

APPLICATION ON NOTIFICATION – CROWN DEVELOPMENT

Applicant:	Energy Projects Solar (EPS) Pty Ltd
Development Number:	422/V005/18
Nature of Development:	500MW Solar Farm & associated infrastructure
Type of development:	Public Infrastructure (s49 – Crown development)
Zone / Policy Area:	Primary Production
Subject Land:	Refer to public notice for title details: the project area is approximately 1,800 hectares in size and is situated in the localities of Bright and Geranium Plains. The site consists of 12 parcels of land located to the east of Worlds End Highway, approximately 5km north-east of Robertstown. The parcel of land is bounded by Powerline Road to the north, Lower Bright Road to the south and Junction Road to the east.
Contact Officer:	Sharon Wyatt
Phone Number:	08 7109 7132
Start Date:	23 January 2019
Close Date:	25 February 2019
<p>During the notification period, hard copies of the application documentation can be viewed at the Department of Planning, Transport and Infrastructure, Level 5, 50 Flinders Street, Adelaide during normal business hours. Application documentation may also be viewed during normal business hours at the local Council office (if identified on the public notice).</p>	

Written representations must be received by the close date (indicated above) and can either be posted, hand-delivered, faxed or emailed to the State Commission Assessment Panel (SCAP). A representation form is provided as part of this pdf document.

Any representations received after the close date will not be considered.

Postal Address:

The Secretary
State Commission Assessment Panel
GPO Box 1815
ADELAIDE SA 5001

Street Address:

Development Division
Department of Planning, Transport and Infrastructure
Level 5, 50 Flinders Street
ADELAIDE

Email Address: scapadmin@sa.gov.au

DEVELOPMENT ACT, 1993
S49/S49A – CROWN DEVELOPMENT
REPRESENTATION ON APPLICATION

Applicant:	Energy Projects Solar (EPS) Pty Ltd
Development Number:	422/V005/18
Nature of Development:	Construction of a 500MW solar farm and associated infrastructure, including solar photovoltaic modules and ground mounted tracking racks, inverter stations, a 250MW capacity Battery Energy Storage System, condensers, transformers, switching yard and electrical substation, underground cables connecting groups of solar panels to inverter stations, site office, maintenance sheds, laydown area, access tracks and perimeter fencing
Zone / Policy Area:	Primary Production
Subject Land:	Refer to public notice for title details: the project area site is approximately 1,800 hectares in size and is situated in the localities of Bright and Geranium Plains. The site consists of 12 parcels of land located to the east of Worlds End Highway, approximately 5km north-east of the township of Robertstown. The parcel of land is bounded by Powerline Road to the north, Lower Bright Road to the south and Junction Road to the east.
Contact Officer:	Sharon Wyatt
Phone Number:	08 7109 7132
Close Date:	25 February 2019

My name: _____

My phone number: _____

PRIMARY METHOD(S) OF CONTACT: Email address: _____

Postal address: _____

Postcode

You may be contacted via your nominated PRIMARY METHOD(s) OF CONTACT if you indicate below that you wish to be heard by the State Commission Assessment Panel in support of your submission.

My interests are:

- ☐ owner of local property
- ☐ occupier of local property
- ☐ a representative of a company/other organisation affected by the proposal
- ☐ a private citizen

The address of the property affected isPostcode.....

The specific aspects of the application to which I make comment on are:

.....

.....

.....

I ☐ wish to be heard in support of my submission
☐ do not wish to be heard in support of my submission
(Please tick one)

by ☐ appearing personally
☐ being represented by the following person :
 (Cross out whichever does not apply)

Date: Signature:

Return Address: The Secretary, State Commission Assessment Panel, GPO Box 1815, Adelaide, SA 5001 or scapadmin@sa.gov.au

DEVELOPMENT ACT 1993

NOTICE OF APPLICATION FOR CONSENT TO DEVELOPMENT

SECTION 49 – PUBLIC INFRASTRUCTURE

Notice is hereby given that an application has been made by **Energy Projects Solar (EPS) Pty Ltd** for consent to construct a 500MW solar farm and associated infrastructure, including solar photovoltaic modules and ground mounted tracking racks, inverter stations, a 250MW capacity Battery Energy Storage System, condensers, transformers, switching yard and electrical substation, underground cables connecting groups of solar panels to inverter stations, site office, maintenance sheds, laydown area, access tracks and perimeter fencing. Connection to Robertstown Substation will occur via overhead and/or underground transmission lines. **Development Number: 422/V005/18.**

The project area site is approximately 1,800 hectares in size and is situated in the localities of Bright and Geranium Plains. The site consists of 12 parcels of land located to the east of Worlds End Highway, approximately 5km north-east of the township of Robertstown. The parcel of land is bounded by Powerline Road to the north, Lower Bright Road to the south and Junction Road to the east.

The subject land is defined as: Allotment 91 FP212965 (CT Volume 5565 Folio 131); Section 227 (CT Volume 5431 Folio 657); Section 232 (CT Volume 5431 Folio 659); Section 13 (CT Volume 5465 Folio 354); Section 42 (CT Volume 5464 Folio 828); Section 43 (CT Volume 5941 Folio 840); Section 229 (CT Volume 5561 Folio 287); Section 221 (CT Volume 5561 Folio 89); Sections 44 & 45 (CT 5951 Folio 34); Allotment 91 FP212508 (CT Volume 5550 Folio 784); Allotment 51 DP51338 (CT Volume 5689 Folio 928) and Allotment 50 DP51338 (CT Volume 5689 Folio 927).

The development site is located within the Primary Production Zone of the Goyder Council Development Plan (Consolidated 24 November 2016).

The application may be examined during normal office hours at the office of the State Commission Assessment Panel, Level 5, 50 Flinders Street and at the office of the Regional Council of Goyder, 1 Market Square, Burra. Application documentation may also be viewed on the State Commission Assessment Panel (SCAP) website: www.saplanningcommission.sa.gov.au/scap.

Any person or body who desires to do so may make representations concerning the application by notice in writing delivered to the Secretary, State Commission Assessment Panel, GPO Box 1815, Adelaide 5001 **NOT LATER THAN Monday 25 February 2019**. Submissions may also be emailed to scapreps@sa.gov.au

Each person or body making a representation should state the reason for the representation and whether that person or body wishes to be given the opportunity to appear before the SCAP to further explain their representation.

Submissions may be made available for public inspection.

Should you wish to discuss the application and the public notification procedure please contact Sharon Wyatt on 7109 7132.

Alison Gill
SECRETARY
STATE COMMISSION ASSESSMENT PANEL

PUBLISHED IN: The Advertiser, Northern Argus, Barossa and Light Herald
PUBLICATION DATE: WED 23 January 2019

SECTION 49 & 49A – CROWN DEVELOPMENT DEVELOPMENT APPLICATION FORM

PLEASE USE BLOCK LETTERS

COUNCIL: THE REGIONAL COUNCIL OF GOYDER

APPLICANT: SEE ANNEXURE A

ADDRESS: PO BOX 195, CHARLESTOWN, NSW 2290

CROWN AGENCY: DEPARTMENT FOR ENERGY AND MINING

FOR OFFICE USE

DEVELOPMENT No: _____

PREVIOUS DEVELOPMENT No: _____

DATE RECEIVED: / /

CONTACT PERSON FOR FURTHER INFORMATION

Name: STEVE MCCALL

Telephone: 02 9258 1362 [work] 0418 426 769 [Ah]

Fax: _____ [work] _____ [Ah]

Email: stevemccall@epsenergy.com.au

NOTE TO APPLICANTS:

(1) All sections of this form must be completed. The site of the development must be accurately identified and the nature of the proposal adequately described. If the expected development cost of this Section 49 or Section 49A application exceeds \$100,000 (excl. fit-out) or the development involves the division of land (with the creation of additional allotments) it will be subject to those fees as outlined in Item 1 of Schedule 6 of the *Development Regulations 2008*. Proposals over \$4 million (excl. fit-out) will be subject to public notification and advertising fees.

(2) Three copies of the application should also be provided.

<input type="checkbox"/> Complying <input type="checkbox"/> Merit <input type="checkbox"/> Public Notification <input type="checkbox"/> Referrals	Decision: _____ Type: _____ Finalised: / /
------------------------------------------------------------------------------------------------------------------------------------------------------------	----------------------------------------------------------------

	Decision required	Fees	Receipt No	Date
Planning:	_____	_____	_____	_____
Land Division:	_____	_____	_____	_____
Additional:	_____	_____	_____	_____
Minister's Approval				

EXISTING USE: AGRICULTURE - CROPPING/ GRAZING

DESCRIPTION OF PROPOSED DEVELOPMENT: SEE ANNEXURE A

LOCATION OF PROPOSED DEVELOPMENT: ROBERTSTOWN - POWERLINE ROAD/LOWER BRIGHT ROAD

House No: _____ Lot No: _____ Street: _____ Town/Suburb: ROBERTSTOWN, 5381

Section No [full/part] _____ Hundred: SEE ANNEXURE A Volume: _____ Folio: _____

Section No [full/part] _____ Hundred: _____ Volume: _____ Folio: _____

LAND DIVISION:

Site Area [m²] 18,000,000 Reserve Area [m²] _____ No of existing allotments _____

Number of additional allotments [excluding road and reserve]: _____ Lease: YES ☒ NO ☐

DEVELOPMENT COST [do not include any fit-out costs]: \$ 1.17 BILLION

POWERLINE SETBACKS: Pursuant to Schedule 5 (2a)(1) of the *Development Regulations 2008*, if this application is for a building it will be forwarded to the Office of the Technical Regulator for comment unless the applicant provides a declaration to confirm that the building meets the required setback distances from existing powerlines. The declaration form and further information on electricity infrastructure and clearance distances can be downloaded from the DPLG website (www.dac.sa.gov.au).

I acknowledge that copies of this application and supporting documentation may be provided to interested persons in accordance with the *Development Act 1993*.

SIGNATURE: _____

Dated: 30/11/2018

SECTION 49 & 49A – CROWN DEVELOPMENT DEVELOPMENT APPLICATION FORM: ANNEXURE A

APPLICANT: ENERGY PROJECTS SOLAR PTY LTD ACN: 609 935 588 ON BEHALF OF ROBERTSTOWN SOLAR 1 PTY LTD ACN: 621 450 940 FOR THE PHOTOVOLTAIC ENERGY GENERATION SYSTEM (PVS) AND ASSOCIATED INFRASTRUCTURE AND ON BEHALF OF ROBERTSTOWN SOLAR 2 PTY LTD ACN: 621 451 161 FOR THE BATTERY ENERGY STORAGE SYSTEM (BESS) AND ASSOCIATED INFRASTRUCTURE.

DESCRIPTION OF PROPOSED DEVELOPMENT: DEVELOPMENT OF AN INTEGRATED BUT SEPARATELY OPERATED GRID CONNECTED PHOTOVOLTAIC ENERGY GENERATION SYSTEM (PVS) AND ASSOCIATED INFRASTRUCTURE AND BATTERY ENERGY STORAGE SYSTEM (BESS) AND ASSOCIATED INFRASTRUCTURE INCLUDING BUT NOT LIMITED TO:

SOLAR MODULES, INVERTER STATIONS, TRANSFORMERS, SWITCHING SUBSTATION, UTILITY SCALE BATTERY FACILITY, ONE OR MORE SYNCHRONOUS CONDENSERS (SUBJECT TO REQUIREMENT) ASSOCIATED UNDERGROUND CABLES, UNDERGROUND AND/OR OVERHEAD TRANSMISSION LINES, ASSOCIATED CABLES, POLES, TO CONNECT THE PROJECT TO ELECTRANET'S ROBERTSTOWN SUBSTATION, ADMINISTRATION AND CONTROLS AREA, DRAINAGE WORKS, SECURITY MEASURES INCLUDING FENCING, CCTV AND LOW-LEVEL NIGHT TIME LIGHTING.

LOCATION OF PROPOSED DEVELOPMENT:

TITLE	LOT/PLAN/SECTION	STREET/ROAD	AREA	HUNDRED
CT 5565/131	A91 FP212965	LOWER BRIGHT ROAD	BRIGHT	BRIGHT
CT 5431/657	SECTION 227	LOWER BRIGHT ROAD	GERANIUM PLAINS	BRIGHT
CT 5431/659	SECTION 232	POWER LINE ROAD	BRIGHT	BRIGHT
CT 5465/354	SECTION 13	LOWER BRIGHT ROAD	BRIGHT	BRIGHT
CT 5464/828	SECTION 42	LOWER BRIGHT ROAD	BRIGHT	BRIGHT
CT 5941/840	SECTION 43	LOWER BRIGHT ROAD	BRIGHT	BRIGHT
CT 5561/287	SECTION 229	LOWER BRIGHT ROAD	BRIGHT	BRIGHT
CT 5561/89	SECTION 221	LOWER BRIGHT ROAD	BRIGHT	BRIGHT
CT 5951/34	SECTION 44 & 45	POWER LINE ROAD	BRIGHT	BRIGHT
CT 5550/784	A91 FP212508	POWER LINE ROAD	BRIGHT	BRIGHT
CT 5689/928	A51 DP51338	PUBLIC ROAD	BRIGHT	BRIGHT
CT 5689/927	A50 DP51338	PUBLIC ROAD	BRIGHT	BRIGHT

Signature: 

Dated: 30/11/2018

PLANNING REPORT

Prepared for Robertstown Solar



EPS ENERGY

Reference No. 11314

November 18

www.robertstownsolar.com.au

QUALITY ASSURANCE AND DECLARATION

Quality Assurance and Version Control Table		
Project:	Robertstown Solar	
Client:	Robertstown Solar 1 Pty Ltd and Robertstown Solar 2 Pty Ltd	
Rev:	Date:	Reference:
V01	29.11.2018	11314_Robertstown Solar Planning Report
Checked By:	Simon Duffy	
Approved By:	Steve McCall	
Declaration:	<i>The opinions and declarations in this document are ascribed to EPS Energy and are made in good faith and trust that such statements are neither false nor misleading.</i> <i>In preparing this document, EPS Energy has considered and relied upon information obtained from the public domain, supplemented by discussions between key EPS Energy staff, representatives from governing agencies and independents, including the client and specialist consultants.</i>	
Applicant:	EPS Energy PO Box 195 Charlestown NSW 2290 (02) 9258 1362	
Prepared By:	Alina Tipper and Simon Duffy	
Project Land:	CT 5565/131 A91 FP212965 CT 5431/657 Section 227 CT 5431/659 Section 232 CT 5465/354 Section 13 CT 5464/828 Section 42 CT 5941/840 Section 43 CT 5561/287 Section 229 CT 5561/89 Section 221 CT 5951/34 Section 44 & 45 CT 5550/784 A91 FP212508 CT 5689/928 A51 DP51338 CT 5689/927 A50 DP51338	

EXECUTIVE SUMMARY

At this stage Robertstown Solar is proposed to be an integrated but separately operated grid connected Photovoltaic Energy Generation System (PVS) of approximately 500MW (AC) generation capacity and a 250MW capacity Battery Energy Storage System (BESS) with 1,000MWh of storage that will feed into the National Electricity Market via ElectraNet's Robertstown Substation. The PVS element, the BESS element and associated infrastructure together are "the Project".

This Planning Report (PR) has been prepared by Energy Projects Solar (EPS) Pty Ltd ACN: 609 935 588 for Robertstown Solar 1 Pty Ltd ACN: 621 450 940 the special purpose vehicle for the (PVS) and Robertstown Solar 2 Pty Ltd ACN: 621 451 161 the special purpose vehicle for the (BESS).

Robertstown Solar 1 Pty Ltd, the special purpose vehicle for the PVS, has applied to the Australian Energy Market Operator (AEMO) to become a Registered Generator in the National Electricity Market (NEM). The PVS will connect to the Robertstown Substation via its own dedicated connection allowing the PVS to export electricity into the national electricity grid.

Robertstown Solar 2 Pty Ltd, the special purpose vehicle for the BESS, has applied to the Australian Energy Market Operator (AEMO) to become a Registered Generator in the National Electricity Market (NEM). The BESS will connect to the Robertstown Substation via its own dedicated connection allowing the BESS to export and import electricity into and out of the national electricity grid.

PROJECT LAND LOCATION

The Project land comprises the Project area on which the PVS, BESS, Project's substation, Operations and Maintenance buildings and associated infrastructure will be built and operated, and land required to connect the Project's elements to ElectraNet's Robertstown Substation. The Project land is shown in Figure 2-2.

The Project area is approximately 1,800ha located in the suburbs of Bright and Geranium Plains in South Australia. The Project is situated approximately 5km north-east of Robertstown, and 115km north-east of the State's capital, Adelaide. The Project is within the Local Government Area (LGA) of Regional Council of Goyder.

Land within the immediate surrounding area of the Project area is predominately used for agriculture.

PROJECT AREA SELECTION

On behalf of Robertstown Solar, EPS Energy undertook an extensive solar site identification assessment across the Eastern Australian National Electricity Network examining potential project areas based on several criteria including:

- Proximity to electrical substations;
- Access to existing electrical substations and capacity of each substation to accept new generation;
- Marginal loss factors and future forecasts;
- Consideration of known solar projects proximate to a proposed project area and the potential for impact on capacity and connection;
- Irradiation levels;
- Agreements with landowners to host a project;
- Utilised land such as land used for agricultural land uses to reduce the likelihood of the solar development encountering significant areas of native vegetation, Aboriginal cultural heritage items or other environmental constraints;
- Environmental analysis of ecology, archaeology and potential environmental constraints including flooding;
- Favourable topography and geotechnical conditions for constructing and operating a solar development;
- Proximity to towns but equally enough distance between the site and urban populated areas;
- Suitable infrastructure surrounding the project area e.g. roads access for construction and operation of a solar development;
- NEM capacity, grid strength and the ever-increasing market demand for renewable energy;
- Favourable response from enquires with the Transmission Network Service Provider (ElectraNet); and
- Details on interstate connectors and relevant known transmission constraints.

The initial assessment of the 1,800ha (approximately) Project area found it met several key criteria including:

- The Project area adjoins and can access the Robertstown Substation;
- Robertstown Substation has the capacity to accept new electricity generation;
- The area has a strong electrical transmission network;
- The landowners of the Project area were receptive to hosting a solar development;
- The Project area is used for agricultural land uses including cropping and grazing thereby reducing the likelihood of the Project encountering significant areas of native vegetation, Aboriginal cultural heritage items or other environmental constraints;
- Suitable infrastructure surrounding the Project area including good State and Local road access to the Project area for construction and operation of a solar development;
- Good irradiation levels; and

- Proximity to the town of Robertstown and Burra but equally enough distance between the Project area and Robertstown.

Based on the positive outcomes of the initial assessment and with strong landowner support the next phase of assessment was commenced including detailed grid connection studies, financial feasibility modelling, specific Project area investigations including preliminary field works to identify any unknown environmental and cultural constraints and preliminary Project design works. The assessment found:

- Power generated by the Project can be exported into the grid without any significant constraints;
- Co-location of the Project close to the Robertstown Substation minimises the connection transmission line distance thereby reducing the need for transmission tower structures, electrical transmission losses and consequently improving the economics of the Project on the Project area;
- The Project will not be constrained by environmental constraints such as flooding, ecology or archaeology; and
- Favourable topography and geotechnical conditions for constructing and operating a solar and battery development.

Based on the findings the Project was considered feasible. Consideration then turned to the social aspect of the Project including ascertaining relevant stakeholder opinions on the Project in the Project area's locality.

On behalf of Robertstown Solar, EPS Energy carried out pre-Development Application lodgment community and stakeholder engagement to understand the opinions of relevant stakeholders on the Project in the Project area's locality. Details of the consultation are set out in the following section - Consultation.

CONSULTATION

The following stakeholders were identified as key to the Project:

- Landowners and occupiers of the properties forming the proposed Project area and adjacent properties;
- Key government and agency members;
- The Ngadjuri Nation Aboriginal Corporation;
- The wider Robertstown community and established groups; and
- The relevant authorities who manage the registered easements across the Project area.

Noting that Robertstown has a population of 248 (2016 Census), an estimated 52 guests attended the Community Information Sessions and Neighbour Information Session at the Robertstown Peace Institute on 29-30 May 2018 including seven (7) of the nine (9) adjacent landowners and a number of representatives from the Regional Council of Goyder and ElectraNet.

The response from the key members of the State Government and other agencies has been positive and supportive of the Project in the Project area's locality. Members of the Regional Council of Goyder expressed their commendation of EPS Energy's early and comprehensive engagement approach.

The response from the general community has been positive and supportive of the Project in the Project area's locality.

Pre-development application engagement did not raise any uncertainty or concerns for the Project in the Project area's locality that cannot be adequately managed.

PROJECT DESCRIPTION

The PVS element of the Project will have a maximum output capacity of approximately 500MW (AC). The BESS element of the Project includes up to 250MW capacity battery with up to 1,000MWh of storage. The Project may also include one or more synchronous condensers to assist in providing inertia for managing power system strength. Further detailed assessments are underway to ascertain the option and appropriate sizing of any synchronous condensers.

