.au</u>) NSW based, grassroots national network.

Concerns of project:

- Contamination risks.
- Fire risk.
- Does not protect food production.
- Embedded Greenhouse Gas emissions due to embedded energy in solar / BESS infrastructure.
- No social licence.

Applicant Response

- The submissions are from people based on NSW and refer to NSW legislation and case studies.
- The submissions object to renewable energy in general, rather than specific concerns about the proposed project.
- The project is consistent with current State (SA) and Federal government policy. The development of low emission coal power stations are not part of the current State and Federal government energy policies.
- The development assessment process considers land use, environmental, social and cultural impacts. The application identifies potential impacts and identifies mitigation measures. The application demonstrates that the project will not result in significant environmental impacts; is suitable at the proposed site; and is in the public interest.
- No objection from the community was received during the public notification period.
- On-ground consultation was held (by the Applicant) on 1 August 2024 at the Robertstown Peace Hall between 10am – 2pm followed by consultation with Goyder Council representatives including the Mayor and senior managers. Overall, the attendees and Council were supportive of the project.

9. POLICY OVERVIEW

9.1 Mid North Regional Plan (2011)

The subject site is within the Yorke Peninsula and Mid North regional planning area. As required by s64(1) of the PDI Act, the State Planning Commission has initiated the process to prepare a new regional plan.

The current policy framework relevant for the subject site is the Mid North Regional Plan (2011).

The plan encourages the development of alternative and innovative energy generation in appropriate locations, to build the regional economy and increase resilience to the impacts of climate change. At the time the plan was prepared, the first wind farms were being built in the region at Hallet and Snowtown.

Specific policies relating to renewable energy development are:



- 4: Provide for the development of alternative and innovative energy generation (for example, wind, solar, marine, biomass and geothermal technologies) and water supply facilities, as well as guidance on environmental assessment requirements.
- 5.7: Identify land suitable to accommodate renewable energy development, such as wind farms.
- 6.12: Support the development of wind farms in appropriate locations, including the collocation of wind farms and existing agricultural land.

In terms of land biodiversity, the plan seeks the retention and management of native vegetation on private land, to reverse the negative effects of grazing and other human activities.

9.2 State Planning Policies (SPP)

State Planning Policies relevant to the assessment of the Robertstown Solar East project are:

SPP 4 Biodiversity seeks to maintain and enhance South Australia's biodiversity and life supporting functions.

 Policy 4.5 where impacts to biodiversity cannot be avoided, these impacts should be minimised and where possible, offset.

SPP 5 *Climate Change* provides for development that is climate ready so that our economy, communities and environment will be resilient to climate change impacts.

 Policy 5.6 Facilitate green technologies and industries that reduce reliance on carbon-based energy supplies and directly or indirectly reduce our greenhouse gas emissions.

SPP 8 *Primary Industry* seeks a diverse and dynamic primary industry sector making the best use of natural and human assets.

 Policy 8.4 Equitably manage the interface between primary production and other land use types, especially at the edge of urban areas.

SPP 9 *Employment Lands* seeks the provision of a sufficient supply of land for employment uses to support job growth and the economic prosperity.

 Policy 9.1 supports the expansion and clustering of key economic growth area, including defence. Policy 9.6 seeks for employment lands to be located in strategic locations that improve economic productivity, connect to efficient supply chains, and provide transport access and connectivity.

SPP 10 *Mineral and Energy Resources* seeks to protect key resources that contribute to our state's economy and provide valued employment opportunities.

- 10.2 Plan for and encourage the development of energy resources, energy resources operations and associated infrastructure to ensure their ongoing safe and efficient operation.
- 10.3 Identify and maintain key infrastructure that supports mineral and energy resource activities and supply chains, including strategic transport corridors and pipelines used for energy transportation.
- 10.5 Promote decision making that maximises the long term benefits of different land uses to the economy, communities and the environment.

SPP 11: Strategic Transport Infrastructure seeks to integrate land use policies with existing and future transport infrastructure, services and functions to preserve and enhance safe, efficient and reliable connectivity for people and business.

Policy 11.4 Minimise negative transport-related impacts on communities and the environment.



SPP 12: *Energy* supports the ongoing provision of sustainable, reliable and affordable energy options that meet the needs of the community, business and industry

- 12.1 Development of energy assets and infrastructure (including ancillary facilities) where the impact on surrounding land uses, regional communities and the natural and built environment can be minimised.
- 12.2 Facilitate renewable sources of energy supply, such as solar and wind, at the local level.
- 12.6 Facilitate energy technologies that support a stable energy market and continued energy supply and do not adversely affect the amenity of regional communities.

9.3 Zoning

The subject site is located within the Rural Zone of the Planning and Design Code (the Code) at the time of start of assessment being version 2024.12 (4 July 2024). Relevant Code policies are contained in Appendix 1A and 1B and are summarised below.

The subject is located within the Rural Zone, which supports the economic prosperity of the state through primary industries, value-adding industries, and the generation of energy from renewable sources. A renewable energy facility is specifically envisaged in the zone. Renewable energy facilities (and ancillary development) should be sited to minimise significant fragmentation or displacement of existing primary production.



Figure 7: Zoning

9.4 Overlays

The following Overlays and local variations apply to the subject site:

Overlays:

- Hazards (Bushfire Regional)
- Hazards (Flooding Evidence Required)
- Native Vegetation
- Water Resources



Murray-Darling Basin (not relevant to this assessment)

Local Variation (TNV):

Minimum Site Area (Minimum site area is 100 ha) (not relevant to this assessment)

9.4.1 Hazards (Bushfire - Regional) Overlay

Development should be sited and designed to mitigate the threat and impact of bushfires on life and property. Access for emergency services should be provided to aid the protection of lives and assets.

9.4.2 Hazards (Flooding - Evidence Required) Overlay

Development should adopt a precautionary approach to mitigate potential impacts on people, property, infrastructure and the environment from potential flood risk through the appropriate siting and design of development.

9.4.3 Native Vegetation Overlay

Areas of native vegetation are protected, retained and restored in order to sustain biodiversity, threatened species and vegetation communities, fauna habitat, ecosystem services, carbon storage and amenity values

9.4.4 Water Resources Overlay

Protection of the quality of surface waters considering adverse water quality impacts associated with projected reductions in rainfall and warmer air temperatures as a result of climate change.

9.5 General Development Policies

The following General Development Policies (GDPs) are particularly relevant for this development.

9.5.1 Design

These policies aim to ensure development is contextual, durable, inclusive and sustainable by:

- Incorporating landscaping and tree planting to minimise heat effects, maximise shade and shelter, maximise stormwater infiltration and enhance amenity and biodiversity (PO3.1)
- Using locally indigenous species best suited to the climate conditions in soft landscaping and tree planting, and avoids pest plant and weed species (PO3.2)
- Siting development to maintain natural hydrological systems (PO5.1).