The Project will include, but not be limited to, the following components:

- Solar photovoltaic modules and ground mounted tracking racks;
- DC/AC containerised or skid mounted inverter stations;
- Battery storage area;
- Synchronous condensers (subject to requirement);
- Transformers;
- Switching yard and electrical substation;
- Associated underground cables connecting groups of solar panels to inverter stations and inverter stations via overhead and/or underground transmission lines to a transformer in the substation;
- Ancillary infrastructure and buildings associated with the development including a site office, maintenance sheds, laydown area/compound access tracks and perimeter fencing; and
- Connection to Robertstown Substation via overhead and/or underground transmission lines.

The Project will likely connect to Robertstown Substation via two 275 kV circuit overhead and/or underground transmission lines having a route length of between 0.5-3km (approximately) dependant on the final design and location of the Project's transformers and switch gear. These network connection facilities will be designed, constructed and operated to ensure compliance with all statutory requirements.

Extensive technical assessments and National Electricity Market rules for connection to the high voltage transmission network require a separate approval process, coordinated with Australian Energy Market Operator (AEMO) and ElectraNet, for the PVS and BESS connection to the Robertstown Substation.

In line with other utility scale solar developments the Project includes three broad phases, the development or construction phase, the operation phase and the decommissioning phase.

The development/construction phase of the Project with a maximum output capacity of approximately 500MW (AC) and a battery energy storage system with 1,000MWh capacity is multifaceted and consequently is likely to be constructed in a number of phases over a number of years.

STATUTORY PLANNING CONTEXT

The development application is submitted pursuant to Section 49 of the *Development Act 1993*.

ENVIRONMENTAL ASSESSMENT

Initial Project technical studies conclude there will be minimal impact to the surrounding environment. The studies underpin the key findings and recommendations outlined in this Planning Report.

The following is a summary of the key environmental considerations:

Visual Amenity

The Visual Impact Assessment (VIA) found that the overall visual impact rating to residential and viewpoint receptors is "Low".

The existing landscape and scenic quality of the Project Area and surrounding area indicates the site is appropriate for the Project for the following reasons:

- The Project is located on land zoned Primary Industry Zone. The Development Plan expressly seeks the development of Renewable Energy Facilities within the Primary Production Zone;

- The bulk and scale of the Project is consistent with the existing electricity infrastructure;
- The uniform and linear layout of the Project is not considered out of character with the existing rural landscape;
- The Project will not be a dominant feature in the landscape; and
- The Project cannot be viewed in its entirety, even from Inspiration Point lookout.

Traffic and Transport

Anticipated traffic volumes will be highest during the Project's construction while operational traffic volumes are expected to be minimal.

A Transport Impact Assessment (TIA) assessed the potential impact of the Project's construction traffic movements on transport routes and other road users and assessed the potential impact of the Project's operational traffic movements on transport routes and other road users based on the Project being completely operational. The assessment reaches several conclusions including the traffic generated by the Project during the construction and operational phases is very low in comparison to existing traffic volumes on the State controlled roads and therefore is not expected to compromise the safety or function of the surrounding State road network and the traffic generated by the proposed Project area during the construction and operational phases is not expected to compromise the safety or function of the local roads that experience low volumes of traffic.

A Traffic Management Plan for the construction phase will be prepared before the commencement of construction in consultation with Department of Planning, Transport and Infrastructure (DPTI) and Goyder Regional Council. The Traffic Management Plan will address construction vehicle access arrangements and identify traffic management measures to address traffic safety and access issues inherent with using oversized vehicles and general construction traffic.

Biodiversity

The Project's area is predominately used for cropping and grazing livestock. Only approximately 13% of the Project Area is covered in native vegetation.

Desktop and initial field survey assessment of the Project area's ecological values were completed to determine the presence of species of conservation significance (i.e. species protected under Commonwealth or State legislation).

Preliminary design works aim to avoid larger areas of native vegetation within the Project area however a number of individual scattered trees or clumps of trees will be removed to assist with the construction and the Project's effective operation. The removal of the individual scattered trees and clumps of trees will not cause any significant impact on local biodiversity.

Initial fauna surveys identified the presence of the Southern Hairy – nosed Wombat burrows generally located in some drainage lines. A targeted wombat survey will be carried out to inform the appropriate management options.

Further Flora and Fauna field survey work will be carried out to inform the Project's final layout plans.

Cultural Heritage

Desktop and initial archaeological survey assessment of the Project area were completed to understand the possible presence of Aboriginal and/or European archaeological value within the Project area.

The initial assessment identified one Aboriginal site, three isolated artefacts (Complete Flake, Silcrete), one culturally sensitive landscape and four European sites of local significance.

Preliminary design works aim to avoid the Aboriginal site and the four European sites of local significance.

Discussions have commenced with the Ngadjuri Nation Aboriginal Corporation regarding further archaeological survey assessment of the Project area to identify the presence of Aboriginal heritage within the Project area.

The Cultural heritage survey works and discussion with the Ngadjuri Nation Aboriginal Corporation will inform the Project's final layout plans.

Land Use

The possible medium - term change of land use of approximately 18km² of agricultural land is a very minor (0.05%) change on the region's 3.2 million ha + agricultural production potential (Based on Australian Bureau of Agricultural and Resource Economics land use data 2011).

Investigations are being undertaken to assess if sheep grazing under the panels or cropping between the panels is feasible during the operation phase.

After the Project's decommissioning the Project area will be available for agricultural production. Consequently, the Project will not have an adverse impact on the long-term agricultural use of the land.

Flooding

The Project will not have a demonstrable impact on local flooding.

Hydrology

The Project will not affect basic landholder water rights and harvestable rights.

Soils and Salinity

The Project will involve short - term construction, followed by decades of operation with either limited co-location agricultural land uses or no agricultural land uses. The Project will not contribute to an increase in the existing salinity levels or adversely impact the existing soil conditions.

Surface Water and Erosion

The majority of the Project area will be retained in its current condition allowing infiltration of rainfall. A small part of the Project area (approximately 6-20 ha or 0.3 – 1.1% of the Project area), could potentially increase the runoff volumes and velocities however with appropriate management the potential for erosion and migration of sediment is considered unlikely.

During the construction and operational phases, the Project will implement measures to ensure peak runoff rates or long-term runoff yields are not increased or are minimal and the possibility of soil erosion is limited.

Groundwater

The risk of groundwater contamination is very low. Fuel, oils and lubricants required during construction and operation will be stored and managed in accordance with relevant standards.

Water Resource

Australia is one of the world's top 20 water-stressed nations.

A report by the World Resources Industry notes the following key points:

- It identified Australia as one country vulnerable to water stress where the potential for cheap renewable energy, solar and wind as opposed to fossil fuels, could reduce water consumption country-wide as these technologies use minimal water;

- Every megawatt hour of electricity generated by coal withdraws around 60,700 litres and consumes about 2,600 litres of water; and
- In the 2017-2018 financial year, Australian's have consumed 147 terrawatt hours of electricity, about 73 per cent of which comes from coal, which equates to around 455 billion litres of water.

The Project will contribute to reducing the amount of water required to generate electricity.

Climate

The Project will deliver clean and renewable energy to the South Australian people in the face of climate change, assist in meeting renewable energy targets for the State and the nation, displace the annual equivalent of 815,000 tonnes of greenhouse gas emissions, comparable to planting 116,500 trees or removing 326,500 cars from the road and provide clean energy to power an equivalent of 144,000 homes per annum for the Project's 30 year life.

Noise

The Project's construction phase will generate noise emissions. Noise emissions will occur during site preparation, the installation of the Project's infrastructure (including the panel system) and from the construction vehicles / machinery.

Adopting standard environmental management controls, shutting down equipment when not in use and use of noise reduction devices will minimise the construction noise impacts at sensitive receivers which are expected to be negligible.

Operating the Project will generate nominal noise emissions. Consequently, no noise impacts to sensitive receivers are anticipated during the Project's operation phase.

Bushfire

The risk of initiating fire from the solar panels, inverters and other solar infrastructure is very low due to high quality of the components. Potential ground cover on the Project area does pose a potential risk of fire. Mitigation of this risk will include the internal access roads being maintained for access and where relevant as a firebreak.

Air Quality

Potential dust generated by construction traffic on internal access roads and unsealed public roads will be mitigated by standard management controls. The Project is not expected to generate measurable dust during operations.

Electric and Magnetic Fields

The Project design will adhere to the clearance distances from sensitive receivers for safety purposes and incorporate suitable buffers to limit exposures in accordance with several technical and legislative requirements.

Socio-Economic

The Project will:

- Deliver clean and renewable energy for Australia in the face of climate change;
- Assist in meeting renewable energy targets for the State and the Nation;
- For each year of its 30-year operational life, displace the equivalent of 815,000 tonnes of greenhouse gas emissions per annum, the equivalent of offsetting 326,500 cars or providing the equivalent benefit of 116,500 trees per annum;
- Provide clean energy to power an equivalent of 144,000 homes for the Project's life;
- Create industry diversity for the Goyder region;
- Create substantial employment opportunities during Project construction phases;
- Be located in a suitable area with access to existing infrastructure;
- Provide a flexible, low-impact alternative to the existing agricultural land use;
- Generate an estimated economic benefit in the order of \$526.5 million for the broader economy and approximately \$295.4 million as direct domestic Project expenditure;
- Generate up to an estimated 275 equivalent full-time jobs during construction, and a further 410 indirect full-time equivalent jobs;
- Generate up to an estimated 15 equivalent full-time jobs during operations; and
- Provide a direct benefit to the community in the form of a community fund.

Glint and Glare

The assessment identified six residences where the residents of the houses may potentially view low-level glare for a small amount of time (minutes) when looking towards the PVS solar panels early in the morning or late in the evening on some months through the middle of the year. Based on observations, existing obstacles (including existing vegetation, topography, and structures) between the residents of these six houses and the PVS panel arrays obstruct and ameliorate the low-level glare identified in the Glint and Glare report.

The assessment concluded Worlds End Highway does not experience glare issues. Sections of Lower Bright Rd, Powerline Rd and Junction Rd experience some low-level glare for a small duration (less than 10 minutes) during the early morning for a few months a year.

The roads experience very limited local traffic and observations of existing obstacles (including existing vegetation, topography and structures) between the relevant sections of roads and the PVS panel arrays obstruct and ameliorate the low-level glare identified in the Glint and Glare report.

Environmental Management Framework

Environmental Management Plans for the Project's construction phase and operation phase will be prepared detailing the management measures for any potential environmental risk.

CONCLUSION

The Planning Report concludes the Project:

- Is consistent with the relevant statutory provisions;
- Will not result in significant environmental impacts;
- Is suitable at the proposed Project area; and
- Is in the public interest.

Therefore, it is respectively requested the Project be approved subject to final Project documents and plans being approved by relevant Government authorities prior to the commencement of construction and operation.

ABBREVIATIONS

Abbreviation	Description
AADT	Annual Average Daily Traffic
AC	Alternating Current
ACMA	The Australian Communications and Media Authority
AEMO	Australian Energy Market Operator
APZ	Asset Protection Zones
Asl	Above Sea Level
BESS	Battery Energy Storage System
CASA	Civil Aviation Safety Authority
CMP	Construction Management Plan
DC	Direct Current
DRP	Decommissioning and Rehabilitation Plan
DPTI	Department of Planning, Transport and Infrastructure
EMF	Electromagnetic Fields
EMP	Environmental Management Plan
EPA	Environment Protection Authority
ESCOSA	Essential Services Commission of South Australia
FTE	Full Time Equivalent
GHG	Greenhouse Gases
LGA	Local Government Area
MW	Megawatt
MWh	Megawatt hour
NEM	National Electricity Market
OEMP	Operational Environmental Management Plan
OP	Observer locations
OTR	Office of the Technical Regulator
PBS	Performance Based Standards
PR	Planning Report
Project	Robertstown Solar
PV	Photovoltaic
PVS	Photovoltaic Energy Generation System
RFI	Radio Frequency Interface
RO	Route locations
RET	Renewable Energy Target

Abbreviation	Description
The Act	<i>Development Act 1993</i>
TIA	Transport Impact Assessment
SA	South Australia
SARIG 2018	South Australian Resource Information Gateway
VIA	Visual Impact Assessment

CONTENTS

Quality Assurance and Declaration	i
Executive Summary.....	ii
Project Land Location	ii
Project Area Selection	iii
Consultation	iv
Project Description	v
Statutory Planning Context	vi
Environmental Assessment	vi
Visual Amenity.....	vi
Traffic and Transport.....	vii
Biodiversity	vii
Cultural Heritage	viii
Land Use	viii
Flooding	ix
Hydrology	ix
Soils and Salinity	ix
Surface Water and Erosion.....	ix
Groundwater	ix
Water Resource	ix
Climate.....	x
Noise.....	x
Bushfire.....	x
Air Quality.....	x
Electric and Magnetic Fields	xi
Socio-Economic	xi
Glint and Glare.....	xi
Environmental Management Framework	xii
Conclusion	xii
Abbreviations	xiii

1.	Introduction	1
1.1.	Approvals Sought.....	1
1.2.	Timing	2
1.3.	Staging of Construction Works and Building Rules Consent	4
1.4.	Objectives	5
1.5.	Proponent.....	6
2.	Land Description	7
2.1.	Project Area Selection	7
2.2.	Project Area Context	8
2.3.	Project Land.....	11
2.4.	Existing Land Use Operations	13
3.	Project Description	15
3.1.	Project Capacity.....	15
3.1.1.	Description of Development	15
3.2.	Project Design and Layout.....	16
3.2.1.	Single Axis Panel Solar Photovoltaic Modules.....	17
3.2.2.	Module Foundation Systems.....	18
3.2.3.	Inverter Stations	18
3.2.4.	Solar Modules Connection to Inverter Stations	18
3.2.5.	Project's Switchyard/Substation	19
3.2.6.	Battery Energy Storage Systems (BESS)	19
3.2.7.	Synchronous Condensers	20
3.2.8.	Administration and Controls Area.....	20
3.2.9.	Control Room and Site Office / Maintenance and Spare Parts Buildings	20
3.2.10.	Car Parking	21
3.2.11.	Amenities.....	21
3.2.12.	Laydown/Compound Area	21
3.2.13.	Site Access and Internal Access Roads	21
3.2.14.	Drainage Works, Including Stormwater Management System	21
3.2.15.	Fencing and Security	21
3.2.16.	Lighting	22

3.2.17.	Lightning Protection	22
3.2.18.	Landscaping	22
3.2.19.	Connection to ElectraNet’s Robertstown Substation	22
3.2.20.	Final Project Layout	23
3.3.	Project Phases	24
3.3.1.	Construction Phase.....	24
3.3.2.	Construction Workforce	25
3.3.3.	Temporary Construction Facilities	25
3.3.4.	Temporary Construction Camp	25
3.3.5.	Utilities	26
3.3.6.	Vehicle Movements.....	26
3.3.7.	Waste Management.....	27
3.3.8.	Stormwater Management.....	27
3.4.	Operational Phase	27
3.4.1.	Utilities	28
3.4.2.	Vehicle Movements.....	28
3.4.3.	Waste Management.....	28
3.4.4.	Stormwater Management.....	29
3.5.	Decommissioning Phase.....	29
4.	Strategic Context	31
4.1.	Alignment with National Policy Objectives	31
4.2.	Alignment with State Policy Objectives.....	31
4.3.	Alignment with Mid North Region Plan.....	33
4.4.	Alignment with Goyder Council Strategy	34
5.	Statutory Context	36
5.1.	Development Approval	36
5.1.1.	Public Notification	36
5.1.2.	Statutory Referrals	36
5.2.	Additional Approvals	36
5.3.	Development Plan Assessment	37
6.	Community and Other Stakeholders	39

6.1.	Key Stakeholders	39
6.2.	Engagement Programme.....	40
6.3.	Community and Stakeholder Response	40
7.	Key Environmental Issues.....	41
7.1.	Visual Impact and Landscape	41
7.1.1.	Existing Environment.....	41
7.1.2.	Potential Impacts.....	41
7.1.1.	Mitigation Measures	42
7.2.	Land Use	42
7.2.1.	Existing Environment.....	42
7.2.2.	Potential Impact	42
7.2.3.	Mitigation Measures	43
7.3.	Biodiversity.....	43
7.3.1.	Existing Environment.....	43
7.3.2.	Potential Impact	45
7.3.3.	Mitigation Measures	45
7.4.	Soils and Salinity	46
7.4.1.	Existing Environment.....	46
7.4.2.	Potential Impact	46
7.4.3.	Mitigation Measures	47
7.5.	Surface Water and Erosion.....	47
7.5.1.	Existing Environment.....	47
7.5.2.	Potential Impacts.....	48
7.5.3.	Mitigation Measures	49
7.6.	Flooding.....	50
7.6.1.	Existing Environment.....	50
7.6.2.	Potential Impacts.....	50
7.6.3.	Mitigation Measures	50
7.7.	Groundwater	50
7.7.1.	Existing Environment.....	50
7.7.2.	Potential Impacts.....	51

7.7.3.	Mitigation Measures	52
7.8.	Climate.....	53
7.8.1.	Existing Environment.....	53
7.8.2.	Potential Impacts.....	53
7.8.3.	Mitigation Measures	53
7.9.	Noise.....	53
7.9.1.	Existing Environment.....	53
7.9.2.	Potential Impacts.....	54
7.9.3.	Mitigation Measures	54
7.10.	Archaeology.....	55
7.10.1.	Existing Environment.....	55
7.10.2.	Potential Impacts.....	56
7.10.3.	Mitigation Measures	56
7.11.	Bushfire	57
7.11.1.	Existing Environment.....	57
7.11.2.	Potential Impacts.....	58
7.11.3.	Mitigation Measures	58
7.12.	Traffic and Transport.....	58
7.12.1.	Existing Environment.....	58
7.12.2.	Potential Impacts.....	59
7.12.3.	Mitigation Measures	61
7.13.	Air Quality.....	62
7.13.1.	Existing Environment.....	62
7.13.2.	Potential Impacts.....	62
7.13.3.	Mitigation Measures	62
7.14.	Electric and Magnetic Fields, and Radio Frequency Interference.....	63
7.14.1.	Existing Environment.....	63
7.14.2.	Potential Impacts.....	64
7.14.3.	Mitigation Measures	64
7.15.	Water Resources	65
7.15.1.	Existing Environment.....	65

7.15.2. Potential Impacts.....	65
7.15.3. Mitigation Measures	65
7.16. Socio-Economic	66
7.16.1. Socio-Economic Benefits	66
7.17. Glint and Glare.....	67
7.17.1. Existing Environment.....	67
7.17.2. Potential Impacts.....	68
7.17.3. Mitigation Measures	69
8. Summary of Mitigation Measures.....	70
8.1. PVS Element and Ancillary Components	70
8.2. BESS Element.....	74
9. Environmental Management and Monitoring	77
10. Conclusion	79
11. References.....	80

TABLE OF FIGURES

Figure 2-1: Location Plan	10
Figure 2-2: Project Land Plan.....	12
Figure 2-3: Key Physical Features of the Project Land	14

LIST OF TABLES

Table 1-1: Development Milestone Timeframes – PVS – Robertstown Solar 1 Pty Ltd	3
Table 1-2: Development Milestone Timeframes – BESS – Robertstown Solar 2 Pty Ltd	3
Table 4-1: State Policy Objectives	32
Table 4-2: Goyder Council Community Plan.....	34
Table 4-3: Goyder Draft Strategic Directions	35
Table 7-1: Estimated Construction Traffic.....	60
Table 8-1: Summary of Mitigation Measures for the PVS Element of the Project.....	70
Table 8-2: Summary of Mitigation Measures for the BESS Element of the Project	74

APPENDICES

APPENDIX 1 Regulatory Endorsement

1.1 Department for Energy and Mining's S49 Endorsement

1.2 Office of Technical Regulator Certificate

APPENDIX 2 Certificate of Titles

APPENDIX 3 Indicative Layouts

3.1 Indicative PVS Operations Layout

3.2 Indicative BESS Operations Layout, Project Substation Layout and Operations and Maintenance Layout

3.3 Indicative Connection Layout to ElectraNet's Robertstown Substation

APPENDIX 4 Typical Construction Camp Layout

APPENDIX 5 Development Plan Assessment

APPENDIX 6 Community and Stakeholder Engagement Report

APPENDIX 7 Visual Impact Assessment

APPENDIX 8 Desktop Ecological Assessment

APPENDIX 9 Desktop Heritage Assessment

APPENDIX 10 Transport Impact Assessment

APPENDIX 11 Socio Economic Impact Assessment

APPENDIX 12 Glint & Glare Assessment

1. INTRODUCTION

Robertstown Solar (Project) is situated approximately 5 km north-east of Robertstown, and 115 km north-east of the State's capital, Adelaide. The Project is within the Local Government Area (LGA) of Regional Council of Goyder. The Project land comprises the Project area on which the PVS, BESS, Project's substation, Operations and Maintenance buildings and associated infrastructure will be built and operated, and land required to connect the Project's elements to ElectraNet's Robertstown Substation. The Project area is approximately 1,800ha.

This Planning Report (PR) has been prepared to explain the environmental, social and economic matters associated with the Project. At this stage the Project is proposed to be an integrated but separately operated grid connected Photovoltaic Energy Generation System (PVS) of approximately 500MW (AC) generation capacity and a 250MW capacity Battery Energy Storage System (BESS) with 1,000MWh of storage. The PVS element, the BESS element and associated infrastructure, together "the Project", requires an estimated capital investment of AUD \$1.17 billion. The Project's detailed design will be completed prior to construction.