9.5.2 Infrastructure and Renewable Energy Facilities

These policies aim to ensure the development of infrastructure networks and renewable energy facilities in a manner that minimise hazards, and minimises environmental, cultural, visual and amenity impacts (DO1), including by:

- Siting of renewable energy facilities as close as possible to existing transmission infrastructure to minimise impacts associated with new / extended transmission infrastructure (PO7.1)
- Siting of development to minimise visual /amenity impact using various techniques including adequate separation from conservation areas and sensitive receivers; use of natural landscape features; clustering of non-residential structures; and incorporation of landscaping / vegetation buffers where appropriate (PO2.1, 2.2, 9.3, 9.4).
- Facilities should be sited on areas already cleared of native vegetation, or where there is minimal disturbance to biodiversity (PO5.1). Areas of high environmental, cultural and scenic value should be avoided (PO9.1).
- Location of design of facilities to minimise hazards associated with bushfire, air transport, and public safety (PO4.1, 4.2, 4.3, 9.4).
- Disturbed surfaces should be reinstated and revegetated following construction (PO2.3).



 Temporary construction activities should be sired and operated to minimise environmental impact, including waste management (PO13.1, 13.2).

9.5.3 Interface between Land Uses

Development should be located and designed to mitigate adverse effects on or from neighbouring and proximate land uses (DO1), including by:

- Development adjacent sensitive receivers should be designed to minimise adverse impacts (PO1.2)
- Ensuring external lighting is positioned and designed to not cause unreasonable light spill impact on adjacent sensitive receivers (or lawfully approved sensitive receivers) (PO6.1).
- Development is designed using materials and finishes that minimise solar glare (PO7.1).

9.5.4 Transport, Access and Parking

Development should support a safe, sustainable, efficient, convenient, accessible and connected transport system (DO1) by:

- Ensuring integrated with the existing transport system and designed to minimise its potential impact on the functional performance of the transport system (PO1.1).
- Sightlines at intersections, pedestrian and cycle crossings are maintained or enhanced to ensure safety for all road users and pedestrians (PO2.1).
- Ensuring access points are designed to accommodate the projected type and volume of traffic generated by the development or land use (PO3.3) and minimise impacts on neighbouring properties (PO3.4).

10. PLANNING ASSESSMENT

In accordance with the Crown assessment pathway, the application has been assessed against the relevant provisions of the Code, which are contained in Appendix 1, and other planning instruments where relevant.

10.1 Land Use

The proposed development is for a 'renewable energy facility', which is defined in the Code as:

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:

- 1. any associated facility for the storage and/or transmission of the generated electricity;
- 2. any building or structure used in connection with the generation of electricity.

The development site is within the Rural Zone, which anticipates a range of primary production activities and the generation of energy from renewable sources (DO1). A renewable energy facility is specifically envisaged in the zone (PO1.1), where they can take advantage of natural energy sources.

The Zone seeks to protect and maintain the productive value of rural land (PO1.1), with renewable energy facilities and ancillary development sited to minimise significant fragmentation or displacement of existing primary production (PO9.1).

The proposed development is located on private landholdings, with a history of agricultural production (cropping and grazing). The overall project site covers 620ha, with the development footprint covering approx. 420ha (4.2km2). The change of land use from primary production to renewable energy facility is not considered 'significant' displacement of the existing land use, noting the Goyder Council area covers 6,718.9 km2.

The co-location of the Robertstown East Solar project adjacent the approved Robertstown Solar / BESS project reduces the cumulative fragmentation of existing primary production land in the locality.



There are examples of solar farms co-existing with forms of primary production under controlled conditions. For example, the operational Tailem Bend Solar Farm is currently being used for sheep grazing by the landowner. The benefits can be mutual, with the sheep reducing fuel loads around the panels (reducing the need for slashing etc), whilst the panels offer shade and protection to livestock.

Following project decommissioning, there is scope for the infrastructure to be removed, and the land returned to its existing land use.

The development site has direct frontage to multiple public local roads, connecting into the state's arterial road network at Worlds End Highway (PO2.1). Upgrades and/or remediation may be required to the local roads, and the intersection with Worlds End Highway to make the route suitable for the expected traffic movements (type and volume) during construction phase. Traffic, access and parking arrangements are discussed in section 10.6.

10.2 Cumulative Land Use Impacts

The proposed development is located in an area that hosts major electricity transmission and distribution infrastructure. The proliferation of electricity infrastructure is evident to the east of Worlds End Highway, extending along Powerline Road and Lower Bright Road. Here, the newly constructed SA/NSW Interconnector is a prominent feature in the landscape, along with the Robertstown substation, and numerous other overhead transmission lines (Figures 8&9). Further east along Powerline Road is the new Bundey substation (Figure 10).



Figure 8:: Existing electricity trnamission infrastructure - photo taken 23 October 2024



Figure 9: Existing electricity trnamission infrastructure - photo taken 23 October 2024



Figure 10: Bundey Substation – photo taken 23 October 2024

There are several approved and/or proposed renewable energy facilities in the locality, which will necessitate associated electricity infrastructure to connect into the national electricity grid at either Robertstown or Bundey stations. These connections may be underground or overhead, subject to final design.



Of greatest relevance to this assessment is Genaspi Energy's proposal for a 425MW solar farm (DA 24019607 under assessment) and an 800MW BESS facility (exempt) located along Powerline Road and connecting into Bundey substation. Genapsi Energy's project footprint directly abuts the proposed Robertstown East Solar Farm halfway along Sutherlands Road, and the approved Robertstown Solar Farm / BESS project along Powerline Road. Figure 11.

The potential cumulative impacts for the locality, should all prospective and approved projects be built, are considered below, along with mitigation measures and relevant code policy.

Potential Impact	Mitigating Factors
Visual and landscape impacts from the solar farms and associated connection infrastructure	The local topography and existing vegetation will influence the viewsheds associated with each development. There is no vantage point where <u>all</u> renewable energy facilities and electricity infrastructure can be viewed. Visual impacts will vary depending on the viewpoint.
	The locality is not visible from Robertstown, or other residential zoned areas. There are few residential receptors in the locality and the surrounding local roads have low traffic volumes. The land is flat to slightly undulating landscape with patches/bands of vegetation. Solar panels are a low-profile form that follow the local topography.
	The connecting electricity infrastructure for renewable energy facilities can be a visually dominant feature in the landscape. Impact is somewhat mitigated by proximity to ElectraNet substations and the option for underground transmission lines.
	The code encourages renewable energy facilities in the Rural Zone, therefore anticipates this form of development as part of the envisaged character for regional South Australia.
	Refer to Section 10.4 for further discussion.
Use of agricultural land.	The locality is east of Goyder's line and highly influenced by rainfall. The clustering of renewable energy facilities reduces large-scale fragmentation of agricultural land.
	Opportunity exists for renewable energy facilities to co-exist with some forms of agriculture, and for the land to be returned to agricultural use after decommissioning.
	Refer to Section 10.1 for further discussion.
Loss of vegetation and biodiversity and interruption to wildlife corridors, through vegetation clearance, introduction of built form / structures, and fencing around the facilities.	The layout of the EPS / Amp and Genaspi solar farms retain patches of remnant native vegetation, however clearance is still required. The introduction of fences can impede movement of wildlife, particularly larger animals.
and ferfoling around the facilities.	Construction may impact fauna species and habitat including sleepy lizards and wombats which are common in the locality.
	Refer to Section 10.10 for further discussion.
Bushfire risk, albeit more likely from fire entering the solar farm sites, and	The final layout of the EPS / Amp projects will meet CFS requirements.
potential challenges in accessing the site in the event of fire.	In the event of a fire passing through an area the fenced solar farm facilities may impede access for firefighters.
	Refer to Section 10.9.2 for further discussion.
Heat island effect.	The code requires solar farm infrastructure to be set back 30m from property boundaries. This provision may mitigate heat island effect, which studies have shown to be a localised effect, dissipating within close proximity to the solar field.



	Refer to Section 10.8.2 for further discussion.
Construction impacts, if construction periods from the various developments overlap, including dust, increased heavy vehicle movements,	The EPS / Amp projects will be constructed together through a coordinated, staged program. Overlap with the Genaspi project will depend on project timelines.
impact on local roads, general amenity and nuisance to local residents.	The heavy vehicle haulage routes for the projects are different east of Worlds End Highway: Lower Bright Road for EPS / Amp Energy vs Powerline Road for Genaspi.
	Refer to Sections 10.6 and 10.8 for further discussion.



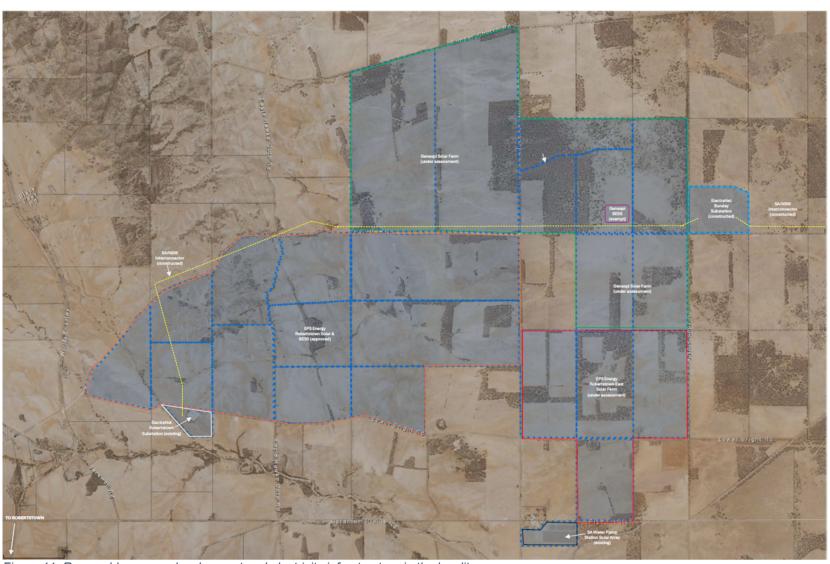


Figure 11: Renewable energy development and electricity infrastructure in the locality



10.3 Design and Appearance

The built form elements of the project are typical of a utility scale solar farm / renewable energy facility. Example images of a solar and ancillary infrastructure are provided in Figure 12.

The solar modules will be arranged in a lineal pattern with consistent spacing, height and physical form. The control room, switchroom, and workshop buildings will be clustered together, approximately 6m in height, and constructed with colorbond cladding or similar. Switch rooms are typically elevated above ground level to accommodate electrical connections.

The onsite switchyard and substation (if required) will comprise electrical componentry and be fenced for safety and security purposes. The tallest elements of the project are expected to be within the substation, as well as the lighting protection masts located around the solar farm (8m).

New electricity transmission lines will be required to connect the development to the National Electricity Market, via either Bundey or Robertstown substations. The application seeks flexibility with respect to the final route, and these connections being via overhead or underground transmission lines.



Figure 12a: Example solar modules (Tailem Bend Solar, Vena Energy)



Figure 12b: Example inverter



Figure 12c: Example switchroom



Figure 12d: Example control room



Figure 12e: Example substation



Renewable energy facilities are envisaged in the mid north region of South Australian and are part of the desired character for the Rural Zone.

The Rural Zone and the GDPs for Infrastructure and Renewable Energy Facilities provide guidance around site selection and project design, to minimise visual impacts on the landscape and sensitive receivers.

10.4 Visual Impact

The Code seeks to reduce impacts on natural and rural vistas, scenic routes and public routes, and from townships (PO10.1 – Rural Zone; PO2.1 – Infrastructure & Renewable Infrastructure Facilities). The site is not within an area of high cultural or scenic value, nor is it visible from any key scenic or tourist routes.

The project is generally consistent with the relevant policies by being in a sparsely populated, rural area with few sensitive receivers, and a generous distance from the nearest township of Robertstown.

The subject site is located close to existing transmission infrastructure (Robertstown and Bundey substations) in accordance with PO 7.1 (Infrastructure & Renewable Infrastructure Facilities) to minimise the visual impact of extending overhead transmission lines. Notwithstanding, and depending on the final design option, new overhead transmission lines may be required that extend through the project area and along Lower Bright Road to Robertstown substation, or along Sutherlands Road to Bundey Station.

The subject site is relatively flat land, and the development is not on a ridgeline. Substantial cut and fill is therefore not required.