Attached as Appendix 1 is Department for Energy and Mining's endorsement of the Project for the purposes of section 49 of the *Development Act 1993* (SA). The Development Application is submitted for the approval of construction, operation and decommissioning of the Project including the Project's connection to the Robertstown Substation.

1.1. APPROVALS SOUGHT

The Development Application seeks development approval for the following Project components and approach:

- Development approval for the construction, operation and decommissioning of the following components:
 - A Photovoltaic Energy Generation System (PVS) of approximately 500MW (AC) generation capacity and associated infrastructure;
 - A 250MW capacity Battery Energy Storage System (BESS) with 1,000MWh of storage and associated infrastructure;
 - Temporary construction components required to construct the Project's PVS element and BESS element including (but not limited to) access points, construction camp, workshops, outbuildings, site office, amenities, laydown areas, waste storage areas, car parking areas, refuelling areas, clean-down facilities, roads, fences;

- Permanent operations components of the PVS element including (but not limited to) the series of mounted photovoltaic modules set out in arrays, inverter/transformer stations, interconnector substations, switching station, all overhead transmission and/or underground cabling and operational, maintenance and control buildings;
 - Permanent operations components of the BESS element including (but not limited to) the battery energy storage area, sheds (if required) and all overhead transmission and underground cabling;
 - Connection of the Project's PVS element and BESS element to ElectraNet's Robertstown Substation and required connection infrastructure including but not limited to overhead transmission and/or underground cabling and associated poles;
 - Infrastructure upgrades to ElectraNet's Robertstown Substation to allow the Project's PVS element and BESS element to export and import electricity into and out of the national electricity grid;
 - Any synchronous condensers if included in the Project;
 - Permanent operations ancillary components of the Project including (but not limited to) all internal roads, car parking areas, fencing, and access points to the road network, and any other relevant matter; and
 - Landscaping plan(s) if required.
- An approval validity timeframe providing for four (4) years after the operative date of the development approval to substantially commence construction, and six (6) years after the operative date of the development approval to substantially complete construction;
 - Temporary construction facilities to be dismantled post construction; and
 - Staging of building rules consent and commencement of construction for different Project elements and/or components, as described in section 1.3 of this document.

1.2. TIMING

Construction, including the commissioning, of a 500MW(AC) PVS element with an integrated; but separately operated 250MW/1,000MWh BESS element is complex, multifaceted and dependant on a number of factors including:

- Development of the required final detailed construction/engineering plans;
- Tender process for the PVS technology and BESS technology, the construction of the PVS technology and BESS technology and the operation of the PVS technology and BESS technology;

- Project financing, which is itself dependent on a number of factors including a feasible development consent, the economic and political environment at the time of construction, the time required for a financial organisation's diligence enquires for an estimated capital investment of AUD \$1.17 billion, the financial arrangements/requirements for constructing the Project and possibly negotiating and entering into offtake agreements;
- Lead times for the delivery from overseas suppliers of the various components for the Project. The lead times are influenced by the selected technology which will not be known until the final design stage. Given the world's current interest in solar development, some components are anticipated to have delivery lead times of up to 2 years from order;
- Phased completion of construction;
- Efficiencies associated with both economies of scale and with reduced demobilisation and remobilisation costs, which influences the timing of the phases for construction; and
- The time required to comply with AEMO's commissioning tests and verification testing requirements prior to grid connection.

To adequately manage the factors influencing the construction of a 500MW(AC) PVS element with an integrated but separately operated 250MW/1,000MWh BESS element, the development timeframes provided in Table 1-1 and Table 1-2 are proposed for the Project with the option of the relevant approval authority being permitted to extend these periods if required.

Table 1-1: Development Milestone Timeframes – PVS – Robertstown Solar 1 Pty Ltd

Milestone	Timeframe Sought
Substantial Commencement	4 years after the Development Approval operative date
Substantial Completion	6 Years after the Development Approval operative date

Table 1-2: Development Milestone Timeframes – BESS – Robertstown Solar 2 Pty Ltd

Milestone	Timeframe Sought
Substantial Commencement	4 years after the Development Approval operative date
Substantial Completion	6 Years after the Development Approval operative date

1.3. STAGING OF CONSTRUCTION WORKS AND BUILDING RULES CONSENT

A project's PVS element, of this size, would typically be constructed in 4 phases. The PVS phases would typically comprise the following works:

- PVS Phase 1: PVS up to approximately 125MW(AC) with associated infrastructure;
- PVS Phase 2: PVS up to approximately 125MW(AC) with associated infrastructure;
- PVS Phase 3: PVS up to approximately 125MW(AC) with associated infrastructure; and
- PVS Phase 4: PVS up to approximately 125MW(AC) with associated infrastructure.

The BESS construction would also typically be phased to meet incremental project maturity.

The BESS grid connection infrastructure is proposed to be constructed adjacent to the switchyard for the Project. The Project seeks development approval to incrementally add to the BESS up to and after, substantial completion, up to a total capacity of 250MW.

The BESS physical grid connection works will be completed as part of substantial completion while the battery capacity and storage will be incrementally added over the life of the Project to allow flexibility in increasing the BESS as technology and commerciality of utility scale batteries matures.

On that basis, it is proposed that once development approval for the entire Project has been obtained, building rules consent will be obtained and construction will proceed in stages.

Works which do not require building rules consent will comprise a separate stage so that construction can commence as soon as practicable subject to compliance with development approval conditions and reserved matters (if any). This stage will encompass such things as site mobilisation activities, establishing temporary laydown areas and facilities, access roads formation or widening, underground cable works and other civil works.

For works that do require building rules consent, it is proposed that building rules consent may be obtained separately for each structure and for each stage of construction as exemplified but not limited to the following list:

- PVS Phase 1: PVS up to approximately 125MW(AC) with associated infrastructure;
- PVS Phase 2: PVS up to approximately 125MW(AC) with associated infrastructure;
- PVS Phase 3: PVS up to approximately 125MW(AC) with associated infrastructure;
- PVS Phase 4: PVS up to approximately 125MW(AC) with associated infrastructure;
- BESS Phased storage area suitable for a BESS up to approximately 250MW(AC) and 1,000/hrs with associated infrastructure;
- Battery units (in incremental sub-stages) up to a total capacity of 250MW;

- Temporary construction components required to construct the Project's PVS element and BESS element including (but not limited to) access points, construction camp, workshops, outbuildings, site office, amenities, laydown areas, waste storage areas, car parking areas, refuelling areas, clean-down facilities, roads, fences;
- Permanent operations components of the PVS element including (but not limited to) the series of mounted photovoltaic modules set out in arrays, inverter/ transformer stations, interconnector substations, switching station, all overhead transmission and underground cabling and operational, maintenance and control buildings;
- Permanent operations components of the BESS element including (but not limited to) the battery energy storage area, sheds (if relevant) and all overhead transmission and underground cabling;
- Connection of the Project's PVS element and BESS element to ElectraNet's Robertstown Substation and required connection infrastructure including but not limited to overhead transmission and/or underground cabling and associated poles;
- Infrastructure upgrades to ElectraNet's Robertstown Substation to allow the Project's PVS element and BESS element to export and import electricity into and out of the national electricity grid;
- Any synchronous condensers if included in the Project; and
- Permanent operations ancillary and associated components of the Project including (but not limited to) all internal roads, car parking areas, fencing, and access points to the road network, landscaping plan(s) if required and any other relevant matter.

The Office of the Technical Regulator (OTR) prescribes technical requirements that Generators must meet in order to lodge an application for Development Approval. In summary the technical conditions to be met include:

- The Generator shall provide either Real Inertia (real physical inertia provided by a synchronous system) or Fast Frequency Response;
- The Generator is connected to the network via a switched connection (breaker and half connection) or other connection approved by the OTR; and
- The Essential Services Commission of South Australia's (ESCOSA) current Generator Licencing conditions must be met.

The OTR has issued a certificate of approval for the Project which is provided in Appendix 1.

1.4. OBJECTIVES

The Project's objectives are:

- To provide a large-scale, grid connected solar power development that can contribute to SA's electricity supply;

- To provide dispatchable clean energy via energy storage in the form of a battery system;
- To contribute to Australia's competitive electricity market with a renewable energy resource;
- To contribute to Australia's growing solar industry;
- To encourage development in regional SA areas;
- To develop infrastructure and technical knowledge that will contribute to the Australian renewable energy industry;
- To assist in reducing electricity prices in South Australia; and
- To assist in South Australia's electricity network and increase resilience to operation of the network.

1.5. PROPONENT

Robertstown Solar 1 Pty Ltd is the special purpose vehicle for the Photovoltaic Energy Generation System (PVS) and Robertstown Solar 2 Pty Ltd is the special purpose vehicle for the Battery Energy Storage Systems (BESS). The PVS element and BESS element and associated infrastructure, together are "the Project".

Energy Projects Solar (EPS) Pty Ltd is the development consultant for the Project.

2. LAND DESCRIPTION

2.1. PROJECT AREA SELECTION

On behalf of Robertstown Solar, EPS Energy undertook an extensive solar site identification assessment across the Eastern Australian National Electricity Network examining potential project areas based on several criteria including:

- Proximity to electrical substations;
- Access to existing electrical substations and capacity of each substation to accept new generation;
- Marginal loss factors and future forecasts;
- Consideration of known solar projects proximate to a proposed project area and the potential for impact on capacity and connection;
- Irradiation levels;
- Agreements with landowners to host a project;
- Utilised land such as land used for agricultural land uses to reduce the likelihood of the solar development encountering significant areas of native vegetation, Aboriginal cultural heritage items or other environmental constraints;
- Environmental analysis of ecology, archaeology and potential environmental constraints including flooding;
- Favourable topography and geotechnical conditions for constructing and operating a solar development;
- Proximity to towns but equally enough distance between the site and urban populated areas;
- Suitable infrastructure surrounding the project area e.g. roads access for construction and operation of a solar development;
- NEM capacity, grid strength and the ever-increasing market demand for renewable energy;
- Favourable response from enquires with the Transmission Network Service Provider (ElectraNet); and
- Details on interstate connectors and relevant known transmission constraints.

The initial assessment of the 1,800ha (approximately) Project area found it met several key criteria including:

- The Project area adjoins and can access the Robertstown Substation;
- Robertstown Substation has the capacity to accept new electricity generation;
- The area has a strong electrical transmission network;
- The landowners of the Project area were receptive to hosting a solar development;

- The Project area is used for agricultural land uses including cropping and grazing thereby reducing the likelihood of the Project encountering significant areas of native vegetation, Aboriginal cultural heritage items or other environmental constraints;
- Suitable infrastructure surrounding the Project area including good State and Local road access to the Project area for construction and operation of a solar development;
- Good irradiation levels; and
- Proximity to the town of Robertstown and Burra but equally enough distance between the Project area and Robertstown.

Based on the positive outcomes of the initial assessment and with strong landowner support the next phase of assessment was commenced including detailed grid connection studies, further financial modelling, specific Project area investigations including preliminary field works to identify any unknown environmental and cultural constraints and preliminary Project design works. The assessment found:

- Power generated by the Project can be exported into the grid without any significant constraints;
- Co-location of the Project close to the Robertstown Substation minimises the connection transmission line distance thereby reducing electrical transmission losses through long transmissions and consequently improving the economic rationalisation of the Project on the Project area;
- The Project will not be constrained by environmental constraints such as flooding, ecology or archaeology; and
- Favourable topography and geotechnical conditions for constructing and operating a solar development.

Based on the findings the Project on the Project area was considered feasible. Consideration then turned to the social aspect of the Project including ascertaining relevant stakeholder opinions on the Project in the Project area's locality.

On behalf of Robertstown Solar, EPS Energy carried out pre-Development Application lodgement community and stakeholder engagement to understand the opinions of relevant stakeholders on the Project in the Project area's locality. Details of the consultation are set out in Section 6 Community and other Stakeholders.

2.2. PROJECT AREA CONTEXT

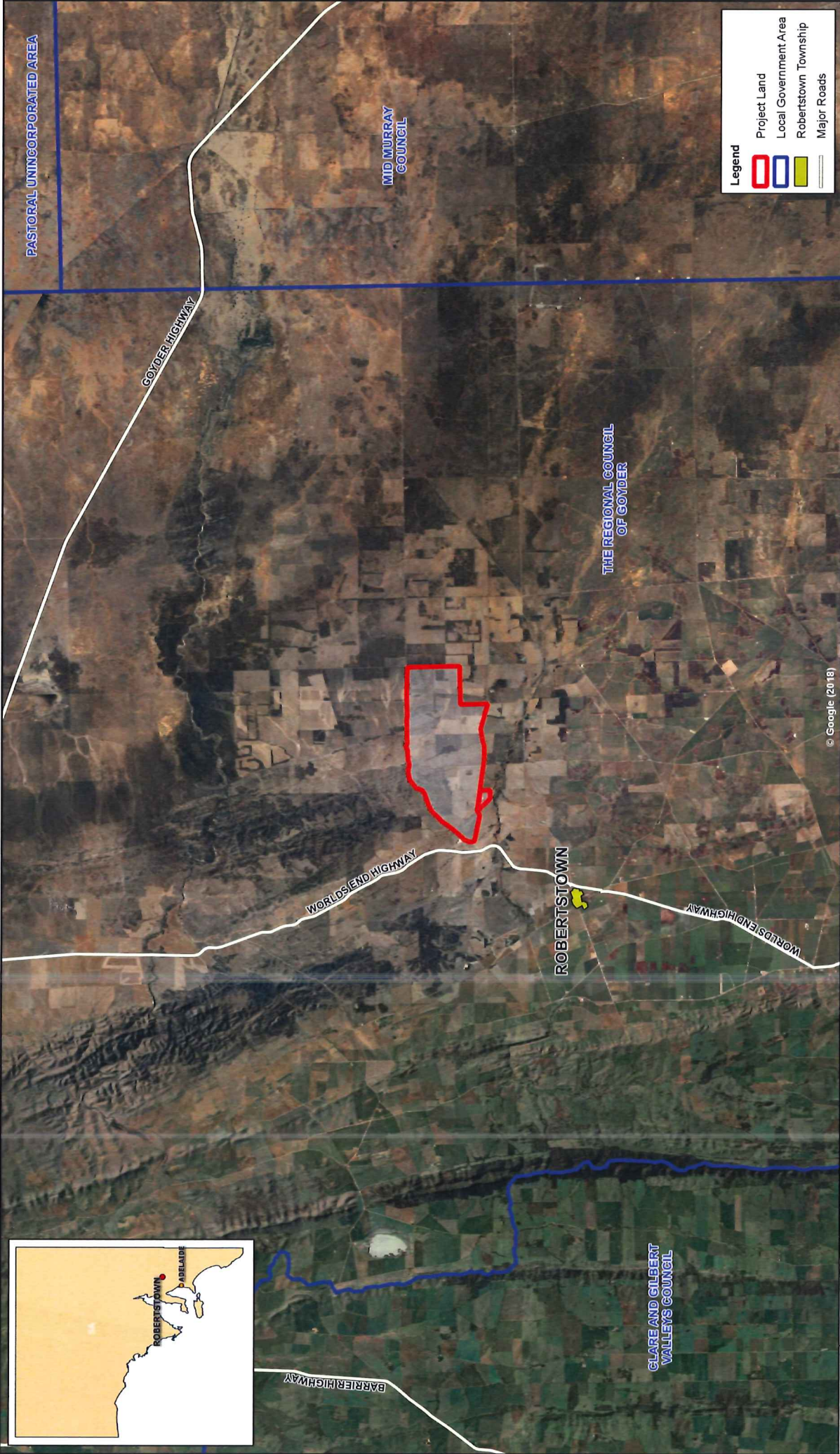
The Project area is approximately 1,800ha (18km²) located in the suburbs of Bright and Geranium Plains in South Australia. The Project is situated approximately 5km north-east of Robertstown, and 115km north-east of the State's capital, Adelaide. The Project is within the Local Government Area (LGA) of Regional Council of Goyder.

The Regional Council of Goyder is in the Mid North region of South Australia. The area is reliant on agriculture, primarily associated with cereal crops, such as wheat and barley, as well as sheep grazing for merino wool, as a mainstay of its economy, with manufacturing and tourism also becoming prominent. The council seat lies at Burra, with a branch office situated at Eudunda.

The Regional Council of Goyder area is approximately 6,718.9 km² with a population of 4,136 (2016 census). The Regional Council of Goyder area is located within the Mid North Region of South Australia which covers about 23,000km² with a population of 33,500 (2016 census).

Agriculture east of Goyder's Line is highly influenced by annual rainfall. The opportunity to diversify agriculturally based income with solar farm lease payments provides significant certainty for host landowners as well as the opportunity for economic multipliers in the Project region.

Figure 2-1 shows the location of the Project land.



<div>Author:</div> <div>Reviewer:</div> <div>A3 Scale:</div> <div>Job Ref/Version:</div>	MB	<div></div> <div></div> <div>Map Projection: GDA 1994 MGA Zone 54</div>	<div>Figure 2-1</div> <div>Location Plan</div>	<div> ROBERTSTOWN SOLAR</div> <div>Robertstown Solar Robertstown SA Australia</div> <div>21/11/2018</div>
	SMC/ JB			
	1:150,000			
	11314/ V06			

2.3. PROJECT LAND

The Project land title particulars are:

Title	Lot/Plan/Section
CT 5565/131	A91 FP212965
CT 5431/657	Section 227
CT 5431/659	Section 232
CT 5465/354	Section 13
CT 5464/828	Section 42
CT 5941/840	Section 43
CT 5561/287	Section 229
CT 5561/89	Section 221
CT 5951/34	Section 44 & 45
CT 5550/784	A91 FP212508
CT 5689/928	A51 DP51338
CT 5689/927	A50 DP51338

The Project land comprises the Project area on which the PVS, BESS, Project's substation, Operations and Maintenance buildings and associated infrastructure will be built and operated, and land required to connect the Project's elements to ElectraNet's Robertstown Substation.

A copy of the Project land Certificates of Titles are attached as Appendix 2

Figure 2-2 shows the Project land.

Legend

Project Land

Robertstown Substation

Allotment Boundary

Author:		MB
Reviewer:		SMC/ JB
A3 Scale:		1:20,000
Job Ref/Version:		11314/ V05

Figure 2-2

Project Land Plan

Robertstown Solar | Robertstown SA Australia

21/11/2018

0

0.25

0.5

0.75

1 km

Map Projection: GDA 1994 MGA Zone 54

© Google (2018)

ROBERTSTOWN

SOLAR

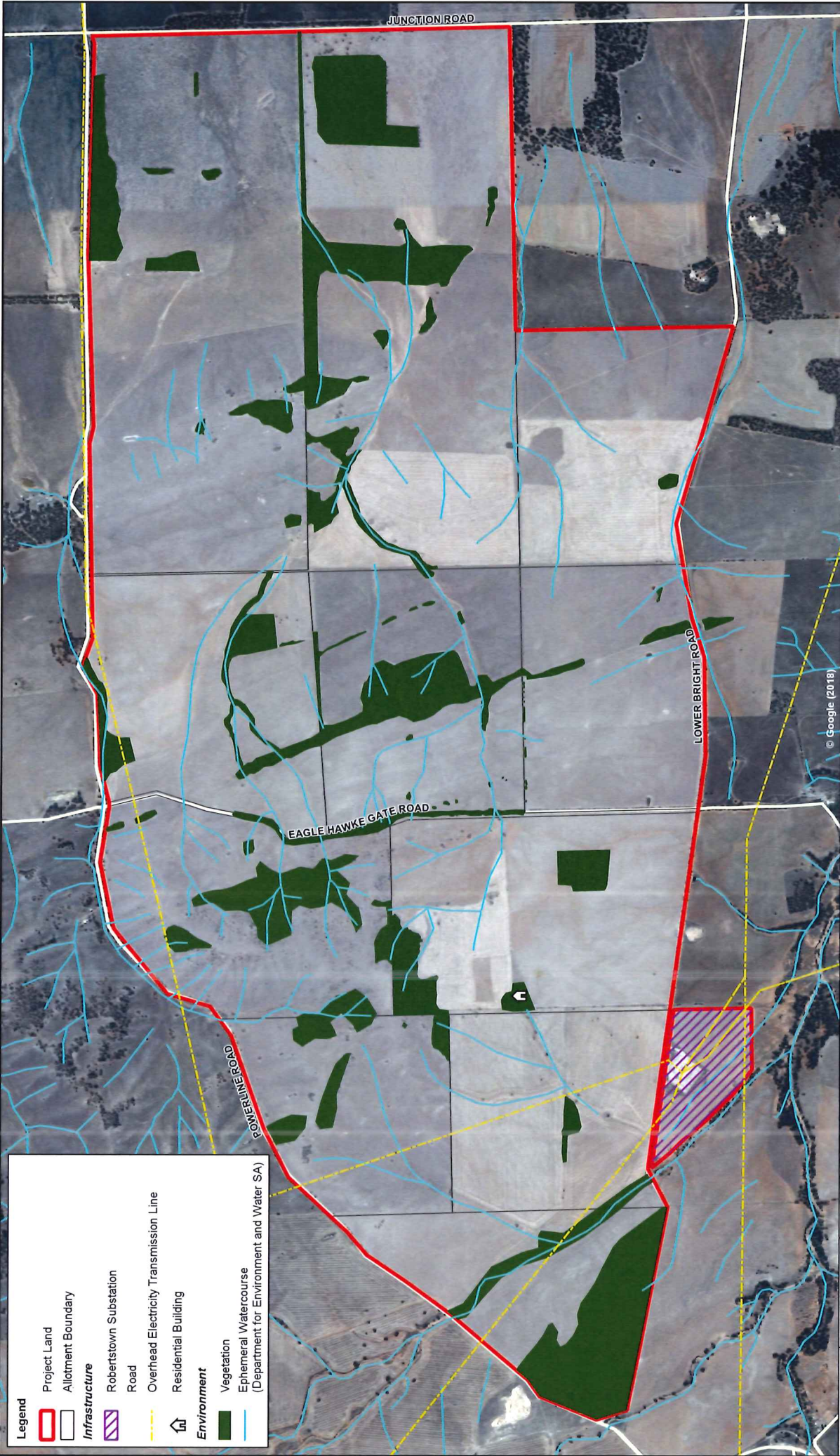
11314_PRR_Project Land.dwg

2.4. EXISTING LAND USE OPERATIONS

The Project area has been used for many years for cereal cropping and grazing. Land within the immediate area of the Project area is predominately used as agricultural land.

There is existing utility scale electricity infrastructure in the immediate area including the Robertstown Substation.

Figure 2-3 shows key physical features of the Project land.



<div>Author: SW</div> <div>Reviewer: SM/JB</div> <div>A3 Scale: 1:19,000</div> <div>Job Ref/version: 11314/ V04</div>	<div><div>00.250.50.751 km</div></div> <div>Accuracy: location and scale of features is indicative only</div> <div>Map Projection: GDA 1994 MGA Zone 54</div>	<div>Figure 2-3</div> <div>Key Physical Features of the Project Land</div>	<div>Robertstown Solar Robertstown SA Australia</div> <div>21/11/2018</div>
<div>ROBERTSTOWN SOLAR</div>			

3. PROJECT DESCRIPTION

3.1. PROJECT CAPACITY

3.1.1. Description of Development

The Project land comprises the Project area on which the PVS, BESS, Project's substation, Operations and Maintenance buildings and associated infrastructure will be built and operated, and land required to connect the Project's elements to ElectraNet's Robertstown Substation.

The Project area is approximately 1,800ha and the Project development footprint is approximately 870 ha (approximately 50% of the Project Area).

The predominance of the development footprint comprises the PVS which will have a maximum capacity of approximately 500MW (AC).

The BESS element of the Project will have a maximum energy storage capacity of 250MW/1,000MWh and depending on the final BESS technology could occupy a footprint of up to approximately 20ha being approximately 2.3% of the Project development footprint or 1.1% of the Project area.

The PVS element & BESS element will be connected to the adjacent Robertstown Substation via 275 kV circuit over-head and poles or underground transmission lines having a route length of between 0.5-3km (approximately) dependant on the final design and location of the Project's transformers and switch gear.

PVS description

Solar photovoltaic (solar panel) technology uses manufactured semiconductor material to absorb and convert sunlight into electricity. Each solar panel contains a series of interconnected cells that convert sunlight directly into electricity. The solar panels produce energy in the form of direct current (DC), which is converted to alternating current (AC) via a solar inverter.

The solar panels will be mounted on single axis tracking racks. The panels will be installed in parallel rows with the spacing being between approximately 4m to 10m depending on the type of the single axis tracking racks selected as part of the final design.

Groups of solar panels are connected to each inverter by underground cabling and the inverters are linked together to collect the total energy being produced. Step-up transformers, that increase the voltage are housed in the inverter containers. Underground or overhead lines are run from each inverter station to the Project's on-site switching substation where the voltage is again stepped up via one or more transformers to match the voltage of the transmission network.

The PVS will connect to the Robertstown Substation via the 275Kv transmission line to the Robertstown Substation allowing the PVS to export a maximum capacity of approximately 500MW (AC) into the national electricity grid.

BESS description

A utility-scale BESS encompasses multiple battery units and associated infrastructure housed in a storage structure or structures.

The BESS will connect to the Robertstown Substation via the 275Kv transmission line to the Robertstown Substation allowing the BESS to export and import electricity into and out of the national electricity grid.

The BESS can support the South Australian electricity grid through a variety of services such as frequency control and short-term network security services and can assist stabilise the South Australian electricity grid, facilitate integration of renewable energy in the State, provide arbitrage and assist in preventing load-shedding events.

3.2. PROJECT DESIGN AND LAYOUT

The Project's integrated but separately operated PVS and BESS elements together with supporting associated and ancillary infrastructure includes (but is not limited to):

- Solar modules – mounted on single axis tracking racks;
- Module footings and racking for solar modules;
- Inverter stations;
- Transformers;
- Switching substation;
- One or more synchronous condensers (subject to requirement);
- Utility scale battery facility;
- Associated underground cables connecting groups of solar panels to inverter stations and underground and/or overhead transmission lines from inverter stations to the Project's switching substation;

- Associated cables and poles to connect the Project to ElectraNet's Robertstown Substation;
- Administration and controls area including:
 - Control room and site office with amenities;
 - Maintenance and spare parts building;
 - Other buildings;
 - Car parking sufficient for employees and contractors during operation;
 - Laydown/compound area and future battery storage area;
 - Internal access roads;
- Drainage works, including stormwater management systems;
- Areas not to be developed e.g. native vegetation areas, heritage areas;
- Security fencing and CCTV;
- Low-level night time lighting; and
- Lightning protection.

Indicative layout and preliminary PVS Operation design drawings are attached as Appendix 3. Illustrative examples of typical project componentry are included within the visual impact assessment at Appendix 7.

The following subsections examine the Project's proposed key components identified in the indicative layout and preliminary PVS Operations design drawings. The Project's final key components will be identified in the final design plans.

3.2.1. Single Axis Panel Solar Photovoltaic Modules

Further site layout assessments and detailed engineering will define the preferred configuration of panels to ensure:

- Maximum exposure to sun;
- Efficient layout of solar panels across the Project area;
- Efficient connection to the substation;
- Ease of construction;
- Efficient access for maintenance and long-term operation; and
- Technology advances can be incorporated.

The solar panels will be mounted on single axis tracking racks. Depending on the type of single axis panel solar photovoltaic modules selected for the final design and layout, the height of the bottom of the solar modules could be in the range of 0.3 to 1.2m (approximately) above ground level while the height of modules could be approximately 2 - 4m above ground level.

Based on preliminary designs the Project's photovoltaic area, including the spaces between the arrays and undeveloped land, will cover the predominance of the 1,800ha Project area. The modules will generally be aligned on the tracking system in a north/south row and rotate in position from east to west.

Prior to the commencement of construction final layout and design drawings will be submitted to the authority specified in the development approval for endorsement.

3.2.2. Module Foundation Systems

Foundation systems for photovoltaic solar panel arrays typically comprise driven piles (most common), screw piles or mass concrete foundations that are sized to resist uplift and lateral loading during wind events.

The results of preliminary geotechnical investigations indicate driven piles is the likely foundation for the Project's geotechnical conditions. Additional investigations will be conducted prior to final design to confirm the Project's optimum foundation solution.

3.2.3. Inverter Stations

The solar panels produce energy in the form of direct current (DC), which is converted to alternating current (AC) via a power conversion unit (inverter), to allow the solar generated energy to be fed into the electricity grid. Utility-scale inverters harvest the maximum power from the solar photovoltaic array over a wide range of operating conditions (e.g. solar irradiation, temperature and shading). Typically, the inverter units will be approximately 3m in height.

The final type, design and therefore quantity of the inverter stations to be used for the Project are yet to be finalised. Final selection will be dependent on several factors including suitability for the Project area, relative cost, maintenance requirements, efficiency and reliability of units available on the market at the time of detailed design.

3.2.4. Solar Modules Connection to Inverter Stations

Groups of solar panels are connected to each inverter by underground cabling and the inverters are linked together to collect the total energy being produced. Step-up transformers, that increase the voltage, are housed in the inverter containers. Underground lines and or overhead transmission lines may be used due to the long distances across the Project area.

These will run from each inverter station to the Project's switchyard/substation where the voltage is again stepped up via one or more transformers to match the voltage of the transmission network. The solar energy generated from the Project will be exported to the transmission network.

Existing SA Power Networks and ElectraNet's Robertstown Substation is located adjacent to the Project's southern boundary. The Project's network connection will be made to the ElectraNet substation via the Project's switchyard/substation. Formal connection enquiries with ElectraNet confirmed the feasibility of connecting to the electricity network at this location.

3.2.5. Project's Switchyard/Substation

275/33/33 kV transformers are likely to be installed to provide reliable supply reticulation to the solar farm. These network connection facilities will be designed, constructed and operated in accordance with all statutory requirements. The number and size of transformers will be a function of technical requirement and confirmed in the Project's final design.

3.2.6. Battery Energy Storage Systems (BESS)

The Project's BESS, to be integrated although operated independently from the PVS, will allow the Project to appropriately distribute power outside PVS generating periods. Utility-scale battery storage structures are typically constructed according to two design methodologies; modular systems and building-based systems. A number of technologies are being assessed to provide the optimum solution for the Project and integration in the South Australian transmission electricity network. The BESS footprint and storage structure is subject to the final technology decision.

At this stage the storage of the battery energy storage system could include a combination of solid structures representative either of typical agricultural style storage buildings e.g. intensive animal keeping sheds used in the Primary Production Zone, or Tesla style battery units, or 40-foot shipping containers. The specific height of storage structures within the battery storage area is yet to be determined.

The Indicative layout and preliminary BESS Operations design drawings are attached as Appendix 3. The BESS storage area will be located near the Project substation (refer to Appendix 3). The battery storage structures to be implemented will be a function of technical requirement coupled with economic viability and confirmed in the Project's final detailed design.

3.2.7. Synchronous Condensers

Fundamentally, a synchronous condenser is simply a large generator similar to those found in thermal power plants, with the difference being that rather than being powered from an external source such as a gas or steam turbine, the generator can be operated as an electric motor. In this way, the synchronous condenser stores rotational energy (inertia). The synchronous condenser can therefore instantaneously absorb/deliver both real and reactive power from/to the grid to maintain grid stability.

The Project may include one or more synchronous condensers to assist in providing inertia for managing power system strength requirements. The synchronous condensers, if required, will most likely be located within the switchyard or substation.

At this stage the storage/housing of a synchronous condenser could be outdoors and/or could include a combination of solid structures representative of typical agricultural style storage buildings e.g. intensive animal keeping sheds used in the Primary Production Zone. The specific height of structures is yet to be determined.

Further detailed assessments are underway to ascertain the option and appropriate sizing of any synchronous condensers. Final design and synchronous condenser inclusion will be a function of technical requirement and confirmed in the final Project design.

3.2.8. Administration and Controls Area

The administration and control area will incorporate several buildings including a single ancillary office building and control room, together with a maintenance and spare parts building. These structures have been located adjacent to Lower Bright Road and sited to allow for ease of access of the workforce and to maximise the area available for solar panels. Amenities and car parking will also be provided in the administration and controls area. This area may also be used as a laydown and storage area during the construction phase.

3.2.9. Control Room and Site Office / Maintenance and Spare Parts Buildings

The proposed buildings will likely be single storey structures with heights of approximately 6m. The control room will be the centralised control area for managing operations associated with the Project. The site office will be the administrative centre for the Project and will house permanent operational staff associated with the facility.

3.2.10. Car Parking

Car parking will be in the vicinity of the control room and site office to accommodate staff, visitors and temporary contractor parking (note that following sign-in to the site, contractors/tradespeople required to access the solar fields will drive their vehicle directly to the site of work and will not require a formal car parking area).

3.2.11. Amenities

Depending on availability and approval the administration and control area may be connected to mains water and electricity supply where available at Lower Bright Road to provide water and electricity services for the buildings. A suitably sized sewage treatment system will be installed to manage wastewater from the amenities.

3.2.12. Laydown/Compound Area

An indicative layout of the Operations administration/controls and laydown/compound area are illustrated in Appendix 3.

3.2.13. Site Access and Internal Access Roads

Site access is proposed from the existing road network surrounding the Project Area. Access will be via existing site access points and possibly additional access points. An indicative internal access road layout and design is provided in Appendix 3. The internal access roads will be designed and constructed to allow for vehicle maneuvering including large vehicle deliveries.

3.2.14. Drainage Works, Including Stormwater Management System

The Project's final design will determine the drainage and stormwater management design.

3.2.15. Fencing and Security

Security fencing will be installed around the perimeter of the Project and within the Project area. Signage will be clearly displayed identifying hazards present within the Project area.

Perimeter fencing will likely be approximately 1.8m chain wire mesh fencing with three strand barb-wire top. Fencing of this nature is required for security, insurance and to minimise wildlife interaction with the Project.

CCTV with infrared capability will be used to manage security on the Project area.

3.2.16. Lighting

Low-level night time lighting will be installed in the administration area for safety and security purposes.

3.2.17. Lightning Protection

Lightning protection will be incorporated into the Project. Lightning protection masts will likely be established for every third or fourth inverter station, with the final numbers and siting to be determined during detailed design. The lightning protection masts are thin, tubular structures, approximately 8m high with a concrete base and earthing.

3.2.18. Landscaping

Given the scale and extent of the proposed development and the low level of visual impact, providing landscaping which is adequate to screen the entire Project area's 19km perimeter is not considered practical. Targeted landscaping may be established to support erosion control and improved amenity adjacent to car parking areas and control room/site office, battery energy storage areas and the Project's substation but this is anticipated to be minimal.

3.2.19. Connection to ElectraNet's Robertstown Substation

To enable the Project's PVS element and BESS element to export and import electricity into and out of the national electricity grid the following works including (but is not limited to) will be required:

- Connection of the Project's PVS element and BESS element to ElectraNet's Robertstown Substation and required connection infrastructure including but not limited to overhead transmission and/or underground cabling and associated poles; and
- Infrastructure upgrades to ElectraNet's Robertstown Substation to allow the Project's PVS element and BESS element.

The Indicative connection layout to ElectraNet's Robertstown Substation is attached as Appendix 3.

3.2.20. Final Project Layout

The indicative PVS Operations layout (Appendix 3) and indicative BESS Operations layout (Appendix 3) depict the Project's development footprint. The PVS final footprint and BESS final footprint will be determined following the completion of detailed design, and influenced by:

- Final selection of panels and other Project components: the physical and operational requirements of the various components required by the Project (e.g. solar panels, inverters and Battery storage system) will influence the final layout, spacing between panels and the number of ancillary components required (inverters, lightning protection etc.);
- Detailed geotechnical investigation: an investigation to determine the geotechnical characteristics of the Project area will influence the final footing selection and may result in alterations to the Project layout; and
- Outcomes of a final network constraints and opportunity analysis to determine export constraints, network constraints and sizing and staging of the Project elements.

As a result, the following information will be submitted to the relevant authority for approval prior to the commencement of construction for each Phase of the Project:

- The final design, specification and layout of all temporary construction components required to construct the Project's PVS element and BESS element including (but not limited to) construction camp, access points, workshops, outbuildings, site office, amenities, laydown areas, waste storage areas, car parking areas, refuelling areas, clean-down facilities;
- The final design, specification and layout of all permanent operations components of the PVS element including (but not limited to) the series of mounted photovoltaic modules set out in arrays, inverter/ transformer stations, interconnector substations, switching station, all overhead transmission and underground cabling and operational, maintenance and control buildings;
- The final design, specification and layout of any synchronous condensers if included in the Project;
- The final design specification and layout of all permanent operations components of the BESS element including (but not limited to) the battery energy storage area, sheds (if relevant), transformers, ancillary connection components and all overhead transmission and underground cabling;
- The final design, specification and layout of all permanent operations associated and ancillary components of the Project including (but not limited to) all internal roads, car parking areas, fencing, and access points to the road network, and any other relevant matter;

- The final landscaping plan(s) if required;
- The final design for the connection of the Project's PVS element and BESS element to ElectraNet's Robertstown Substation and required connection infrastructure including but not limited to overhead transmission and/or underground cabling and associated poles; and
- The final design infrastructure upgrades to ElectraNet's Robertstown Substation to allow the Project's PVS element and BESS element.

3.3. PROJECT PHASES

3.3.1. Construction Phase

The PVS development timeframes are explained in Section 1 "Introduction" provided in Table 1-1.

The BESS development timeframes are explained in Section 1 "Introduction" provided in Table 1-2.

The majority of construction works is associated with the PVS element with relevant BESS phases most likely constructed concurrently. The key construction works required to complete the construction phase include (but are not limited to):

- Construction of internal access tracks and laydown areas;
- Installation of site office, maintenance sheds and other buildings;
- Site preparation earthworks for installation of panel supports;
- Installation of panel supports;
- Solar panel erection;
- Installation of the battery system/technology and battery storage structures;
- Electrical substations and connection between solar panels and central inverters, substations and battery storage;
- Provision of other utility services (electricity, communications, etc.) as required;
- Overhead or underground electrical connections to the Robertstown substation;
- Robertstown Substation infrastructure works;
- Installation of the remaining system components (including synchronous condensers if included);
- Landscaping (if required), fencing and signage; and
- Commissioning.

3.3.2. Construction Workforce

Direct employment generation during the construction period is up to approximately 275 full time equivalent (FTE) jobs. An estimated additional 410 FTE roles are anticipated to be indirectly generated by the Project. Additional support to local employment is also anticipated during the construction period with a preference for local goods and skills if available and practicable and spending in local retail and services by construction employees if available and practicable.

3.3.3. Temporary Construction Facilities

Temporary facilities will be established during construction to provide basic amenities for construction workers and temporary laydown and storage areas for construction materials. The requirements for temporary facilities will be determined by the construction contractor, however are anticipated to include (but not limited to):

- Site office;
- Temporary toilet facilities;
- Multiple Laydown areas; and
- Temporary car parking (informal).

Lay-down areas will be required for the delivery and management of construction material. The construction contractor will determine the lay-down requirements within the Project area. Other temporary construction facilities will most likely be accommodated within the Project area.

3.3.4. Temporary Construction Camp

A temporary construction workers camp on a suitable part of the Project area will likely be the most efficient/effective way to manage the construction workforce during the construction phase.

The construction workers camp would be designed to accommodate up to an estimated 275 equivalent full-time workers during construction.

Approximately 3ha – 5ha is required for the construction workers camp. An example of a typical construction workers camp layout is attached as Appendix 4.

Adequate arrangements will need to be made for the provision of essential services to the construction workers camp including, the supply of water, the supply of electricity, the disposal and management of sewage/waste water, stormwater drainage and general waste management.

The final design, specification and layout of the temporary construction workers camp, including essential services, within the Project area will be submitted to the relevant authority for approval prior to the commencement of construction.

3.3.5. Utilities

The construction contractor will be responsible for providing power and water required to support construction activities. It is anticipated the first priority will be establishment of a permanent auxiliary power supply, so it can be used to supply power during the construction period. It is anticipated construction water requirements will be trucked in.

3.3.6. Vehicle Movements

Construction/commissioning vehicle movements are linked to the phases explained in Section 1 "Introduction".

Based on the estimated level of light and heavy vehicle construction/commissioning vehicles, movements on the highways are not expected to greatly alter existing highway traffic movements.

Available traffic data is limited for Lower Bright Rd, Powerline Rd and Junction Rd but based on discussions with some of the local landowners the roads have relatively minor vehicle flows, except during harvest. The estimated level of light and heavy vehicle construction/commissioning vehicles movements on Lower Bright Rd, Powerline Rd and Junction Rd is not expected to greatly alter the existing roads traffic movements and are within the design criteria of the road.

A Traffic Management Plan for the construction phase will be prepared before the commencement of construction in consultation with DPTI and Goyder Regional Council. The Traffic Management Plan will address construction vehicle access arrangements and identify traffic management measures to address traffic safety and access issues inherent with using oversized vehicles and general construction traffic.

3.3.7. Waste Management

Waste products will be generated during construction. Construction waste management procedures will be implemented via a Construction Management Plan (CMP). Suitable management measures typically include:

- Construction waste will be separated into different streams to facilitate recycling with waste removed from the Project area by a licensed contractor as appropriate;
- Liquid waste (including hydrocarbons, paints and solvents) will be stored in sealed drums or containers in a bunded area before removal from the Project area by an EPA licensed contractor for recycling, where possible, or disposal to a licensed facility; and
- Temporary ablution facilities will be serviced by pump-out tanker trucks, used with offsite disposal by a licensed contractor.

3.3.8. Stormwater Management

The Project's construction has the potential to cause erosion, sedimentation, and pollution of water courses running through the Project area. Suitable key principles that could be incorporated into the Project's detailed design to appropriately manage stormwater runoff include:

- Surface water runoff will be discharged to match existing drainage patterns (if any) as much as possible;
- All drainage works will be designed and constructed to prevent scour and erosion. Additional protection measures will be included as required at locations particularly susceptible to scour/erosion; and
- If practicable all drainage works will be formed to provide a consistent fall along drainage lines and to avoid flat spots, where water may be subject to collection adjacent to the Project's infrastructure.