The indicative project layout complies with the minimum setback requirements for solar power facilities provided in the Infrastructure and Renewable Energy Facilities GDPs (PO9.3):

	Code requirement	Project proposal	Compliant
Setback from adjoining land boundary	30m	30m	Yes
Setback from conservation areas	500m	10km to NE (Mimbara Conservation Park)	Yes
Setback from township, rural settlements, rural neighborhood and rural living zones	2km	10km to SW (Robertstown)	Yes

The Applicant prepared a visual impact assessment, using industry standard guidelines from interstate and national sources, considering a 1km and 2km visual catchment around the development site. Key findings of the assessment are:

- The project will impact the landform, but not the topography of the land (ie minimal cut and fill).
- The project will introduce new texture and colour to the locality, albeit evident elsewhere in the region in the form of sheds, silos, electrical infrastructure (substations and transmission lines).
- The development cannot be viewed in its entirely from one single viewpoint.
- A viewshed analysis was undertaken for the four (4) closest sensitive receivers (dwellings) to the development. Only House 1 (host landowner) is considered to have any visibility from the project. Views from Houses 2, 3 & 4 are distorted or screened by local topography. The analysis does not consider screening from existing vegetation, which would further reduce visibility of the project.
- House 1 has prominent views over the development site, approximately 1.3km away, however direct views are reduced by mature vegetation located around the dwelling. New landscaping is proposed along a portion of the western development site boundary (north of Lower Bright Road) to provide additional visual screening for House 1.
- A further four (4) sensitive receivers within a 5km buffer area were considered in the assessment. The 'significance of effect' for all other sensitive receivers apart from House 1 (Houses 2-8) is assessed is Low.



 Sections of Lower Bright Road, Junction Road and Sutherlands Road have prominent views of the development. Vegetation on the roadside and within the project area may offer some screening. The 'significance of effect' for all roads is assessed as Low except for Lower Bright Road.

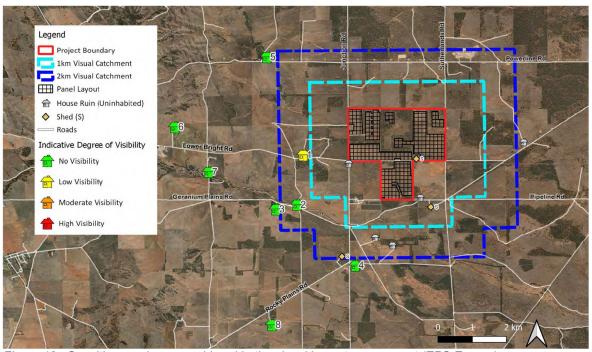


Figure 13: Sensitive receivers considered in the visual impact assessment (EPS Energy)

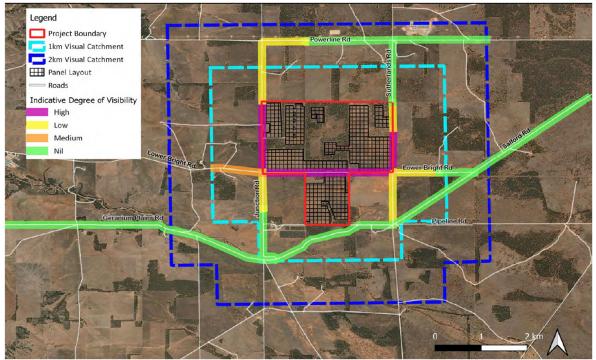


Figure 14: Visbility from public road (EPS Energy)



10.5 Glint and Glare

Buildings and structures should be designed using low-reflective materials and finishes that blend with the surrounding landscape (PO10.1b – Rural Zone; PO7.1 – Infrastructure & Renewable Energy Facilities).

Solar panels are designed to absorb as much light as possible and minimise reflection. The amount of reflection from the panel surface depends on 1) the angle at which the solar ray hits the panel and 2) the amount of refraction from the panel surface (impacted by surface texture).

Glare from solar panels has the potential to impact on motorists, pedestrians, sensitive receivers (dwellings) and airfields / air traffic. There are no registered airfields within the locality, therefore potential glare to aviation traffic does not require assessment.

A Glint and Glare Assessment prepared by SLR Consulting considers potential glare from the proposed development to motorists, pedestrians and sensitive receivers.

With respect to the extent of glare from solar panels, the assessment explains:

- When a solar ray strikes the solar panel perpendicular, reflection is minimum (less than 5%).
- Where the incidence angle is high (ie light hitting the panel almost parallel to the panel), the level of reflection is higher. An incidence angle of 0 is also called 'rest angle' as the panels are resting in a parallel manner, with minimal solar absorption.

In this situation, the observer (pedestrian, motorist etc) would perceive the reflections as coming from the same direction as the incoming solar rays. The incoming solar rays would dominate the observer's vision, such that the panel reflection does not intensify the impact, the therefore not considered a 'glare' impact.

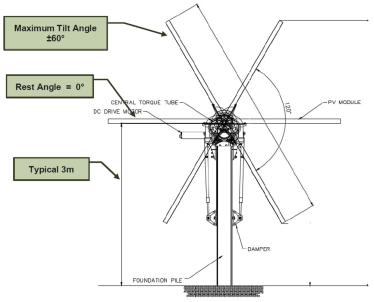


Figure 15: Single-axis tracking system (SLR Consulting)

The level of reflection / glare varies throughout the day and the year, depending on the sun's position, and is influenced by weather, terrain and topography.

SLR undertook modelling in stages, to consider potential glare from the solar farm, with areas divided into sub-array sections.



- The first round considered impact on public roads and sensitive receivers (dwellings) in the locality, based on a worst-case scenario (ie assuming clear skies, and no allowance for vegetation or topographic screening). The results predicted potential glare from sections of panels for surrounding roads and dwellings.
- The second round of modelling considered existing local terrain / vegetation / topography which would block potential reflection. The results predicted no glare to dwellings, and potential glare for Lower Bright Road and Junction Road from sub-arrays 1, 6, 8 and 9.
- When factoring the incidence angle, as described above, the reflection viewed from Lower Bright Road from sub-arrays 6 and 9 would not be considered a 'glare' impact.

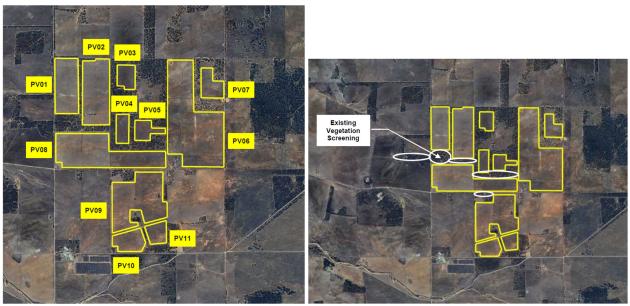


Figure 16: Sub-arrays considered in glare assessment, and existing vegetation screening (SLR Consulting)

The assessment identified residual glare impacts to Lower Bright Road from sub-array 8 and Junction Road from sub-arrays 1 and 8. Mitigation measures for glare may include:

- Curtailment of Rest Angle: adjust to 5 or 10 degrees. Adjusting the rest angle to 10 degrees eliminates potential glare for sub-array 1 but remains for sub-array 8.
- Provision of vegetation screening: inclusion of a vertical screen along the south and west perimeter of sub-array 8 would eliminate potential glare from sub-array 8.

The height and density of vegetation screening used in the model (in order to mitigate glare impact) is unknown. The proposed site layout plan for the project includes perimeter vegetation screening along the western side of sub-array 8 (distance of approximately 600m), but not along the southern side of sub-array 8.

Assuming the Applicant adopts the curtailment of Rest Angle as recommended in the report, and establishes a suitable vegetation screening along the western side of sub-array 8 as proposed in the site layout plans, this would result in a residual (unmitigated) potential glare impact (from sub-array 8) for motorists using Lower Bright Road.

The Applicant has advised that the glare impact will be reassessed at detailed design stage, and will include consideration of local factors such as traffic frequency and fields of vision. This secondary assessment will inform the type and extent of required mitigation for glare impacts, and the final design of any vegetation screening.



It is therefore recommended that a condition be attached to any approval, requiring the provision of a final glint and glare assessment, and inclusion of recommended mitigation measures into the final design of the development.

10.6 Transport Impacts and Network Integration

The Code provisions set out in the Transport, Access and Parking module and the Major Urban Transport Routes Overlay seek to ensure that development is integrated within the existing transport system and minimises network impacts.

A traffic impact assessment has been prepared by Stantec which considers access, traffic generation and network impacts associated with the approved Robertstown Solar & BESS project and the proposed Robertstown Solar East project. The combined construction period for both projects is 28 months, and construction will be staged. The assessment undertaken by Stantec, and discussed herein, considers the two EPS / Amp projects as a combined, whole development.

10.6.1 Access

The Robertstown Solar East project has road frontages to Pipeline Road, Lower Bright Road, Junction Road and Sutherlands Road, all of which are unsealed local roads under Council care and control. Proposed vehicular access is from Lower Bright Road (adjacent the site office and laydown area) and Junction Road (adjacent the switchyard / substation).

During construction, heavy vehicles will access the site subject from Port Adelaide via National Highway A9, A1, the Thiele Highway, Worlds End Highway, turning right onto Powerline Road, and right onto Lower Bright Road. Access to the Robertstown Solar East Project will then be split, with vehicles either continuing east along Lower Bright Road (to the site office / laydown area) or turning left and travelling north on Junction Road to the switchyard/substation). The largest vehicles to access the site will be 26m B-Doubles and a small number of oversized vehicles.

Stantec has considered the key intersections that will need to accommodate B-Double turn paths:

- Worlds End Highway / Powerline Road (unsignalised): when a B-Double exits Powerline Road onto Worlds End Highway, the vehicle will occupy the whole width of Powerline Road. This will prevent simultaneous two-way movements; and vehicles waiting to turn into Powerline Road will need to store on the highway until the B-Double has completed the manoeuvre. Stantec considers this outcome acceptable, due to the low volume of traffic on Worlds End Highway. Upgrades not required to the intersection to accommodate heavy vehicle turn paths.
- Powerline Road / Lower Bright Road (unsignalised): B-Doubles can turn within the existing intersection footprint, however the centreline will be crossed. Stantec does not consider this high risk due to adequate sight lines and low traffic volumes on both Powerline and Lower Bright Road. Upgrades not required to the intersection to accommodate heavy vehicle turn paths.

The Stantec assessment does not consider the capacity of the Lower Bright Road / Junction Road intersection (unsignalised) to accommodate vehicle turn paths (Figure 17). The assessment also doesn't consider the current condition of road pavements along the proposed heavy vehicle route, and any upgrades required to the local, unsealed roads around the project site.

The CoH referral comments note that upgrades may be required to the Worlds End Highway / Powerline Road intersection due to limited sightlines to the south.

Both Council and CoH have advised that final requirements regarding intersection and road upgrades being determined post-approval through the preparation of a Traffic Management Plan. Any road and/or intersection upgrades would be at the Applicant's cost.

The Applicant will need to seek necessary approvals from the National Heavy Vehicle Regulator (NHVR) where B-doubles are proposed on ungazetted roads, and from DIT for oversized vehicles.



Figure 17: Intersection of Lower Bright Road and Junction Road (looking west) – photo taken 23 October 2024

10.6.2 Traffic Generation

The Stantec assessment assumes the following distribution of traffic movements across the combined project site during the construction period:

- Area A (approved Robertstown Solar / BESS project) access from Lower Bright Road and/or Eagle Hawk Gate Road: 60%
- Area B (Robertstown Solar East project) access from Junction Road: 30%
- Area C (Robertstown Solar East project) access from Lower Bright Road: 10%



Figure 18: Project areas for traffic generation (Stantec)



Stantec has presented two scenarios for traffic impacts:

- 1. All movements travel to/from the development site each day; and
- 2. Provision of a construction camp (part of approved Robertstown Solar & BESS DA 422/V005/18).

Scenario 1 assumptions and conclusions:

- Total of 11,342 heavy movement during the 28 month construction period (cumulative for both Robertstown solar projects).
- Average 50 traffic movements per day, comprising 20 light vehicles and 30 heavy vehicles during construction months 7 to 24. Peak 60 traffic movements per day during months 7 and 8.
- During peak hours, the impact of traffic movements is expected to be minimal at the Worlds End Highway / Powerline Road intersection; the Lower Bright Road / Junction Road intersection; and vehicle access points on Junction Road and Lower Bright Road. Formal turn treatments are not warranted at any of these intersections.

Scenario 2 assumptions and conclusions:

- Reduced light vehicle traffic movements (up to 90% of the compared to Scenario 1), due to the establishment of a construction camp on the approved Robertstown Solar / BESS project.
- Average daily traffic would reduce from 20 to 2 light vehicle movements, being less than 1 vehicle per hour during peak hour.
- Heavy vehicle movements would be consistent with Scenario 1, which is 3 heavy vehicles during peak hour.
- The increase in traffic volumes is marginal and will not require any intersection upgrades or turn treatments.

During operation of the renewable energy facility, vehicles movement are expected to be minimal and are not expected to compromise the safety or operation of the road network. The majority of vehicles accessing the site will be light and/or utility vehicles for operational and maintenance activities. The operational phase of the development is not expected to generate regular heavy vehicles movements.

10.6.3 Car Parking

The Stantec assessment does not consider car parking requirements for the development.

The project area is large with sufficient space to accommodate car parking and manoeuvring areas within site boundaries, during both construction and operation. The code does not provide specific rates for car parking for a renewable energy facility.