A soil erosion and drainage management plan will be prepared as part of the CMP.

3.4. OPERATIONAL PHASE

The Project's PVS element and BESS element are expected to operate for approximately 30 years. It is expected up to approximately 15 permanent full-time staff will be required to run the Project during operations. Some of the permanent staff will operate out of the site office while others will operate generally across the Project area. Specialist contractors will be on-call to assist with maintenance activities that will include (but not be limited to):

- Solar panel washing;
- General PVS and BESS equipment maintenance;

- Fence and landscape maintenance; and
- Land management.

Equipment updates and replacements will be required from time to time as equipment fails or is rendered obsolete by improvements in technology.

3.4.1. Utilities

Depending on availability and approval the Project area will be connected to electricity and water at Lower Bright Road.

Requirements for disposal of sewerage during operations are considered small as there will be minimal staff on site at any one time. Sewerage management will likely comprise either:

- Installation of a small on-site sewerage treatment system such as a BioCycle; and/or
- Installing holding tanks to be pumped out and disposed of at a suitably licenced facility.

3.4.2. Vehicle Movements

Operational vehicle movements are expected to be minimal, and not have any significant impact on the State or local road network. During the operational phase staff attendance on site will be up to approximately 15 personnel employed on a full-time basis. Additional staff are expected to be employed on part-time and contract basis, for specialist electrical skills, module cleaning and other maintenance requirements associated with the Project. Operational vehicle movements are not expected to significantly impact on other road users and the local road network.

3.4.3. Waste Management

A limited amount of waste products will be generated during Operations. Operational waste management procedures will be implemented via an Operational Environment Management Plan (OEMP). Suitable management measures typically include:

- Operation waste will be separated into different streams to facilitate recycling with waste removed from the site by a licensed contractor as appropriate;
- Liquid waste (including hydrocarbons, paints and solvents) will be stored in sealed drums or containers in a bunded area before removal from the site by an EPA licensed contractor for recycling, where possible, or disposal to a licensed facility; and
- Management of ablution facilities.

3.4.4. Stormwater Management

The predominance of the Project area (greater than an estimated 1,700 hectares of the Project area's 18km²) will continue to be permeable; covered by the PVS solar array; represent the spacing between the arrays; or be undeveloped land. The areas underneath and surrounding the solar modules will be pervious and therefore most of the Project area will be retained substantially in the current infiltration condition. Consequently, the runoff from most of the Project area, is likely to remain at the same pre-development levels and allow infiltration of rainfall.

Runoff from areas such as the administration and control area, laydown and compound area, inverters stations, battery storage structures and switchyard/substation area may increase compared with current levels, but this is not anticipated to be significant because the areas will likely comprise less than 24ha or 2.6% of the Project's development footprint or 1.3% of the Project area.

Drainage will be designed for all Project-disturbed areas to ensure there is no or minimal increase in developed flow intensity/frequency beyond the Project area boundaries. Suitable key principles that could be incorporated into the Project's detailed design to appropriately manage stormwater runoff include:

- Surface water runoff will be discharged to match existing drainage patterns (if any) as much as possible;
- All drainage works will be designed and constructed to prevent scour and erosion. Additional protection measures will be included as required at locations particularly susceptible to scour/erosion; and
- If practicable all drainage works will be formed to provide a consistent fall along drainage lines and to avoid flat spots, where water may be subject to collection adjacent to the Project's infrastructure.

3.5. DECOMMISSIONING PHASE

The Project would likely be decommissioned at the end of its operational lifespan. In consultation with the landowners, all Project related infrastructure would be removed from the Project area, and the land returned for agricultural use.

Prior to the commencement of Project's operation phase a Decommissioning and Rehabilitation Plan (DRP) that outlines end-of-project decommissioning works (describing the extent of reinstatement and restoration activities upon the removal of the renewable energy infrastructure and associated facilities) will be provided to the relevant authority for approval.

The plan will include but is not limited to;

- a) identification of structures, including but not limited to all solar panels, the control and facility building and electrical infrastructure, including underground infrastructure to be removed, except where such facilities are to be transferred to or in the control of the local network operator, and how they will be removed;
- b) measures to reduce impacts of the development on the environment and surrounding land uses; and
- c) details of how the land will be rehabilitated back to its pre-development condition, including slope and soil profile.

The alternate to decommissioning is to extend the life of the Project however currently it is not possible to determine if extending the life of the Project is a viable option.

4. STRATEGIC CONTEXT

4.1. ALIGNMENT WITH NATIONAL POLICY OBJECTIVES

The Project will assist fulfil Australia's commitment to reducing greenhouse gas emissions as a signatory to the Paris Agreement.

The Project will complement and increase the generation of renewable energy within South Australia and the broader National Electricity Market. Australia's Renewable Energy Target (RET) emphasises the need to reduce greenhouse gases, specifically in the electricity generation sector through the encouragement of additional sustainable and renewable sources. The RET targets both large-scale and small-scale renewable generation. The RET envisages that by 2020, renewable sources will provide 20 percent of Australia's electricity supply. The Project supports the achievement of the RET through generation of additional renewable energy.

Federal Government is considering replacing the RET with a number of options that aim to:

- Put downward pressure on household and business power bills and reduce spot price volatility—more investment and therefore more supply of electricity puts downward pressure on prices;
- Encourage the right investment in the right place at the right time—to meet the obligation, retailers will need to secure power from a variety of sources ensuring an ongoing place for coal, gas, wind, solar, batteries and hydro in the Nation's energy mix;
- Improve reliability—increasing investment in new and existing dispatchable supply;
- Reduce emissions at lowest cost—emissions targets can be met using a range of technology, including existing resources; and
- Is not a subsidy or a tax—allows the lowest cost range of technologies to meet overall targets.

The Project's 500MW(AC) PVS element with an integrated; but separately operated 250MW/1,000MWh BESS element supports the aims of the Federal Government.

4.2. ALIGNMENT WITH STATE POLICY OBJECTIVES

The South Australian Government is reviewing a number of the previous Government's long-standing State renewable energy strategic policies. The Project's alignment with current key Government State policy objectives is summarised in Table 4-1.

Table 4-1: State Policy Objectives

Objective/Target	Project Alignment
South Australia's greenhouse gas emissions	
<p>South Australia's <u>Climate Change and Greenhouse Emissions Reduction Act 2007</u> provides renewable energy and emissions reduction targets. Under the Act, South Australia has a target to 'reduce by 31 December 2050 greenhouse gas emissions within the State by at least 60% to an amount that is equal to or less than 40% of 1990 levels as part of a national and international response to climate change. The Australian Government Department of the Environment reports South Australia's net greenhouse gas emissions were 26.3 million tonnes of carbon dioxide equivalent in 2015/16.</p>	<p>The Project is a renewable energy development with a maximum output capacity of approximately 500MW(AC) from the PVS and storage capacity of 250MW/1,000MWh from the BESS.</p> <p>The Project will annually displace the equivalent of 815,000 tonnes of greenhouse gas emissions, comparable to planting 116,500 trees or removing 326,500 cars from the road each year of its operational life.</p> <p>The Project contributes to South Australia's emissions reduction targets.</p>
SA/NSW Electricity Interconnector	
<p>In July 2018 ElectraNet published a draft report on the proposed construction of a high capacity interconnector between South Australia and New South Wales.</p> <p>South Australian Minister for Energy and Mining Dan van Holst Pellekaan said the proposed project would "close the loop" on South Australia's connection to the national electricity market (NEM) and bring many opportunities.</p> <p><i>"Access to additional electricity if we need it plus the opportunity to export our often over-abundant renewable energy will deliver lower prices and more security for all South Australians".</i></p>	<p>The proposed interconnector will run from Robertstown in South Australia's mid-north to Wagga Wagga in New South Wales, via Buronga. This is a route ElectraNet says would provide the highest net market benefits of the various route scenarios studied and a 'no regrets' solution.</p> <p>The Project will feed into the National Electricity Market through 275kV connections to the adjacent ElectraNet's Robertstown Substation.</p> <p>The Project's co-location with the Robertstown Substation supports the feasibility of the proposed SA/NSW interconnector.</p>
South Australia's Virtual Power Plant	
<p>The South Australian government is embarking on the largest expansion of home battery storage in the world and has reconfirmed its support for Tesla's virtual power plant of solar and Powerwall home batteries.</p> <p>Analysis by Frontier Economics shows the new 250MW power plant is expected to lower energy bills for participating households by around 30 per cent. Additionally, all South Australians will benefit, with lower energy prices and increased energy stability.</p>	<p>The Project is a utility scale solar Photovoltaic Energy Generation System (PVS) and Battery Energy Storage System (BESS) with a maximum output capacity of approximately 500MW (AC) from the PVS and storage capacity of 250MW/1,000MWh from the BESS to feed into the National Electricity Market via ElectraNet's Robertstown Substation.</p> <p>The Project supports the Government aim to lower SA energy bills through increasing supply and competition and increase energy stability.</p>

4.3. ALIGNMENT WITH MID NORTH REGION PLAN

The State Government's broad vision for sustainable land use and the built development of the State is outlined in the Planning Strategy. The relevant volume of the Planning Strategy for the Goyder Council Development Plan is the Mid North Region Plan (May 2011).

The Mid North Region Plan provides a link between broad, state wide planning aims and local, council-specific planning needs, and they work in tandem with key state policies, leading to a consistent approach to land use and development across the state.

The Mid North Region Plan includes the following vision, Principle and Policies for renewable and clean energy:

- *In addition, state and local governments continue to investigate ways to organise land use such that it supports renewable and clean energy technologies. These opportunities will give South Australia a competitive advantage in a carbon-constrained economy. Investment in infrastructure will be critical to realise such opportunities. These initiatives will extend the life and reliability of our water and energy supplies and allow the population and the economy to grow without placing unsustainable demands on our natural resources (P8);*
- *Expanding local electricity generation through renewable energy sources, such as wind farms and gas-fired peak demand plants, which will provide greater capacity for economic activity. This will require expansion of the transmission infrastructure to service this growth (P12);*
- *Enhance development of renewable energy (P14);*
- *Energy supply is limited in many parts of the region. Building design and innovative local solutions (for example, solar, wind and co-generation) can make the best use of energy supplies. There are opportunities to further develop wind farms in several locations across the central and southern parts of the region, which would facilitate the achievement of SASP targets related to renewable energy development (P30);*
- *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 (P30).*
- *South Australia has the potential to be a 'green' energy hub and to help other states achieve the Federal Government's target of 20 per cent renewable energy by 2020 (P32);*
- *Identify land suitable to accommodate renewable energy development, such as wind farms (P36);*
- *Support the development of wind farms in appropriate locations, including the collocation of wind farms and existing agricultural land (P38); and*
- *increasing renewable and low emission energy generation (for example, wind farms) (P62).*

The Project's 500MW(AC) PVS element with an integrated; but separately operated 250MW/1,000MWh BESS element supports the aims of the Federal Government, State Government and supports the Mid North Region Plan's vision, Principle and Policies for renewable and clean energy.

4.4. ALIGNMENT WITH GOYDER COUNCIL STRATEGY

The alignment of the Project with Goyder Council's Community Plan 2012-2032 relevant strategies is summarised in Table 4-2.

Table 4-2: Goyder Council Community Plan

Strategy/Outcome/Action	Project Alignment
<p>Strategy 3: A Resilient Economy</p> <p>Key Outcome: A strong economy that supports jobs growth, opportunities for young people and business development for a diverse community</p> <p>Our Actions (Five Years) 12. Develop stronger regional links with other Councils and relevant industries in areas such as tourism, value adding to primary production and renewable energy projects (Council Role: Initiator/Facilitator)</p>	<p>The Project is a renewable energy project with an estimated capital investment of AUD \$1.17 billion (estimate).</p> <p>The Project will create jobs and provide opportunities for local/regional contractors/suppliers during both construction and operation phases.</p> <p>A construction workforce of up to approximately 275 people over the construction period.</p> <p>During the Project's operations, up to approximately 15 full-time staff are expected in addition to a number of part-time and contract staff for specialist electrical skills, module cleaning and other maintenance requirements.</p> <p>The introduction of renewable energy to the area can generate media attention and may, with the integration with other renewable projects in the region, offer opportunities for eco-philosophy tourism as a draw card for tourism.</p>
<p>Strategy 4: Our Environment and Culture is Valued and Protected</p> <p>Desired Outcome Responsible, well informed management of our natural and built environment and cultural heritage</p> <p>Our Actions (Five Years)</p>	<p>The Project's annual generating capacity is equivalent to reducing 815,000 tonnes of GHG emissions each year for 30 years.</p>

Strategy/Outcome/Action	Project Alignment
Council will lead and encourage community participation in actions that reduce greenhouse gas emissions (Council Role: Leadership)	

The alignment of the Project with the Regional Council of Goyder draft Strategic Directions Report's relevant policy recommendations is summarised in Table 4-3.

Table 4-3: Goyder Draft Strategic Directions

Policy Recommendations	Project Alignment
7.2 Rural Areas 7.2.3. General 4. Work with State Government Departments to ensure that the Development Plan allows primary industries to diversify into new areas and alter current practices to adapt to climate change. This could include the consideration of new 'environmental' land-uses such as solar farming and carbon sequestration.	<p>The Goyder Council Development Plan (Consolidated – 24 November 2016) (Development Plan) is a statutory policy document which guides the type of development that can occur within a council area.</p> <p>The Development Plan envisages the Project as a renewable energy facility within the zone and constituting a component of the Primary Production Zone's desired character subject to implementation of management techniques.</p>

5. STATUTORY CONTEXT

The following section outlines the key legislation and planning instruments relevant to the proposed development.

5.1. DEVELOPMENT APPROVAL

The development application is submitted pursuant to Section 49 of the *Development Act 1993* (the Act).

The Department of Energy and Mining's endorsement of the Project is provided in Appendix 1.

5.1.1. Public Notification

The proposed development has an estimated cost of AUD \$1.17 Billion. Accordingly, public notification pursuant to subsection 49(7(d)) of the Act is required.

5.1.2. Statutory Referrals

In accordance with Section 49 of the Act, and Schedule 8 of the Development Regulations 2008 (the Regulations), statutory referrals are required including:

- Commissioner of Highways; and
- Goyder Regional Council.

5.2. ADDITIONAL APPROVALS

Additional statutory approvals may be required prior to the construction and operation of the Project including:

- Approval for the clearance of native vegetation;
- Authorisation of a planned activity to damage, disturb or interfere with an Aboriginal site or object;
- Network Connection agreement to connect the Project to the adjacent substation in accordance with the National Electricity Rules;
- Electricity Generation Licence for connection to the National Electricity Market in accordance with the requirements of the *Electricity Act 1996*;

- Authorisation to place infrastructure and access tracks across road reserves under the *Local Government Act 1999* and possibly the *Roads (Opening and Closing) Act 1991*; and
- Approval for on-site sewage handling or treatment systems under the South Australian Public Health (Wastewater) Regulations 2013.

5.3. DEVELOPMENT PLAN ASSESSMENT

The Goyder Council Development Plan (Consolidated – 24 November 2016) (Development Plan) is a statutory policy document guiding the type of development that can occur within the council area.

Assessment of the Project against the relevant provisions of the Development Plan provisions is provided in Appendix 5.

The assessment of the Project against the relevant provisions of the Development Plan determined:

- The Project is a type of Renewable Energy Facility contemplated for the Goyder Council area;
- The Project is located on land zoned Primary Industry Zone. The Development Plan expressly seeks the development of Renewable Energy Facilities within the Primary Production Zone;
- The Development Plan acknowledges that given the size of utility scale renewable energy facilities it is difficult to mitigate all impacts;
- Subject to implementation of management techniques set out by the general/Council wide policy regarding renewable energy facilities a level of impacts including visual impacts are to be accepted in pursuit of benefits derived from increased generation of renewable energy;
- The general / Council wide policy comprises general provisions that contain Objectives and Principles of Development Control that establish the development standards or management techniques that apply to renewable energy facilities and provide the yardstick against which the suitability of the Project is measured;
- The key findings of the assessment of the Project against the applicable Development Plan controls include:
 - Primary Production Zone - The Project is sufficiently in compliance with the relevant Objectives and Principles of Development Controls for the Project;
 - Renewable Energy Facilities - The Project is sufficiently in compliance with the relevant Objectives and Principles of Development Controls for the Project;

- Orderly and Economic Development - The Project is sufficiently in compliance with the relevant Objectives and Principles of Development Control of General Provisions - "Infrastructure", "Interface between Land Uses", "Orderly and Sustainable Development" and "Renewable Energy Facilities";
- Visual Amenity – The Project is sufficiently in compliance with the relevant Objectives and Principles of Development Control of General Provisions - "Design and Appearance", "Infrastructure", "Interface between Land Uses", "Landscaping, Fences and Walls", "Renewable Energy Facilities" and "Siting and Visibility";
- Noise - The Project is sufficiently in compliance with the relevant Objectives and Principles of Development Control of General Provision - "Interface between Land Uses";
- Health and Amenity - The Project is sufficiently in compliance with the relevant Objectives and Principles of Development Control of General Provisions - "Interface between Land Uses" and "Waste";
- Flora and Fauna - The Project is sufficiently in compliance with the relevant Objectives and Principles of Development Control of General Provision - "Natural Resources";
- Traffic and Transport - The Project is sufficiently in compliance with the relevant Objectives and Principles of Development Control of General Provision - "Transportation and Access";
- Heritage - The Project is sufficiently in compliance with the relevant Objectives and Principles of Development Control of General Provisions - "Heritage Conservation" and "Heritage Places"; and
- Hazards - The Project is sufficiently in compliance with the relevant Objectives and Principles of Development Control of General Provision - "Hazards".

Conducted on behalf of Robertstown Solar, EPS Energy's assessment of the Project against the relevant provisions of the Development Plan concludes the Project is sufficiently in compliance with the relevant provisions of the Development Plan to warrant development approval.

6. COMMUNITY AND OTHER STAKEHOLDERS

A Community & Stakeholder Engagement Plan was prepared at the Project Preparation Phase to ensure that the engagement for the Project was undertaken in a comprehensive and constructive manner. The Plan is founded on a Statement of Intent and subsequent Aims and Objectives to promote effective community and other stakeholder engagement. The Plan was used as a tool to assist with the planning and management of engagement activities proposed to be undertaken at various stages of the Project including the Pre-development application engagement stage.

Subsequently, a Community & Stakeholder Engagement Report has been prepared with the purpose of communicating the outcomes of the Pre-development application engagement that has taken place. The full report is provided at Appendix 6 and is summarised in the following sections.

6.1. KEY STAKEHOLDERS

On behalf of Robertstown Solar, EPS Energy conducted an audience analysis during the Project Preparation Phase to identify parties known to be potentially impacted by the Project, and those who may have an interest in the Project, vested or otherwise. The following stakeholders have been identified as key to the Project;

- Landowners of the properties forming the Project area and the adjoining properties;
- Key government and agency members;
- Low Carbon Economy Unit within the Department for Energy and Mining;
- ElectraNet;
- Regional Development Australia;
- Federal Member for Grey;
- State Member for Stuart;
- CEO, Mayor and relevant Development Officers of the Regional Council of Goyder;
- The Ngadjuri Nation Aboriginal Corporation;
- The wider Robertstown community and established community groups; and
- The relevant authorities who manage the registered easements across the Project area i.e. ElectraNet; and SA Power Networks.

Additional stakeholders may be identified as the Project progresses over time. Robertstown Solar will continue to review the above list as stakeholders gain or lose interest in participating in the engagement process over the Project's life.

Further, the initial release of Project information was staged with the purpose of directly informing the local community and ensuring the parties considered likely to have the highest level of impact and/or interest in the Project were notified earliest. Details of the staging are outlined in the attached report at Appendix 6.

6.2. ENGAGEMENT PROGRAMME

The Engagement Programme has five key phases which provide effective consultation from Project preparatory phase through to inception, construction, operation and decommissioning stages. This programme aimed to ensure that all relevant environmental, social and economic issues raised by the community and other stakeholders were considered and addressed within the Planning Report. The Engagement Programme Phases are described in Appendix 6.

6.3. COMMUNITY AND STAKEHOLDER RESPONSE

The response from the Pre-Development Application lodgement community and other stakeholder engagement has been positive and supportive of the Project.

From Robertstown's population of 248 (Census 2016), an estimated 52 guests attended the information sessions over the two days (Tuesday 29 May 2018 & Wednesday 30 May 2018). This included seven (7) of the nine (9) adjacent landowners who attended the dedicated Neighbour Information Session. This also included several representatives from the Regional Council of Goyder and ElectraNet.

Overall, community and other stakeholder enquiries have been general in nature with most seeking to understand more about the Project or expressing an interest in participating in the construction phase. Many of the general community comments were related to the Local Community Fund and the potential benefits to the local economy. The adjacent landowners were supportive of the Project. The enquiries from the adjacent landowners included:

- Potential for their land being part of the Project;
- Management of land under the panels; and
- Visual amenity of the solar array.

The response from the key members of State and Local government and other agencies has also been largely positive and supportive of the Project. Key members of the Regional Council of Goyder expressed their commendation of EPS Energy's early and comprehensive engagement approach.