During the construction period, on-site parking for light vehicles (staff, visitors) and heavy vehicles will be required. The location, number, design and configuration of temporary on-site car parking will be determined during detailed design, and will depend on the selected Scenario 1 or 2. The final design should have regard to:

- Pedestrian connectivity between car parking areas and the site office / amenities compound.
- Separation of light and heavy vehicles.
- Provision of loading and manouvering areas.
- Movement of workers and vehicles between the project areas (ie north and south of Lower Bright Road, and between the main Robertstown Solar / BESS development and the Robertstown East site).
- Proximity to the nearest sensitive receiver.



During the operational period, on-site parking for operational staff, temporary contractors, and visitors will be located within or adjacent the site office / control room compound, accessible from Lower Bright Road. The number, design and configuration of car parking will be determined during detailed design. The final design should have regard to:

- Consideration of the occasional heavy vehicle which may access the site.
- Movement of vehicles between the project areas.
- Proximity to the nearest sensitive receiver.
- After hours lighting (if necessary).

Overall, it is anticipated that the development can satisfy the relevant GDPs with respect to on-site car parking and manoeuvring. A condition of approval is recommended to consider the final design (both temporary and permanent) with respect to car parking.

10.7 Water, Soils and Flooding

The development site is within the Water Resources and Hazards (Flooding - Evidence Required). The Hazards (Flooding – Evidence Required) Overlay seeks a precautionary approach to mitigate potential impacts on people, property, infrastructure and the environment from potential flood risk. The Water Resources Overlay seeks to protect surface water quality.

Rainfall at the subject site is low and variable and the majority infiltrates the ground. During high rainfall events, some rain is captured by drainage lines and flows into dams within the development site.

There are no permanent watercourses traversing the subject site, with the nearest being Burra Creek, located 10km north and Spring Hut Creek located 1km south. The subject site is not within the catchment for either Burra Creek or Spring Hut Creek (or any another permanent watercourses), and is not subject to inundation.

For this reason, the proposed development is not at risk of flooding, nor will it increase flood risk in the local area.

The proposed construction of a renewable energy facility involves earthworks / surface disturbance and installation of permanent infrastructure which may result in soil erosion, loss of topsoil, and physical degradation of soil. Disturbed soils are easily eroded and can be moved off-site by wind and water, with the potential for sediment pollution of waterways (low risk due to absence of permanent waterways), sedimentation of vegetation, and general dust nuisance.

The development may also impact on overland flow paths, and the volume of surface water runoff infiltrating the ground and/or reaching existing dams within the development site, either temporarily or permanently.

Construction and earthworks activities are not expected to directly interact with groundwater, with no dewatering is required. Potential indirect impacts to groundwater are from accidental release of contaminants to the environment.

Mitigation measures associated with surface water, ground water and soils during construction should be detailed in a Construction Environmental Management Plan (CEMP) and include:

- Preparation of a Soil Erosion Drainage Management Plan (SEDMP) comprising controls to minimise soil erosion, and sediment controls to capture soil particles once disturbed.
- Storage of fuels and chemicals to prevent environmental contamination, including bunding as required.



- Appropriate storage of wastes to prevent environmental contamination.
- Major access tracks to be gravelled to reduce water and wind erosion.
- Watering of exposed surfaces including access tracks and car parking areas.
- Appropriate operation and maintenance of heavy vehicles.
- Provision of emergency spill kits.
- Provision of a wastewater treatment system for the construction workforce.

Post construction, disturbed areas should be rehabilitated to stabilise soils. Around the solar modules, the ground will remain pervious and provide for rainfall infiltration.

New impervious surfaces will include hardstand areas and various buildings at the operations and maintenance compound. Surface run-off from these areas should be diverted to pervious surface and existing drainage lines if possible. Run-off from the switchyard / substation will require separate stormwater management arrangements, including bunding.

Mitigation measures associated with surface water, ground water and soils during operation of the renewable energy facility should be detailed in an Operational Environmental Management Plan (OEMP) and include:

- Storage of fuels and chemicals to prevent environmental contamination, including bunding as required.
- Appropriate storage of wastes to prevent environmental contamination.
- Provision of a wastewater treatment system for the operational workforce. The Code seeks that
 on-site wastewater services be located wholly within the development site and complies with the
 SA Public Health Act 2011.

10.8 Interface between Land Uses

The Code seeks that renewable energy facilities are located and designed to minimise nuisance to adjacent development and land uses, and residential amenity.

10.8.1 Noise

The Code provisions seek that development that emits noise does not unreasonably impact the amenity of sensitive receivers.

The development site is located within an agricultural area with low levels of background noise. Existing noise sources would include vehicle movements and farm machinery. Existing electricity infrastructure in the locality, including the Robertstown substation and associated transmission lines, would emit low levels of noise including corona effect from time to time (the crackling sound made when electricity leaks into the air).

The development will generate noise emissions during the construction and operational stages. Noise emissions are expected to be greatest during the construction period with potential noise sources to include:

- traffic movements, particularly heavy vehicles
- site preparation works (may include earthmoving)
- use of machinery and equipment
- general activity noise and persons working at the site



The applicant proposes a range of mitigation measures for construction noise, which should be detailed in a CEMP. In line with EPA guidance, construction noise that causes an adverse impact on amenity will only be undertaken between 7am and 7pm, Monday to Saturday.

Potential noise sources during operation of the renewable energy facility include:

- Traffic movements associated with staff, contractors and visitors to the site (expected to be minimal, generally light vehicles, with the occasional heavy vehicle as required).
- Tracking motors of the solar panels.
- Tower conversion units (co-located inverters and transformers) and any associated cooling equipment.
- Onsite substation / switchyard (may include high voltage transformer and synchronous condensers) and any associated cooling equipment.
- Maintenance activities such as weed control and repairs.

An operational solar farm is generally accepted to emit nominal noise emissions, such that noise modelling is not required as part of the assessment. Noise emissions are not expected to cause nuisance to sensitive receivers, beyond what would already be experienced in this rural locality.

10.8.2 Solar Reflectivity / Glare

The Code provisions seek that development is designed and comprised of materials and finishes that do not cause a distraction to road uses, or cause unreasonable heat loading and/or micro-climate impacts on adjacent building and land uses (PO7.1 – Infrastructure & Renewable Energy Facilities).

Glint and glare impacts from the development are discussed in section 10.5 of this report.

The 'heat island' effect from photovoltaic modules has previously been the subject of studies with the rapid rise of large-scale solar installations in Australia and around the world, most of which are sited in more open agricultural areas and pasture lands.

Studies have shown that heat island effect may occur within the perimeter of solar arrays, but remains a localised phenomenon, with the affect dissipating within close proximity of the solar field. Consequently, use of appropriate setbacks from property boundaries should prevent any impacts on non-involved landholders (such as to more sensitive crops, horticultural activities or areas of environmental significance).

The potential extent and impact of the heat island effect from larger scale solar farms was considered by the Victorian Civil and Administrative Tribunal (VCAT) in the matter of ESCO Pacific Pty Ltd v Wangaratta RCC [2019] VCAT 219 (14 February 2019).

A 30m setback was recommended to ensure that any potential impacts from are fully contained within a solar development site, although a lesser distance could be considered based on existing vegetation, roadways or similar buffer feature to neighbouring land.

It is noted that research outcomes on this topic varies, with a 2021 study undertaken in arid ecosystems showing that solar farms have a cooling effect, rather than a heating effect, on surrounding land.

Notwithstanding, a minimum 30m setback requirement for large-scale solar farms has been adopted in South Australia's P&D Code at PO9.3 – Infrastructure & Renewable Energy Facilities. This is consistent with the NSW Government's 'Large Scale Solar Energy Guideline' (August 2022) which requires a 30m setback to mitigate heat island effect.



The Applicant has stated its intention to provide a 30m setback from all site boundaries to any solar infrastructure, however a condition of approval is recommended to ensure this is incorporated into the final design.

10.8.3 Light Spill

The Code provisions seek that external lighting is positioned and designed to not cause unreasonable light spill impact on adjacent sensitive receivers, or cause a hazard to motorists (PO6.1, 6.2 – Interface between Land Uses).

The development proposes low-level security lighting around the perimeter of the site. The Glint and Glare Assessment prepared by SLR advises that light spill to surrounding sensitive receivers (dwellings) should be less than 1 lux during night time hours, to ensure compliance with AS/NZS 4282-2023 Control of the Obtrusive effects of Outdoor Lighting.

The lighting is not expected to cause a distraction for motorists.

A general condition of approval is recommended that the final design of lighting be in accordance with AS/NZS 4282-2023.

10.8.4 Construction Impacts

Construction of the development will occur in conjunction with the approved Robertstown Solar / BESS project. The combined construction period for both projects is 28 months, and construction will be staged.

Potential impacts during construction include dust, noise, increased traffic movements (light and heavy vehicles) and general amenity impacts.

A condition of approval is recommended that a final CEMP be prepared in consultation with the local Council and DIT.

10.9 Hazards

Hazard management for renewable energy facilities focuses on fire risk, bushfire, public safety and air transport safety. Relevant Code policies are set out in the Hazards (Bushfire – Regional) Overlay, and Infrastructure and Renewable Energy Facilities modules.

10.9.1 Air Safety

The Infrastructure and Renewable Energy Facilities module seek that renewable energy facilities are located and operated to not adversely impact on air transport safety, including the operation of airfields and landing strips (PO 4.3).

There are no registered airfields, and no known unregistered landing strips within the locality. Potential impacts from glare to aviation traffic is not considered relevant to the development.

The tallest structure associated with the development will be componentry within the on-site substation, and overhead power lines (subject to final design). Substations and power lines are generally not considered a risk to aviation traffic.

10.9.2 Bushfire

The Hazards (Bushfire – Regional) Overlay seeks that development is sited and designed to mitigate the threat and impact of bushfires on life and property (DO1). Access for emergency services should be provided to aid the protection of lives and assets (DO2).

Solar farms and ancillary infrastructure generally pose a low risk of initiating fires. The solar modules, and all ancillary infrastructure must meet relevant standards and performance will be monitored throughout the operational phase. Inverters will include thermal overload protection.



The subject site is not located within a high bushfire risk area. In accordance with PO 1.1 of the overlay, the site office, laydown area, and the on-site substation / switchyard are not sited in areas that pose an unacceptable bushfire risk.

The final site layout will be developed in consultation with CFS to ensure the facility meets all CFS requirements including:

- incorporation of an Asset Protection Zone to reduce the risk of grass / stubble fires the APZ should be a minimum 17m from all buildings and infrastructure including solar panels, inverters, substation and control buildings
- provision of access roads and driveways to provide emergency vehicle access
- on-site water supply for bushfire fighting minimum 22,000 litres
- buildings designed to comply with minimum 'deemed to satisfy' fire and life safety provisions within the National Construction Code

During construction, emergency response planning including bushfire risk should be incorporated into a CEMP.

Operation of the facility will require ongoing maintenance to minimise bushfire risk. It is recommended that these management measures be incorporated into Bushfire Management Plan prepared in consultation with CFS.

10.9.3 Electrical Interference

The Code seeks that development in rural areas does not unreasonably diminish or result in the loss of existing communication services due to electrical interference (PO8.1 – Interface between Land Uses).

Electric and magnetic fields (EMF) are produced by all electrical equipment. Electrical equipment proposed for this development includes solar modules, buried cables, inverters, transformers, on-site substation, and transmission line connections to Robertstown or Bundey substations.

The level of EMF depends on voltage of equipment, proximity to the equipment, design parameters (including height), and whether the equipment is underground or overhead. The on-site substation and potential overhead high voltage transmission lines to Robertstown or Bundey substations will generate EMF.

Radio frequency interference (RFI) is also generated by electric equipment, which has the potential to impact television reception. Inverters do emit radio frequency, however they must be tested in accordance with relevant Australian standards to ensure the level of RFI is within acceptable limits. Solar modules do not emit radio frequency.

10.10 Biodiversity / Native Vegetation

The Native Vegetation Overlay seeks that development avoids, or where is cannot be practically avoided, minimises the clearance of native vegetation (PO 1.1).

The Infrastructure and Renewable Energy PDCs seek that solar farms are not located on land requiring the clearance of areas of intact native vegetation (PO9.1). Facilities should allow for wildlife movement by incorporating wildlife corridors and habitat refuges and incorporating fencing that enables the passage of small animals (PO 9.2).

The overall project footprint is 412.4ha, of which approx. 29% is comprised of native vegetation. The dominant vegetation type over the site is regenerating chenopod shrubland, with patches of intact mallee woodland and chenopod shrubland. Several threatened bird species may utilise the site, with four (4)



species observed during field surveys. A small number of hairy nosed wombat burrows were identified at the north-western / western edge of the site.

The applicant originally proposed clearance of 255.8ha of native vegetation and 11 scattered trees, as presented in the Native Vegetation Data Report (Attachment 1I). This was reduced to 253.4ha and 11 scattered trees following consultation with the Native Vegetation Council in early January 2025. The proposed clearance impacts four (4) Vegetation Associations (VAs) and requires approval under the *Native Vegetation Act 1991* (Level 4 clearance).

The proposal was supported by the Native Vegetation Assessment Panel (NVAP) on behalf of NVC at its 28 January 2025 meeting.