7. KEY ENVIRONMENTAL ISSUES

At this stage the Project is proposed to be an integrated but separately operated grid connected Photovoltaic Energy Generation System (PVS) of up to approximately 500MW (AC) generation capacity and up to a 250MW capacity Battery Energy Storage System (BESS) with 1,000MWh of storage. The PVS element, the BESS element and associated infrastructure, together are “the Project”.

The following sections summarise the outcomes of investigations undertaken to identify, predict and analyse the potential impacts of the Project on the physical environment as well as social, cultural and health impacts and if necessary identify mitigation measures to reduce the potential impact of the Project.

7.1. VISUAL IMPACT AND LANDSCAPE

A Visual Impact Assessment (VIA) has been completed and is attached as Appendix 7. The VIA assesses the existing landscape within the Project Area, as well as the surrounding area, to determine the potential visual impact of the Project to the landscape and visual receptors during the operation phase.

7.1.1. Existing Environment

The landscape within and surrounding the Project area can be described as predominantly rural, typified by flat to undulating land that is sparsely vegetated or utilised for agricultural purposes.

There are potentially 29 residential receptors within a 2km Visual Catchment of the Project area five (5) of which are owned by Project landowners and potential viewpoint receptors who may view part of the Project area from other areas e.g. from the roads, within a 2km Visual Catchment of the Project area.

7.1.2. Potential Impacts

The VIA found that the overall visual impact rating to residential and viewpoint receptors is “Low”. Further, that renewable energy facilities were contemplated by the local Development Plan in the rural landscape.

Based on the Visual Impact Assessment the Project's potential to adversely impact the existing and planned visual landscape is low.

7.1.1. Mitigation Measures

The VIA identifies the following mitigation measures for this potentially low impact during the construction and operation phases, where practicable:

- Stakeholder engagement activities will continue be undertaken to understand relevant landowner and community relationships with visual aspects of the Project;
- The development will occur on land previously cleared of vegetation and/or disturbed;
- Utility buildings or structures will be sited together, away from residences and constructed of materials that are muted in colour;
- The use of reflective materials in construction will be limited;
- Any landscaping that is completed as part of the Project will be selected and designed so it is sensitive to the landscape and visual receptors;
- Any signage will be designed and located so it is sensitive to the landscape and visual receptors;
- Fencing will be sited and designed appropriately to blend with the facility as much as possible; and
- Construction equipment and waste will be removed from the site in a timely manner.

7.2. LAND USE

7.2.1. Existing Environment

The Project area and surrounding properties are used for cropping and grazing. Crops change over time according to market prices, changing demand and water availability.

7.2.2. Potential Impact

The medium-term change of land-use is approximately 1,800ha (18km²). The medium-term change of agricultural land (representing 0.27% of the Regional Council of Goyder area and 0.05% of the Mid North Region of South Australia) is considered very minor relative to the region's agricultural production potential (Based on Australian Bureau of Agricultural and Resource Economics land use data 2011).

The consistent income from the solar lease arrangements will assist each of the Project landowner's agricultural enterprises.

Investigations are being undertaken to assess agricultural co-location opportunities. Sheep grazing or cropping under or between the panels may be feasible during the operation phase.

Internationally examples of co-location in comparable climatic conditions include oilseed, Aloe Vera and Agave plantations in the US, India and Mexico.

On decommissioning the Project, the land will be available for agricultural activities, consequently the Project will not have an adverse impact on the long-term agricultural use of the Project area.

7.2.3. Mitigation Measures

Following the Project's decommissioning the land will be available for agricultural uses.

7.3. BIODIVERSITY

7.3.1. Existing Environment

An assessment of ecological values of the Project area was undertaken to determine the presence of species of conservation significance (i.e. species protected under Commonwealth or State legislation) and to identify any potential impacts on biodiversity.

It is highlighted that only approximately 223ha or 13% of the 18km² Project area contains native vegetation.

The desktop ecological assessment, attached as Appendix 8, and preliminary field flora assessment undertaken in May 2018 determined the dominant landform in the Project area is "*undulating stony plain which has been extensively cleared for agriculture*" (EBS, 2018). As such, the likelihood of suitable habitat for threatened flora species being present was assessed as very low.

The preliminary field flora assessment conducted in May 2018 was performed in accordance with the Scattered Tree Assessment Method and Bushland Assessment Method derived by the Native Vegetation Council. The field fauna assessment included recording of opportunistic fauna sightings, signs of fauna (e.g. scats and burrows) and fauna habitat.

Targeted searches were conducted for the following species:

- Southern Hairy-nosed Wombat (*Lasiornhinus latifrons*);
- Pygmy Blue-tongue Lizard (*Tiliqua adelaidensis*); and
- Flinders Ranges Worm-Lizard (*Aprasia pseudopulchella*).

Based on preliminary design drawings a number of scattered native trees and clumps of trees are identified to be removed to assist with the construction of the PVS element and BESS element and the Project's effective operation. The majority of scattered trees were considered high value due to their size, the presence of hollows and proximity to other native vegetation.

The ecological assessment noted that none of the scattered trees were considered to provide suitable habitat for any threatened fauna species listed under the *Environment Protection and Biodiversity Conservation Act 1999* and *National Parks and Wildlife Act 1972*.

Further, no species listed under *Environment Protection and Biodiversity Conservation Act 1999* and *National Parks and Wildlife Act 1972* were observed during the surveys.

Two vegetation associations *Lomandra effusa* (Scented Iron-grass) Grassland and *Callitris gracilis*/Eucalyptus spp. Very Open Mallee are located within the western portion of CT 5465/354 where components of the PVS element could be positioned. Avoiding these vegetation associations will be considered as part of the final Project design.

Fourteen (14) bird, two (2) mammal and one (1) reptile species were opportunistically observed during the fauna assessment.

No Southern Hairy-nosed Wombats were observed during the preliminary Project area investigations, however EBS considered there to be potential for their presence and habitat to be located in other parts of the Project area, where components of the PVS element could be positioned.

No Pygmy Blue-tongue Lizards were observed during targeted assessment and it was established that there is no suitable habitat for the Pygmy Blue-tongue Lizard in the Project area.

No Flinders Ranges Worm-Lizards were observed during targeted assessment and it was established that it is highly unlikely that the Flinders Ranges Worm-Lizard would be present in the small areas of disturbed and fragmented habitat on the Project area.

7.3.2. Potential Impact

The Project area was selected due to its high-level of disturbance and associated historical vegetation clearance.

A number of individual scattered trees and clumps of trees to assist with the construction of the PVS and BESS elements and the Project's effective operation may need to be removed. The scattered tree species that may need to be removed are:

- *E. socialis* (Beaked Red Mallee);
- *E. porosa* (Mallee Box); and
- *E. phenax spp. phenax* (White Mallee).

Any adverse impact on native vegetation or ecosystems that cannot be avoided will be submitted to the Native Vegetation Council for approval as required.

Perimeter fencing is proposed for not only security, but for safety of fauna. Fencing will minimise opportunities for wildlife to interact with the solar infrastructure area and the potential for fauna to be harmed, or damage infrastructure.

Based on the preliminary biodiversity investigations the Project's potential to adversely impact the existing biodiversity environment is low.

7.3.3. Mitigation Measures

The biodiversity investigations along with several other investigations have informed the Project's preliminary layout and design.

A key criterion for selecting the Project area was most of the area used for cropping is cleared of native vegetation to allow efficient cropping practices. An aim of the Project's layout and design is to position as much of the Project's development footprint, as is technically possible, on the cropped land thereby avoiding the need to remove native vegetation.

The Project's development footprint that cannot be located on cropped land has been designed to avoid significant areas of native vegetation.

Where scattered native paddock trees and/or clumps of native paddock trees will adversely impact the construction of the PVS element and/or BESS element and/or the Project's effective operation the native vegetation will need removal.

The Project's preliminary layout and design has endeavored to avoid the unnecessary clearance of native vegetation for the Project's construction and operation. Suitable mitigation measures for this potentially low impact typically include:

- Removal of large areas of vegetation be avoided and minimised, as far as practicable, as part of the final design;
- A targeted wombat survey be completed prior to construction to confirm the presence of Southern Hairy-nosed Wombats and burrows. The targeted survey will inform the appropriate management options if required;
- Hollows, coarse woody debris and litter to be translocated into native vegetation patches, as far as practicable, within the Project area as scattered trees are removed;
- Weed and pathogen hygiene measures will be employed as part of the removal process to ensure that no new weeds or other pathogens are introduced to existing native vegetation; and
- An Application for approval to clear native vegetation under Division 5 of the Native Vegetation Regulations 2017 be submitted to Native Vegetation Council based on the Project's final design.

7.4. SOILS AND SALINITY

7.4.1. Existing Environment

Preliminary geotechnical investigations indicate that the Project area has a rocky/gravelly surface, underlain by a number of geological units. The subsurface conditions can be generally described as silty gravel, silty clay, siltstone, clayey sand, clay, gravel and calcrete.

The South Australian Resource Information Gateway (SARIG 2018) Salinity non-watertable (soil salinity) mapping layer identifies the Project area as having low to moderately low salinity. The SARIG 2018 Salinity watertable induced (soil salinity) mapping layer identifies the Project area as having negligible salinity.

7.4.2. Potential Impact

The potential for the Project to exacerbate soil erosion is considered in Section 7.5, while this section addresses the potential impacts of the Project on soil physical and chemical attributes.

Agricultural soils are commonly detrimentally affected by compaction, acidification, structural decline, loss of organic matter and fertility, and salinity. These can be due to a combination of factors such as removal of native vegetation, cultivation, the type of crop or pasture grown, irrigation and specific farming practices.

The Project area soils are understood not to be adversely impacted by the listed impacts. Nonetheless, it is likely that when compared to native soils in their pre-farming condition, there have been changes due to cultivation.

The Project will involve short-term construction, followed by possibly decades of the land being inactive. The limited or no cropping and consequently limited use of farm machinery on the Project area will be beneficial for the soils. While constructing the Project will require removal of some vegetation and the Project's operations will require water to clean the PVS panels from time to time these activities will not lead to an increase in the Project area's typical groundwater levels and/or the leaching of salts, consequently the Project will not contribute to an increase in salinity levels.

7.4.3. Mitigation Measures

No specific mitigation measures are required because the Project is not expected to adversely impact the existing soil and salinity environments.

7.5. SURFACE WATER AND EROSION

7.5.1. Existing Environment

The Project's area is slightly undulating between 244m above sea level (asl) and 362m asl comprising cleared land historically used for cropping and vegetated land used for grazing. Rainfall on the Project area predominately infiltrates and during high rainfall some of the rain is captured by ephemeral watercourses and drainage lines on the Project area that flow into the areas water system including small dams on the Project area.

The Project is located within the Murray Darling Basin Water Management Area and Rangelands Natural Resource Management District. The Rangelands sub-region lies outside the South Australian agricultural zone, due to the landscape's low and variable rainfall. Mean annual rainfall in the landscape can be greater than 500mm in the north-eastern Mt Lofty Ranges, but typically annual rainfall is less than 250mm. The Project area is not located in the Murray Floodplain or within the River Murray protected area.

The major waterway in the area is the Burra Creek and its associated catchment approximately 15km from the Project area. The Project area is not located in the Burra Creek Catchment area. The second most important waterway in the area is the Spring Hut Creek approximately 5km south of the Project area. An ephemeral watercourse running through the western portion of the Project area feeds into Spring Hut Creek.

Figure 2-3 shows there are ephemeral watercourses and drainage lines on the Project area. As ephemeral watercourses are drainage lines or overland flow paths they do not hold permanent water and only run during high rainfall.

The Project area has minor water erosion caused from the flow of water during high rainfall and minor wind erosion. The potential for water or wind erosion is partly reduced by existing cropping practices and pasture management which is dependent on rainfall frequency.

7.5.2. Potential Impacts

The largest component of the Project's operation is the PVS solar array layout, including the spacing between the arrays, anticipated to occupy approximately 99% of the Project area. The areas underneath and surrounding the solar modules will not be impervious and allow infiltration of rainfall. Earthmoving activities required for the PVS solar array layout are expected to grade areas suitable for the single axis tracking system. These activities will remove vegetation, if existing, exposing soils to erosive forces (e.g. wind and rain).

Construction of the Project will require earthmoving activities (topsoil stripping and contouring) for the internal access roads, parts of the PVS area, hardstands, BESS storage area, laydown and site infrastructure (inverters, demountable buildings, etc.). These activities will remove vegetation, if existing, exposing soils to erosive forces (e.g. wind and rain). The earthmoving activities can result in erosion and sediment release, deterioration of water quality and changes to surface runoff volume and overland flow paths.

Erosion control measures to be adopted during construction will be further detailed and implemented as part of the Environmental Management Plan suite to be prepared as indicated at Section 7.5.3 and Section 9 of this report.

The use and storage of fuels and chemicals for light vehicles, plant and construction equipment may potentially result in surface water or groundwater contamination through spills, leaks or other uncontrolled releases.

Surface water and Ground water pollution control measures to be adopted during construction will be further detailed and implemented as part of the Environmental Management Plan suite to be prepared as indicated at Section 7.5.3 and Section 9 of this report.

Approximately 24ha or approximately 1.1% of the Project area could be occupied by the administration and laydown compound area, substation, invertors, BESS storage area and internal access roads.

These areas could potentially increase the runoff volumes and velocities and consequently erosion and migration of sediment, though given the small size of this part of the development footprint any adverse impact is considered low.

Surface water, erosion and sediment management control measures to be adopted during construction and operation will be further detailed and implemented as part of the Environmental Management Plan suite to be prepared as indicated at Section 7.5.3 and Section 9 of this report.

The Project will include a wastewater treatment system for workforce. Discharge of treated sewage from the ablution block has the potential to decrease groundwater quality (e.g. through increased biological oxygen demands) if the sewage is not adequately treated or if the lining has not been appropriately designed the evapotranspiration bed could seep into the surrounding area.

Wastewater control measures to be adopted during construction and operation will be further detailed and implemented as part of the Environmental Management Plan suite to be prepared as indicated at Section 7.5.3 and Section 9 of this report.

The Project's potential to adversely impact the existing surface water and erosion environments is low.

7.5.3. Mitigation Measures

Suitable mitigation measures for this potentially low impact typically include:

- During construction, main access tracks will be permanently gravelled where required;
- Rows of PV panels rotate and will be separated from the next row, so providing an infiltration area and sunlight to potential co-located agricultural activities or pasture;
- If practicable the ground under and adjacent the PV panels will be used for co-located agricultural activities and may be sown with a permanent pasture mix;
- If practicable the Project area will include co-located agricultural activities such as pasture managed by controlled grazed (most likely with sheep) to maintain ground cover density and manage the sward length;
- During the construction and operation phases an erosion and sediment control plan for each phase will be developed detailing the control measures to be implemented;
- Sewage treatment and disposal to be conducted in accordance with relevant Australian Standards and local regulations/approval; and

- During the construction and operation phases a storage and handling of chemical and hazardous materials management plan for each phase will be developed detailing the control measures to be implemented.

7.6. FLOODING

7.6.1. Existing Environment

The Project area is not mapped as subject to inundation and is not located in the Murray Floodplain or within the River Murray protected area or within a local Catchment area.

7.6.2. Potential Impacts

The Project will not have a demonstrable impact on local flooding.

7.6.3. Mitigation Measures

No specific mitigation measures are required because the Project is not expected to adversely impact the existing flooding environment.

7.7. GROUNDWATER

7.7.1. Existing Environment

The 1:100,000 Florieton sheet of SARIG 2018 shows the area in which the Project is located to be underlain by several geological units. The following units are expected on the Project area:

- Qha – Undifferentiated Holocene Alluvial/Fluvial Sediments;
- Qp/Ca – Calcrete – Pleistocene;
- Qa – Undifferentiated Quaternary Alluvial/Fluvial Sediments;
- Nds – Saddleworth Formation, Mudstone, Siltstone, Shale, partly carbonaceous – Neoproterozoic;
- Nya – Appila Tillite, Tillite, Quartzite, Siltstone, Massive, Grey – Neoproterozoic; and
- Nms6 – Skillogalee Dolomite, pale dolomite Neoproterozoic.

Preliminary geotechnical investigations in May 2018 of some of the Project area noted;

"The encountered ground conditions correlate well with the expected regional geology. The Qp/Ca (Calcrete) unit was encountered as either calcrete or calcareous Silty/Sandy CLAY. This is a common occurrence within this unit, as calcrete thickness and strength is highly variable over very short distances.

Within the Neoproterozoic units, the depth to rock was highly variable. The Holocene alluvial/fluvial sediments were generally encountered as a lower strength unit than their Quaternary counterpart, with either cohesive or granular soils encountered."

The SARIG 2018 groundwater mapping layer indicates the Shallow Standing Water Level at 20m Below Ground Level (BGL). The Shallow Standing Water Level represents the depth to standing water of the shallowest aquifer only. Other aquifers may well give rise to standing water at significantly different depths.

7.7.2. Potential Impacts

Construction works will involve earthworks and limited vegetation clearing for the erection of the PVS solar panels, substation, BESS storage area, buildings, internal access roads and other infrastructure. During operation, the primary land management activities will likely relate to erosion and sediment control.

Potential geology, topography and soil impacts on the environment due to site activities include:

- Increased risk of erosion and sediment mobilisation due to alterations to drainage patterns and stormwater flows during high rainfall events. Erosion risk is higher where Project works encroach on drainage lines;
- Exposure of soil to erosive forces (wind and rain) causing soil erosion and sediment transport that can result in:
 - Deterioration of the receiving environments water quality during ephemeral flows;
 - Sedimentation of vegetated areas resulting in reduced vegetation growth/health; and
 - Reduced air quality (dust impacts) of neighbouring agricultural operations.
- Loss of topsoil integrity from improper removal or storage;
- Entrainment of soils off-site by construction vehicles and machinery leading to sedimentation external to the Project area;
- Physical degradation of soil as a result of the use of heavy construction machinery; and

- Soil contamination as a result of hazardous and other chemicals spills.

Groundwater was not encountered during site investigations. The May 2018 preliminary geotechnical investigation report states *“groundwater was not encountered during the investigation. Based on the information in regional groundwater maps (SARIG 2018) groundwater is not expected within the upper 20 BGL.”*

While the Project is not expected to directly interfere with groundwater, activities have the potential to impact groundwater quality through the accidental release of contaminants to the environment. These water affecting activities associated with the Project may include:

- Construction activities (e.g. operation of heavy machinery);
- Waste storage;
- Ablutions;
- Sewerage systems;
- Operation of the substation and inverters;
- Operation of heavy vehicles; and
- Storage of oils, hydraulic fluids, greases, coolants and other maintenance items including minor amounts of cleaning solvents, paints and thinners.

Contaminants, if released, have the potential to reach the water table via infiltration and recharge from the point of release or via stormwater mobilisation and subsequent infiltration.

The Project’s potential to adversely impact the existing groundwater environment is low.

7.7.3. Mitigation Measures

Suitable mitigation measures for this potentially low impact typically include:

- Erosion and sediment control devices will be installed where necessary and monitored to assess efficacy of erosion and sediment control measures;
- No unnecessary clearing or earthworks;
- Measures implemented to control flow velocities in such a manner that prevents soil erosion along drainage paths;
- Ensure the use of appropriately designed laydown areas for vehicles and machinery and storage areas for chemicals, oils and fuels;
- Make available spill kit(s) within the operational and maintenance area;
- Ensure all staff to be made aware of spill response procedures and the requirement to report any spills or leaks;
- Ensure regular maintenance and checks of heavy vehicles, machinery and equipment to identify potential leaks; and

- All chemical storage vessels are to be bunded and/or constructed on impermeable surfaces in compliance with relevant Australian Standards.

7.8. CLIMATE

7.8.1. Existing Environment

South Australia's *Climate Change and Greenhouse Emissions Reduction Act 2007* provides emissions reduction targets to be achieved by 2050.

7.8.2. Potential Impacts

The Project will deliver clean and renewable energy to the South Australian people in the face of climate change, assist in meeting renewable energy targets for the State and the nation, displace the annual equivalent of 815,000 tonnes of greenhouse gas emissions, comparable to planting 116,500 trees or removing 326,500 cars from the road and provide clean energy to power an equivalent of 144,000 homes per annum for the Project's life.

The Project will make a significant contribution to achieving the State emission reduction targets.

7.8.3. Mitigation Measures

The Project is a mitigation measure, contributing to lower GHG. Other measurable GHG mitigation measures could include where practicable:

- Efficient PV components and Project design to maximise electricity production;
- Components updated as they become obsolete or superseded by more efficient technologies, as required; and
- Panels will be maintained to maximise solar collection.

7.9. NOISE

7.9.1. Existing Environment

The Project area is located within an agricultural area, which generally has a low levels of existing background noise. Agricultural noise emissions primarily occur when farm machinery is used to prepare the land for cropping, sow crops, harvest crops and move stock.

The Robertstown Substation and associated transmission lines owned and operated by ElectraNet running through the southern part of the Project area emit a crackling or buzzing noise named 'Corona', which is the leakage of electricity into the air (which is a natural insulator). Often hard to hear, damp weather increases its audibility.

7.9.2. Potential Impacts

The Project's noise emissions will be generated primarily during some of the construction phase from construction vehicles and machinery.

The Project's construction noise emissions have the potential to impact sensitive receivers some of the time during the construction phase.