In accordance with the *Native Vegetation Act 1991*, the Applicant has applied the mitigation hierarchy through the design and layout of the solar farm to limit the extent of vegetation clearance. Management measures are proposed during the construction phase to mitigate environmental impacts:

- a) At a project level, the impetus for the Robertstown East project is to avoid and minimise native vegetation clearance and impact of fauna species at the approved Robertstown Solar & BESS site.
- b) The proposed layout of the Robertstown East project has undergone numerous iterations to avoid native vegetation to the greatest extent possible. The development footprint covers 31.6% cleared farmland with no native vegetation, and 43.6% regenerating chenopod shrubland. The regenerating areas have been historically cleared for agriculture, and are in poor condition with weed infestations.
- c) Significant areas of native vegetation have been avoided, with minimal clearance to relatively intact vegetation communities. The threatened bird species identified during field surveys were in the two (2) VAs that occupy very small areas. NVC is satisfied that clearance of these VAs unlikely to cause adverse impacts to these species.
- d) The hairy nosed wombat is a protected species under the *National Parks and Wildlife Act* 1972, and burrows should be avoided where possible. The Applicant intends to undertake a targeted wombat survey prior to construction. The survey will inform appropriate management options.
- e) Fencing is proposed around the perimeter of solar modules, rather than the allotment boundaries or overall site boundary. This may help to maintain access for wildlife movement between patches of native vegetation.
- f) The Applicant intends to prepare a CEMP, which will include management strategies to minimise impacts caused by vegetation clearance.
- g) Some of clearance will be temporary (for construction activities, site offices etc) and can be rehabilitated post construction. This will reduce the overall clearance required for the project.
- h) The solar panel system will allow regrowth of low-level vegetation under and between the panels.
- i) Where appropriate, the clearance methodology will use rolling (in shrublands) rather than complete clearance.
- j) The opportunity for an on-ground Significant Environmental Benefit (SEB) will be explored with local landowners. A payment into the Native Vegetation Fund will be made to offset the required SEB and points available from an on-ground SEB.

The mitigation measures are reflected in relevant conditions of approval, namely through condition 2 (final design), condition 3 (wombat survey), condition 4 (CEMP), and NVC recommended conditions 12, 13 and 13.

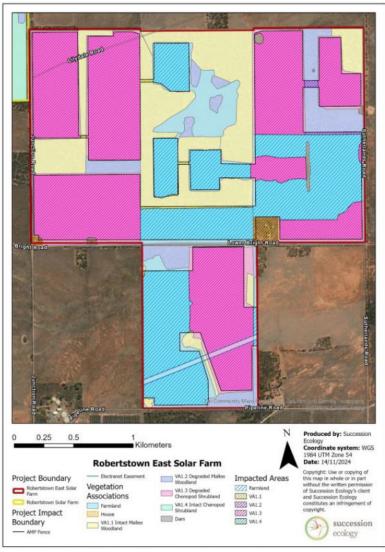


Figure 19: Vegetation associations and proposed clearance

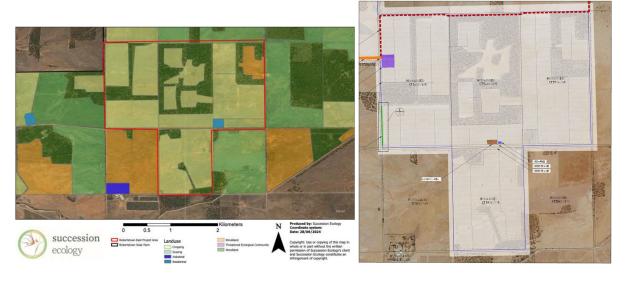


Figure 20: vegetation coverage vs site layout



Figure 21: View from NE corner of site (Sutherlands Road) – photo taken 23/10/24



Figure 22: View along Lower Bright Road from SE corner of site – photo taken 23/10/24



Figure 23: View south from Lower Bright Road – photo taken 23/10/24



Figure 24: Bearded dragon – photo taken 23/10/24



11. CONCLUSION

The development application is for a 300MW solar facility and associated infrastructure, within the Rural Zone.

During the public notification period, two interstate submissions were received, objecting to renewable energy development and electricity transmission infrastructure in general. Other concerns raised were fire risk, contamination risk, and impact on food production land. These concerns, along with the requirements of the Code, were considered in the assessment.

The development has been sited and designed in general accordance with Code requirements, to minimise localised and cumulative impacts. The development is co-located with approved and proposed renewable energy facilities to minimise overall fragmentation of the land. The site is close to existing substations, to minimise the visual impact of transmission connections. The subject site is relatively remote, with few sensitive receivers, and generous separation from the nearest township and residential areas. The site and locality are not identified as environmentally, culturally or visually sensitive.

Consideration of impacts on local amenity included a Visual Impact Assessment and Glint and Glare Assessment. These studies demonstrate that while the proposal does represent a significant change to the appearance of the subject site, the local topography, existing vegetation, proposed setbacks and lack of sensitive receptors mitigate the potential visual and glare impacts to an acceptable level for the majority of nearby dwellings and public roads. New landscaping is proposed along a portion of the western site boundary (north of Lower Bright Road) to provide additional visual screening for House 1 (host landowner). Residual glare impacts to Lower Bright Road from sub-array 8 will be reconsidered at detailed design stage, to identify appropriate mitigation measures.

The traffic assessment prepared for the development considered the suitability of the haulage route to accommodate the expected vehicle movements per day during the construction period. The number of light vehicle movements will depend on whether an on-site construction camp is established as part of the approved Stage 1 project. Whilst the Applicant's assessment concludes that road and/or intersection upgrades are not required to accommodate the size and volume of traffic, final requirements must meet Council and Commissioner of Highway requirements.

Ongoing interface impacts are expected to be minimal during operation of the facility. During the 28-month construction period (combined with the approved Robertstown Solar / BESS project), there will be noise, traffic and amenity impacts associated with heavy vehicles, machinery and earthworks. It is recommended that provision of a Construction Environmental Management Plan be a condition attached to any approval to ensure appropriate management measures are taken.

Native vegetation clearance of 255.8ha is proposed to facilitate the development. The Native Vegetation Council supports the development, on the basis that the Applicant has applied the mitigation hierarchy under the *Native Vegetation Act 1991*. The development has been sited and designed to impact predominantly lower quality vegetation and retain areas of higher quality vegetation. NVC is satisfied that the clearance is not likely to negatively impact threatened species, wildlife habitat or movement corridors.

Pursuant to Section 131 of the *Planning, Development and Infrastructure Act 2016*, and having undertaken an assessment of the application against the relevant provisions of the Planning and Design Code and State Planning Policies, the application is generally in accordance with its provisions for the reasons outlined.