The Project will not be a significant source of noise once operational. As such, no noise impacts to sensitive receivers are anticipated during the operation phase of the Project.

The Project's potential to adversely impact the existing noise environment during the construction phase is moderate.

7.9.3. Mitigation Measures

Suitable mitigation measures for construction noise typically include compliance with the Environment Protection (Noise) Policy 2007 i.e.:

- Work on-site will occur within the standard work hours of 7.00a.m. and 7.00p.m. Monday to Saturday;
- Particularly noisy activities will be commenced after 9.00am where the noise exceeds industry guidelines;
- Noisy equipment and processes will be located so that their impact on neighbouring properties is minimised whether by maximising the distance to the premises, using structures or elevations to create barriers or otherwise;
- Equipment will be shut down or throttled down whenever it is not in use;
- Equipment will be equipped with feasible noise control (e.g. mufflers, silenced exhausts, acoustic enclosures);
- Equipment will be properly maintained so as to eliminate or reduce noise as far as practicable;
- Equipment shall be handled so as to minimise impact of noise;
- As far as practicable, off-site or alternative processes that eliminate or lessen noise will be utilised; and

- A complaints hotline will be established and advertised for the receipt of feedback on the Project, including any complaints regarding noise.

Subject to approval from the relevant authority, circumstances, such as extreme summer heat, may warrant construction activity to be permitted outside of the hours of 7.00am and 7.00pm Monday to Saturday or on a Sunday or Public Holiday.

7.10. ARCHAEOLOGY

7.10.1. Existing Environment

An archaeological assessment of the Project was completed to determine the presence of Aboriginal and/or European heritage value within the Project area.

The desktop archaeological assessment is attached as Appendix 9. Preliminary field investigations in May 2018 entailed systematic inspection of high-risk areas using pedestrian survey approach. Survey visibility was high as the majority of the Project area is heavily disturbed by cropping and animal grazing.

Aboriginal

As part of the assessment, a search of the National Native Title register was completed. The Search returned one Native Title claim applicable to the Project area: Ngadjuri Nation #2 (SC2001/002). The contact for this claim is the Ngadjuri Nation Aboriginal Corporation.

A search of the Department of Premier and Cabinet Aboriginal Affairs and Reconciliation, Register of Aboriginal Sites and Objects and the SA Museum Database was completed. The searches returned that no registered or reported sites are located within the current Project area. However, they indicated it is likely that unrecorded Aboriginal sites are located within the undisturbed sections of the Project area.

During the preliminary field investigations survey one Aboriginal site, three isolated artefacts and one culturally sensitive landscape were located.

European

The *Heritage Places Act 1993* makes provision for the identification, recording and conservation of places and objects of non-Aboriginal heritage significance in South Australia. Once registered, State Heritage Places are protected under the *Heritage Places Act 1993* and the *Development Act 1993*.

It is an offence to damage, destroy, excavate or disturb locally and State significant heritage places without consent. There are no State Heritage Places or Local Heritage Places registered in the Project area.

During preliminary field investigations four European sites (G80401R-01, G80401R-02, G80401R-04, G80401R-05) were located. The sites were considered to be significant at a local level.

7.10.2. Potential Impacts

The Project, especially during the construction phase, could result in damaging heritage significant Aboriginal and/or European heritage artefacts within the Project area.

The Project's potential to adversely impact the existing archaeological environment during the construction phase is low - moderate.

7.10.3. Mitigation Measures

The archaeological investigations along with several other investigations have informed the Project's preliminary layout and design.

A key criterion for selecting the Project area was most of the area used for cropping (23% of the Project's area) is cleared of native vegetation to allow efficient cropping practices. An aim of the Project's layout and design is to position as much of the Project's development footprint, as is technically possible, on the cropped land thereby ameliorating the possibility of disturbing Aboriginal and/or European cultural heritage items.

The Project's development footprint that cannot be located on cropped land has been designed to avoid areas that may contain Aboriginal and/or European heritage sites.

Where Aboriginal archaeological value may adversely impact the construction of the PVS element and/or BESS element and/or the Project's effective operation the relevant provisions of the *Aboriginal Heritage Act 1988* will be considered.

Discussions have commenced with the Ngadjuri Nation Aboriginal Corporation regarding the presence of Aboriginal archaeological value within the Project area.

The preliminary cultural heritage works plus further cultural heritage work with the Ngadjuri Nation Aboriginal Corporation will inform the final layout plans.

The Project's preliminary layout and design has endeavored to avoid the disturbance of Aboriginal and/or European heritage sites.

Suitable mitigation measures for this potentially moderate impact typically include:

- Further cultural heritage works with the Ngadjuri Nation Aboriginal Corporation will inform the final detailed Project layout plans;
- Any Aboriginal sites and artefacts will be taken into consideration for the final detailed Project layout plans;
- Compliance with the relevant provisions of the *Aboriginal Heritage Act 1988*;
- The four European Heritage places (G80401R-01, G80401R-02, G80401R-04, G80401R-05) will be avoided;
- European Heritage places (G80401R-01, G80401R-02, G80401R-04, G80401R-05) will be fenced or flagged so that there is a clear, visible boundary for construction personnel during construction;
- Construction personnel will receive a heritage induction prior to work on-site;
- A stop work/site discovery procedure for both Aboriginal and European heritage will be developed prior to the commencement of construction to manage the event of an unexpected find; and
- The Construction Management Plan will include information on recorded heritage items.

7.11. BUSHFIRE

7.11.1. Existing Environment

The Project area is not located within a mapped Bushfire Protection Area (Location SA Map Viewer, 2018).

The Project area contains dry pastures and crop stubble, sparse woody vegetation in areas, and dense stands of woody vegetation in other areas.

Potential ignition that exists in and around the Project area include: stubble burning, littered cigarettes, short circuiting electrical equipment, and lightning strikes.

7.11.2. Potential Impacts

Fires that might spread to the Project area would cause significant damage to wiring, panels and other components. Conversely, fires ignited on Project area could spread to neighbouring land and infrastructure.

To prevent the invasion of stubble or grass fires onto the Project area, the design will incorporate an appropriate Asset Protection Zones (APZ). Ongoing, long-term liaison with adjacent landholders should ensure that the Project area is staffed in the event of neighbouring stubble burns.

The risk of initiating fire from commercial solar panels and inverters is very low due to their high quality and remote sensing/operating systems.

The Project's potential to adversely impact the existing bushfire environment is low.

7.11.3. Mitigation Measures

Suitable mitigation measures for this potentially low impact typically include:

- Installation of only Standard compliant components;
- Ongoing monitoring and review of the solar system performance;
- Installation of thermal overload protection on inverters;
- Controlled grazing or machinery maintenance of pastures under panel arrays; and
- Maintenance of firebreaks.

7.12. TRAFFIC AND TRANSPORT

A Transport Impact Assessment (TIA) has been completed and is attached as Appendix 10. The TIA assesses the potential impact of the Project's construction traffic movements on transport routes and other road users based on an indicative construction scenario.

7.12.1. Existing Environment

Anticipated traffic volumes will be highest during the Project's construction while operational traffic volumes are expected to be minimal.

A Transport Impact Assessment (TIA) attached as Appendix 10 included assessing the potential impact of the Project's construction traffic movements on transport routes and other road users and assessed the potential impact on transport routes and other road users based on the Project being completely operational.

The TIA defined the existing environment as the component delivery route to the Project area. Consequently, the environment includes other road users and the road infrastructure.

While the component delivery route will be finalised as part of the Traffic Management Plan, preliminary analysis indicates the feasible trucking option is that components are shipped to Flinders Port Adelaide and trucked direct to the Project area via National Highway A9 (Port River Expressway, Salisbury Highway) and National Highway A1, National Highway M20, Thiele Highway (B81), Worlds End Highway, Powerline Road and Lower Bright Road.

The National Highway A9 (Port River Expressway, Salisbury Highway) and National Highway A1, National Highway M20, Thiele Highway (B81) and Worlds End Highway are under the care and control of the Department of Planning Transport and Infrastructure (DPTI).

Powerline Road, Lower Bright Road, Eagle Hawke Gate Road, and Junction Road are under the care and control of Goyder Council.

The existing DPTI approved restricted access vehicle routes detailed on the DPTI RAVnet website and reproduced as Figure 4.1 and Figure 4.2 in the TIA shows the existing 26m B-Double approved route for the Port Adelaide to Gawler section of the indicative heavy vehicle route and the existing 26m B-Double approved route for the Gawler to the Project area section of the indicative heavy vehicle route.

Powerline Road, Lower Bright Road, Eagle Hawke Gate Road, and Junction Road are not currently gazetted for 26m B-Double (PBS Level 2) access.

7.12.2. Potential Impacts

The majority of construction works are associated with the PVS element. The TIA is based on a construction scenario of approximately 28 months.

Other road users and key stakeholders including the DPTI and Goyder Regional Council are considered the potential sensitive receivers for the purposes of construction traffic.

Operational vehicle movements are expected to be minimal, and not have any significant impact on the local road network. During the operational phase, staff attendance on site will be up to approximately 15 personnel employed on a full time, on site basis. Additional staff are expected to be employed on part-time and contract basis, for specialist electrical skills, module cleaning and other maintenance requirements associated with the Project. Operational vehicle movements are not expected to significantly impact other road users and the local road network.

Anticipated traffic volumes will be highest during the construction phase. The types of vehicles anticipated to be used during the construction phase include buses to transport workers to and from the Project area (if a temporary construction workers camp on the Project area is not used), light vehicles, heavy construction vehicles and oversized vehicles. A summary of the estimated number of construction vehicle traffic two-way movements estimated to take place during the indicative construction phase is presented in Table 7-1.

Table 7-1: Estimated Construction Traffic

Construction Phase	Light Vehicles	Heavy Vehicles	OD Heavy Vehicles	Total
Months 1-2	10	9	N/A	19
Months 3-4	15	11	N/A	26
Months 5-6	23	17	N/A	40
Months 7-8	34	26	N/A	60
Months 9-10	32	20	N/A	52
Months 11-12	27	21	2	50
Months 13-14	30	21	N/A	51
Months 15-16	32	19	N/A	51
Months 17-18	26	20	N/A	46
Months 19-20	27	21	N/A	48
Months 21-22	30	19	N/A	49
Months 23-24	29	18	N/A	47
Months 25-26	22	11	N/A	33
Months 27-28	17	1	N/A	18

It is important to note both the Project phasing and the construction company's construction methodology, based on the Project's final design, may vary these predicted Project traffic volume estimates.

Based on the TIA findings, the traffic generated by the proposed Project area during the construction and operational phases is very low in comparison to existing traffic volumes for the National Highway A9 (Port River Expressway, Salisbury Highway) and National Highway A1, National Highway M20, Thiele Highway (B81) and Worlds End Highway section of the indicative heavy vehicle route under the care and control of DPTI, and therefore is not expected to compromise the safety or function of this road network.

Powerline Road, Lower Bright Road, Eagle Hawke Gate Road, and Junction Road are under the care and control of the Regional Council of Goyder. While the TIA was unable to source traffic volume data for Powerline Road and Lower Bright Road, the existing traffic volumes are expected to be less than 170 vehicles per day based on data obtained from DPTI that shows Worlds End Highway, within the vicinity of the Project Area, has an annual average daily traffic volume (AADT) of approximately 170 vehicles per day (Location SA – Traffic Volume Estimates, base year 2014). Based on the TIA findings the traffic generated by the proposed Project area during the construction and operational phases is very low and therefore is not expected to compromise the safety or function of the local roads that experience low volumes of traffic.

The other potential impact is the potential deterioration of local road conditions from construction traffic. Although the construction traffic will be for a short time it will possibly contribute to the wear and tear on the approved local road access routes.

The Project's potential to adversely impact the existing State road traffic and transport environment during the construction phase is low. The Project's potential to adversely impact the existing Local road traffic and transport environments during some of the construction phase is low-moderate.

7.12.3. Mitigation Measures

Suitable mitigation measures for the potentially low-moderate impacts will be addressed in the following documents:

- A Traffic Management Plan prepared prior to commencement of construction works in consultation with DPTI and Goyder Regional Council; and
- A dilapidation report or equivalent report, of the road conditions along the nominated local access roads, prepared prior to commencement of construction in consultation with the Goyder Regional Council.

7.13. AIR QUALITY

7.13.1. Existing Environment

There is no known dust deposition or Total Suspended Particles (TSP) data for the site or adjacent areas. It is expected that the local air quality is typical of rural areas, with irregular peaks due to dust storms, regional fires, local stubble burns, cultivation and crop stripping.

7.13.2. Potential Impacts

Installation of the Project will involve trenching, plant and vehicular movements over soil and local unsealed roads and general movement of construction vehicles. This limited activity is not expected to generate more dust than the regular cultivation and crop stripping that currently occurs on the Project area and adjacent paddocks.

The Project is not expected to generate measurable dust during operations, and natural ground cover or sown pasture (if practicable), on what is now a series of cropping paddocks, will reduce the dust generation potential of the Project area.

During operations the Project will contribute towards improving air-quality by reducing Australia's reliance on fossil fuels for electricity generation. The Project equates to the equivalent to the displacement of 815,000 tonnes of greenhouse gas emissions per annum.

The Project's potential to adversely impact the existing air quality environment is low.

7.13.3. Mitigation Measures

Suitable mitigation measures for this potentially low impact typically include:

- Dust management measures will be included in the Construction Management Plan;
- During construction, dust raised on site will be monitored and, if dust is creating a nuisance, a water cart will be used to manage problem areas;
- Dust generation from construction traffic will be monitored and dust suppression activities will be undertaken to minimise dust emissions, if required;
- Wind speed and direction will be monitored, and dust generating activities will be adapted to the wind conditions; and
- Properly maintained equipment will be used to minimise emissions.

7.14. ELECTRIC AND MAGNETIC FIELDS, AND RADIO FREQUENCY INTERFERENCE

7.14.1. Existing Environment

A brief discussion of electrical terminology is useful to aid an understanding of electric and magnetic fields (EMF) and the separate question of radio frequency interference (RFI).

EMF are produced by all electrical equipment, from high voltage power lines to hair dryers, with fields increasing with voltage and current respectively. Both fields drop away rapidly with distance from the source, or due to shielding by insulation or earth (in the case of buried installations). For comparative purposes, in unshielded overhead high voltage transmission wiring, both electrical and magnetic fields would drop to approximately zero within 60 metres from the centreline of the transmission line's conductor bundles.

Radio Frequency Interference (RFI) can be generated by a range of electrical apparatus. The Australian Communications and Media Authority (ACMA) is the Australian regulator of radio communications, telecommunications, broadcasting and the internet, responsible for ensuring compliance with the *Radio Communications Act, 1992*. Part of ACMA's role is to regulate the use of equipment that might affect important telecommunications.

There have been reports of household solar installations detrimentally affecting television reception. It appears that this reported interference is not strictly due to RFI affecting reception but are generally due to poor quality domestic inverters inserting RFI into the household wiring system that disturbs the television set power supply, which in turn cause screen distortion.

The Project area and adjacent land includes utility scale electricity infrastructure comprising a substation and powerlines. The ElectraNet transmission network 275/132kV Robertstown substation is located on Lower Bright Road adjacent to the Project area. Two overhead 275kV transmission lines run north/north west from the substation across the western portion of the Project area within registered easements (refer to Figure 2-3). Two overhead 275kV/132kV transmission lines run south/south east from the substation across adjoining land (refer to Figure 2-3).

An ElectraNet 132kV transmission line running east/west crosses the northern portion of the Project area (refer to Figure 2-3).

7.14.2. Potential Impacts

Substantial EMF's have the potential to interrupt electrical equipment and impact human health.

The Project's various EMF generating components include the PVS panels, the interconnecting buried cables, the direct to alternating current inverters, overhead transmission lines, step up transformers, the BESS and overhead or underground connection to the Robertstown substation.

Essentially EMF increases with voltage and proximity to the apparatus producing, transmitting or consuming electricity. EMF does vary according to specific design and construction parameters such as conductor height, electrical load and phasing, and most importantly, whether the conductors are overhead or buried.

The Project's components that will generate the highest EMF are the Project's substation, BESS and potentially the synchronous condenser(s), together with the possible overhead line connection to the Robertstown substation.

With regards to RFI, solar inverters do emit harmonics but not radio frequency waves and so will not directly affect television transmissions. As discussed previously, poor quality household solar inverters can insert undesirable interference into wiring systems and so indirectly reduce picture quality. Inverters should be tested according to International Electrotechnical Commission (of which Australia is a full member) standards for radio interference, and, depending on the make and model may emit some radiation within acceptable limits. The commercial Inverters being considered for the Project, have been tested to international standards and have proven to not disturb radio signals except in the immediate area around the inverter (approximately <5m).

The Project's potential to adversely impact the existing EMF and RFI environment is low.

7.14.3. Mitigation Measures

Suitable mitigation measures for this potentially low impact typically include:

- Installing electricals to the relevant Australian Standards and guidelines;
- Use of International Electrotechnical Commission compliant commercial inverters;
- Locating the high voltage electrical equipment such as switchyard, substation, BESS and synchronous condensers (if required) appropriately on the Project area; and

- Restriction of access to areas of high voltage electrical equipment such as switchyard, substation, BESS areas and synchronous condensers (if required).

7.15. WATER RESOURCES

7.15.1. Existing Environment

A 2018 report by the World Resources Industry notes the following key points:

- Australia is one of the world's top 20 water-stressed nations;
- Every megawatt hour of electricity generated by coal withdraws around 60,700 litres and consumes about 2,600 litres of water; and
- In the 2017-2018 financial year, Australian's have consumed 147 terrawatt hours of electricity, about 73 per cent of which comes from coal, which equates to around 455 billion litres of water.

7.15.2. Potential Impacts

The Project's general use of water to produce electricity is limited to cleaning the solar panels during the operational phase. Continual improvements in panel cleaning technology is reducing the small amount of water currently required to produce electricity.

The World Resources Industry report notes *"the potential for cheap renewable energy, solar and wind as opposed to fossil fuels, could reduce water consumption country-wide as these technologies use minimal water"*.

If the Project produced 1,000GW/hours of electricity per year this would equate to approximately 63 billion litres of water annually not being required for electricity production.

The Project will contribute to reducing the current amount of water required to generate electricity in Australia.

7.15.3. Mitigation Measures

The Project is a mitigation measure, contributing to lower use of water for electricity generation.

7.16. SOCIO-ECONOMIC

A socio-economic impact assessment has been undertaken to consider the likely outcomes of Robertstown Solar. Key findings of this study are provided below. The full analysis and discussion are provided at Appendix 11.

7.16.1. Socio-Economic Benefits

The Project will:

- Deliver clean and renewable energy for Australia in the face of climate change;
- Assist in meeting renewable energy targets for the State and the Nation;
- For each year of its 30-year operational life, displace the equivalent of 815,000 tonnes of greenhouse gas emissions per annum, the equivalent of offsetting 326,500 cars or providing the equivalent benefit of 116,500 trees per annum;
- Provide clean energy to power an equivalent of 144,000 homes per annum for the Project's life;
- Create industry diversity for the Goyder region;
- Create substantial employment opportunities during Project construction phases;
- Be located in a suitable area with access to existing infrastructure;
- Provide a flexible, low-impact alternative to the existing agricultural land use;
- Generate an estimated economic benefit in the order of \$526.5 million for the broader economy and approximately \$295.4 million as direct domestic Project expenditure;
- Generate up to an estimated 275 equivalent full-time jobs during construction, and a further 410 indirect full-time equivalent jobs;
- Generate up to an estimated 15 equivalent full-time jobs during operations; and
- Provide a direct benefit to the community in the form of a community fund.

To ensure that the employment opportunities, afforded by the Project, are maximised for the local community, an expressions of interest register has been established. This register allows for local people and businesses to express interest in participating with the construction and operations of the Project. The register has been established and maintained since initial community consultation phases.

This register will be passed onto the construction contractor, and where skills and resources can be appropriately matched, local and regional community members and businesses will be considered in participation opportunities.

7.17. GLINT AND GLARE

A Glint and Glare Analysis is attached as Appendix 12. The Glint and Glare Analysis assessed the optical effects on drivers on certain parts of relevant roads, and some houses in adjacent areas of the potential impact from PVS solar panels on a single axis tracking system during the operational phase.

The Glint and Glare Analysis report explains the methodology and modelling undertaken to carry out the assessment of potential Glint and Glare impacts. The methodology's conservative assumptions and estimates gives quantified results. However, the results do not take into consideration a number of factors which mitigate the results and potential risks including:

- The model does not rigorously represent the detailed geometry of the solar panel arrays, for example gaps between panels, detailed variations in height of the array and support structures;
- The tool does not consider any obstacles (e.g. trees, structures or earth, topography, buildings) between the observation points and the solar panel arrays that may obstruct observed glare. The model does not consider mitigation measures such as proposed or existing vegetation buffers;
- The tool does not define directional viewpoints from each observation point. Instead it considers the cumulative impact of the entire solar panel array areas; and
- The tool uses a typical clear-day solar irradiance profile (worst-case for glare). The model profile has a lower irradiance level in the mornings and evenings and a maximum at solar noon. Actual irradiance levels and profile on any given day can be affected by cloud cover and other environmental factors, however is not considered in this model.

7.17.1. Existing Environment

The Project area's dominant landform is an undulating stony plain which has been extensively cleared for agriculture. Some of the Project area is more heavily disturbed than others because of the yearly cropping. There is native vegetation within the Project area including small treed areas, scattered trees and tree clumps throughout the Project area. The Project area has a small number of built structures.

There is no commercial airport in the immediate region (10 km) around the Project area and only a small private aerodrome, Truro Park, approximately 77 km to the South of Robertstown.

A small number of houses are located in the primary production area adjacent to the Project area.

Lower Bright Rd follows the Project's southern boundary line which is a minor local road. Powerline Rd follows the Project's northern boundary which is a minor local road. Junction Rd follows the Project's eastern boundary which is a minor local road. At the south-western end of the Project area is ElectraNet's Robertstown substation and to the west of the Project area Worlds End Highway passes north- south. Lower Bright Rd, Powerline Rd and Junction Rd are unpaved gravel roads with very limited traffic and Worlds End Highway experiences low traffic volumes. Eagle Hawke Gate Rd crosses the site in north-south direction. This road is however only a very small local traffic road and therefore of minor importance.

7.17.2. Potential Impacts

The PVS solar panels can potentially cause a glint and/or glare impact beyond the Project area. The Glint and Glare Analysis key findings are:

Air Traffic:

The Project area is more than 50 km from any commercial airport. The Australian Civil Aviation Safety Authority (CASA) only requires an assessment for any solar farm within a distance of around 5 nautical miles from an airport and therefore no calculation for potential Glint and Glare issues was performed.

Houses:

The observer locations (OP), described in Table 5 (in the Glint and Glare Report), and shown as white markers in the map, were chosen to represent potential residences that may experience Glint and Glare when looking towards the PVS solar Panels.

The assessment identified six residences as potentially where the residents of the houses may experience low-level glare when looking towards the PVS solar Panels.

Roads:

Worlds End Highway does not experience glare issues.

Sections of Lower Bright Rd, Powerline Rd and Junction Rd experience some low-level glare for a small duration (less than 10 minutes) during the early morning for a few months a year. The roads experience very limited local traffic.

7.17.3. Mitigation Measures

Houses:

The assessment identified six residences as potentially where the residents of the houses may experience low-level glare when looking towards the PVS solar panels.

Based on observations, existing obstacles including existing vegetation, topography, and structures between the residents of houses and the PVS panel arrays ameliorates the low-level glare identified in the Glint and Glare report.

Based on these observations no mitigation measures are required.

Roads:

Worlds End Highway does not experience glare issues.

Sections of Lower Bright Rd, Powerline Rd and Junction Rd experience some low-level glare for a small duration (less than 10 minutes) during the early morning for a few months a year. The roads experience very limited local traffic.

Based on the roads experiencing very limited local traffic and observations of existing obstacles including existing vegetation, topography and structures between the relevant sections of roads and the PVS panel arrays, these factors ameliorate the low-level glare identified in the Glint and Glare report.

Based on these factors no mitigation measures are required.

8. SUMMARY OF MITIGATION MEASURES

8.1. PVS ELEMENT AND ANCILLARY COMPONENTS

Table 8-1 provides a summary of mitigation measures for the PVS element and ancillary components of the Project.

Table 8-1: Summary of Mitigation Measures for the PVS Element of the Project

Issue	Mitigation Measure	Section of Planning Report
Visual Impact and Landscape	<ul style="list-style-type: none">Stakeholder engagement activities will continue to be undertaken to understand relevant landowner and community relationships with visual aspects of the Project;As far as practicable, the development will occur on land previously cleared of vegetation and disturbed;Utility buildings or structures will be sited together, away from residences and constructed of materials that are muted in colour;The use of reflective materials in construction will be limited, as far as practicable;Any landscaping that is completed as part of the Project will be selected and designed so it is sensitive to the landscape and visual receptors;Any signage will be designed and located so it is sensitive to the landscape and visual receptors;Fencing will be sited and designed appropriately to blend with the facility; andConstruction equipment and waste will be removed from the Project area in a timely manner.	7.1
Land Use	<ul style="list-style-type: none">Following the Project's decommissioning the land will be available for current agricultural uses.	7.2
Biodiversity	<ul style="list-style-type: none">Removal of large areas of vegetation will be avoided and minimised, as far as practicable, as part of the final Project design;A targeted wombat survey will be completed prior to construction to confirm the presence of Southern Hairy-nosed Wombats and burrows. The targeted survey will inform the appropriate management options if required;Hollows, coarse woody debris and litter to be translocated into native vegetation patches, as far as practicable, within the Project area as scattered trees are removed;Weed and pathogen hygiene measures will be employed as part of the removal process to ensure	7.3

Issue	Mitigation Measure	Section of Planning Report
	<p>that no new weeds or other pathogens are introduced to existing native vegetation; and</p> <ul style="list-style-type: none"> • An Application for approval to clear native vegetation under Division 5 of the Native Vegetation Regulations 2017 be submitted to Native Vegetation Council based on the final Project design and the consequently clearing requirements are known. 	
Surface Water and Erosion	<ul style="list-style-type: none"> • During construction main access tracks will be permanently gravelled where required; • Rows of PV panels will rotate and be separated from the next row, so providing an infiltration area and sunlight to potential pasture; • If practicable the ground under and adjacent the PV panels will be sown with a permanent pasture mix, suitable to the region and long - term stock grazing; • If practicable the Project area will be controlled grazed (most likely with sheep) to maintain ground cover density and manage the sward length; • During the construction and operation phases an erosion and sediment control plan for each phase will be developed detailing the control measures to be implemented; • Sewage treatment and disposal to be conducted in accordance with relevant Australian Standards and local regulations/approval; and • During the construction and operation phases a storage and handling of chemical and hazardous materials management plan for each phase will be developed detailing the control measures to be implemented. 	7.5
Groundwater	<ul style="list-style-type: none"> • Erosion and sediment control devices will be installed where necessary and monitored to assess efficacy of erosion and sediment control measures; • No unnecessary clearing or earthworks; • Measures implemented to control flow velocities in such a manner that prevents soil erosion along drainage paths; • Ensure the use of appropriately designed laydown areas for vehicles and machinery and storage areas for chemicals, oils and fuels; • Make available spill kit(s) within the operational and maintenance area; • Ensure all staff to be made aware of spill response procedures and the requirement to report any spills or leaks; • Ensure regular maintenance and checks of heavy vehicles, machinery and equipment to identify potential leaks; and 	7.7

Issue	Mitigation Measure	Section of Planning Report
	<ul style="list-style-type: none"> All chemical storage vessels are to be banded and/or constructed on impermeable surfaces in compliance with relevant Australian Standards. 	
Climate	<ul style="list-style-type: none"> Efficient PV components and Project design to maximise electricity production; Components updated as they become obsolete or superseded by more efficient technologies, as required; and Panels will be maintained to maximise solar collection. 	7.8
Noise	<ul style="list-style-type: none"> Work on-site will occur within the standard work hours of 7.00a.m. and 7.00p.m. Monday to Saturday; Particularly noisy activities will be commenced after 9.00am if they exceed noise guidelines; Noisy equipment and processes will be located so that their impact on neighbouring properties is minimised whether by maximising the distance to the premises, using structures or elevations to create barriers or otherwise; Equipment will be shut down or throttled down whenever it is not in use; Equipment will be equipped with feasible noise control (e.g. mufflers, silenced exhausts, acoustic enclosures); Equipment will be properly maintained so as to eliminate or reduce noise as far as practicable; Equipment shall be handled so as to minimise impact of noise; As far as practicable, off-site or alternative processes that eliminate or lessen noise will be utilised; A complaints hotline will be established and advertised for the receipt of feedback on the Project, including any complaints regarding noise nuisance; and Subject to approval from the relevant authority, circumstances, such as extreme summer heat, may warrant construction activity to be permitted outside of the hours of 7.00am and 7.00pm Monday to Saturday or on a Sunday or Public Holiday. 	7.9
Archaeology	<ul style="list-style-type: none"> Further cultural heritage works with the Ngadjuri Nation Aboriginal Corporation will inform the final detailed Project layout plans; Any Aboriginal sites and artefacts will be taken into consideration for the final detailed Project layout plans; Compliance with the relevant provisions of the <i>Aboriginal Heritage Act 1988</i>; 	7.10

Issue	Mitigation Measure	Section of Planning Report
	<ul style="list-style-type: none"> The four European Heritage places (G80401R-01, G80401R-02, G80401R-04, G80401R-05) will be avoided; European Heritage places (G80401R-01, G80401R-02, G80401R-04, G80401R-05) will be fenced or flagged so that there is a clear, visible boundary for construction personnel during construction; Construction personnel will receive a heritage induction prior to work on-site; A stop work/site discovery procedure for both Aboriginal and European heritage will be developed prior to the commencement of construction to manage the event of an unexpected find; and The Construction Management Plan will include information on recorded heritage items. 	
Bushfire	<ul style="list-style-type: none"> Installation of only Standard compliant components; Ongoing monitoring and review of the solar system performance; Installation of thermal overload protection on inverters; Controlled grazing or machinery maintenance of pastures under panel arrays; and Maintenance of firebreaks. 	7.11
Traffic and Transport	<ul style="list-style-type: none"> A Traffic Management Plan will be prepared, prior to commencement of construction works in consultation with DPTI and Goyder Regional Council; and A dilapidation report or equivalent report, of the road conditions along the nominated local access roads will be undertaken prior to the commencement of construction in consultation with the Goyder Regional Council. 	7.12
Air Quality	<ul style="list-style-type: none"> Dust management measures will be included in the Construction Management Plan; During construction, dust raised on site will be monitored and, if dust is creating a nuisance, a water cart will be used to manage problem areas; Dust generation from construction traffic will be monitored and dust suppression activities will be undertaken to minimise dust emissions, if required; Wind speed and direction will be monitored, and dust generating activities will be adapted to the wind conditions; and Properly maintained equipment will be used to minimise emissions. 	7.13
Electric and Magnetic Fields	<ul style="list-style-type: none"> Installing electrical componentry to the relevant Australian Standards and guidelines; 	7.14

Issue	Mitigation Measure	Section of Planning Report
	<ul style="list-style-type: none"> • Use of International Electrotechnical Commission compliant commercial inverters; and • Restriction of access to areas of high voltage electrical equipment such as switchyard, substation, BESS areas and synchronous condensers (if required). 	

8.2. BESS ELEMENT

Table 8-2 provides a summary of mitigation measures for the BESS element of the Project.

Table 8-2: Summary of Mitigation Measures for the BESS Element of the Project

Issue	Mitigation Measure	Section of Planning Report
Visual Impact and Landscape	<ul style="list-style-type: none"> • Stakeholder engagement activities will continue to be undertaken to understand relevant landowner and community relationships with visual aspects of the Project; • Utility buildings or structures will be sited together, away from residences and constructed of materials that are muted in colour; • The use of reflective materials in construction will be limited, as far as practicable; • Any landscaping that is completed as part of the Project will be selected and designed so it is sensitive to the landscape and visual receptors; • Any signage will be designed and located so it is sensitive to the landscape and visual receptors; • Fencing will be sited and designed appropriately to blend with the facility; and • Construction equipment and waste will be removed from the Project area in a timely manner. 	7.1
Land Use	<ul style="list-style-type: none"> • Following the Project's decommissioning the land will be available for current agricultural uses. 	7.2
Surface Water and Erosion	<ul style="list-style-type: none"> • During the construction and operation phases an erosion and sediment control plan for each phase will be developed detailing the control measures to be implemented. 	7.5
Groundwater	<ul style="list-style-type: none"> • Erosion and sediment control devices will be installed where necessary and monitored to assess efficacy of erosion and sediment control measures; • No unnecessary clearing or earthworks; and • Measures implemented to control flow velocities in such a manner that prevents soil erosion along drainage paths. 	7.7

Issue	Mitigation Measure	Section of Planning Report
Noise	<ul style="list-style-type: none"> • Work on-site will occur within the standard work hours of 7.00a.m. and 7.00p.m. Monday to Saturday; • Particularly noisy activities will be commenced after 9.00am if they exceed noise guidelines; • Noisy equipment and processes will be located so that their impact on neighbouring properties is minimised whether by maximising the distance to the premises, using structures or elevations to create barriers or otherwise; • Equipment will be shut down or throttled down whenever it is not in use; • Equipment will be equipped with feasible noise control (e.g. mufflers, silenced exhausts, acoustic enclosures); • Equipment will be properly maintained so as to eliminate or reduce noise as far as practicable; • Equipment shall be handled so as to minimise impact of noise; • As far as practicable, off-site or alternative processes that eliminate or lessen noise will be utilised; • A complaints hotline will be established and advertised for the receipt of feedback on the Project, including any complaints regarding noise nuisance; and • Subject to approval from the relevant authority, circumstances, such as extreme summer heat, may warrant construction activity to be permitted outside of the hours of 7.00am and 7.00pm Monday to Saturday or on a Sunday or Public Holiday. 	7.9
Archaeology	<ul style="list-style-type: none"> • Further cultural heritage works with the Ngadjuri Nation Aboriginal Corporation will inform the final detailed Project layout plans; • Any Aboriginal sites and artefacts will be taken into consideration for the final detailed Project layout plans; • Compliance with the relevant provisions of the <i>Aboriginal Heritage Act 1988</i> if required; • Construction personnel will receive a heritage induction prior to work on-site; • A stop work/site discovery procedure for both Aboriginal and European heritage will be developed prior to the commencement of construction to manage the event of an unexpected find; and • The Construction Management Plan will include information on recorded heritage items. 	7.10
Bushfire	<ul style="list-style-type: none"> • Installation of only Standard compliant components; • Ongoing monitoring and review of the Battery system performance; and 	7.11

Issue	Mitigation Measure	Section of Planning Report
Electric and Magnetic Fields	<ul style="list-style-type: none"> • Installation of thermal overload protection on inverters. 	
	<ul style="list-style-type: none"> • Locating the high voltage electrical equipment such as switchyard, substation, BESS and synchronous condensers (if required) appropriately on the Project area; • Installing electrical componentry to the relevant Australian Standards and guidelines; • Use of International Electrotechnical Commission compliant commercial inverters; and • Restriction of access to areas of high voltage electrical equipment such as switchyard, substation, BESS areas. 	7.14

9. ENVIRONMENTAL MANAGEMENT AND MONITORING

While the purpose of reviewing the key environmental issues is to consider the potential environmental impacts resulting from the Project, the role of an ongoing environmental management system is to ensure that the identified controls and commitments are maintained throughout the construction and operational phases of the Project. Further, a formal environmental management system will implement and monitor the objectives and measures outlined in the development consent, relevant licenses and legislation. Accordingly, this section outlines an overall environmental management framework to guide the development and management of the Project.

Following a development approval, an Environmental Management Plan (EMP) for the construction and operational phases of the development will be prepared taking into account the following documents:

- This Planning Report;
- Conditions of Approval; and
- Any other approval, licence or permit required, including but not limited to grid connection to the ElectraNet Robertstown Substation.

It is intended to prepare a suite of EMPs including a Construction Management Plan and Operational Management Plan. These EMPs will be drafted and finalised following development approval. Notwithstanding, the EMPs are expected to specify all environmental management activities and measures used to control, prevent or minimise environmental impacts. In addition, the plan will assign responsibility for mitigation measures to specific personnel and allocate quantitative or qualitative criteria to the performance of each measure where applicable. The following matters are likely to be addressed in the suite of EMPs:

- Project description;
- Environmental management structure and responsibilities;
- Approval and licensing requirements;
- Environmental training requirements;
- Emergency contacts and responsible procedures;
- Risk assessment;
- Environmental management measures;
- Environmental management maps, as required;
- Environmental monitoring requirements;
- Environmental auditing, as required;
- Corrective action; and
- Review.

The nature of the Project means that environmental monitoring required by more intrusive project (mines, quarries, roads, etc.) is likely not required.

Following development approval, environmental management will be implemented in accordance with the following environmental objectives:

- Implement a standard of environmental management that reflects proactive planning and recognition of environmental impact;
- Comply with applicable Commonwealth and South Australian legislative requirements;
- Comply with applicable environmental standards and approvals throughout all phases of the Project; and
- Commit to undertake all environmental management practices in accordance with best-practice.

Management procedures may be adjusted in the event of an environmental incident or the receipt of complaints.

10. CONCLUSION

The Project area selection, assessment and design has been a considered and iterative process influenced by a number of factors including legislative and technical requirements, on-ground environmental attributes, financial feasibility, and potential for economic, social and environmental benefits.

Detailed and measured investigations have allowed the Project to achieve its intent of maximising the benefits derived from increased production of renewable energy, while being sustainable for the needs of the present generation without compromising the ability of future generations to meet their future economic, social and environmental needs.

This Planning Report has considered the details of the Project, the strategic and statutory context, and identified key environmental, social and economic issues. Where potential impacts have been identified, mitigation measures have been proposed for incorporation in the Project design and future management plans.

Assessment of the Project against the Development Control Plan has demonstrated its compatibility and appropriateness for the Project land and locality. Specifically, the land selected is predominantly cleared and previously disturbed, and is located in close proximity to existing electricity network infrastructure.

The provision of appropriately designed new generating facilities, such as the Project, is critical for the future of South Australia's energy security. Further, it is considered that the Project will have positive socio-economic and environmental impacts on the local, state and national scales.

The Planning Report concludes the Project:

- Is consistent with the relevant strategic and statutory provisions;
- Will not result in significant environmental impacts;
- Is suitable at the proposed site; and
- Is in the public interest.

Therefore, it is respectfully requested the Project be approved subject to final Project documents and plans being approved by relevant Government authorities prior to the commencement of construction and operation.

11. REFERENCES

BV Consulting (2018) *Glint and Glare Analysis – Robertstown Solar, South Australia, November 2018*

CMW Geosciences (2018) *Robertstown Solar Geotechnical Investigation*, ADL2018-0004AD Rev2. 06/07/2018

Department of Planning Transport and Infrastructure (DPTI) (2018) Annual Average Daily Traffic (AADT) estimates and Heavy Vehicle Estimates accessed at https://dpti.sa.gov.au/traffic_volumes

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EBS Heritage (2018) *Robertstown Solar Archaeological Survey Report*, Version 2, Project Number: G80401, Author Shannon Smith, 25/07/2018.

EBS Ecology (2018) *Robertstown Solar Desktop Ecological Assessment*, Version 3, Project Number: G80401, Author Dr M. Louter, 14/05/2018.

EBS Ecology (2018) *Native Vegetation Clearance Proposal Robertstown Solar*, Version 2, Project Number: G80401, Author Dr M. Louter, 25/07/2018.

Engel, Z., Wszole, T. (1996) *Audible noise of transmission lines caused by the corona effect: Analysis, modelling, prediction*, Applied Acoustics, Volume 47, Issue 2, Pages 149-163, ISSN 0003-682X, [https://doi.org/10.1016/0003-682X\(95\)00041-7](https://doi.org/10.1016/0003-682X(95)00041-7), accessed at: <http://www.sciencedirect.com/science/article/pii/0003682X95000417>

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EPA South Australia (2009) *Wind farms environmental noise guidelines* ISBN 978-1-876562-43-9

Government of South Australia, *Environment Protection (Noise) Policy 2007* accessed at [https://www.legislation.sa.gov.au/LZ/C/POL/Environment%20Protection%20\(Noise\)%20Policy%202007.aspx](https://www.legislation.sa.gov.au/LZ/C/POL/Environment%20Protection%20(Noise)%20Policy%202007.aspx)

South Australian Resource Information Gateway (SARIG) (2018) 1:100,000 Florieton sheet and geoscientific and geospatial data accessed at: http://minerals.statedevelopment.sa.gov.au/online_tools/free_data_delivery_and_publication_downloads/sarig

World Resources Institute (2018) *These 20 Water-Stressed Countries Have the Most Solar and Wind Potential*

APPENDIX 1

Regulatory Endorsement

1.1 Department for Energy and Mining's S49 Endorsement

1.2 Office of Technical Regulator Certificate

1.1 Department for Energy and Mining's S49 Endorsement



Government
of South Australia

Department for
Energy and Mining

DEMC18/00022

Mr Steve McCall
Director
Energy Projects Solar (EPS) Pty Ltd
3/153 Pacific Highway
CHARLESTOWN NSW 2290

Email: stevemccall@epsenergy.com.au

Dear Mr McCall

CROWN SPONSORSHIP ROBERTSTOWN SOLAR PROJECT

Thank you for your letter of 7 September 2018 requesting Crown Sponsorship under section 49 of the *Development Act 1993* to assist with Energy Project Solar (EPS) Pty Ltd's Robertstown Solar Project (Project).

This Project has been considered within the South Australian Department for Energy and Mining (DEM) with input from the Department of Planning, Transport and Infrastructure, the Department of Environment and Water, the Environmental Protection Agency and the Technical Regulator. In principle, the Project is supported, recognising the possible environmental and community issues that will need to be addressed through the development assessment process.

On balance, the development of the Project has the potential to benefit South Australia and can be considered public infrastructure. Accordingly I, as the Chief Executive of the DEM, will support the development and specifically endorse the Development Application to construct the Project comprising up to 500MW solar photovoltaic with up to 250MW capacity battery with up to 1000MWh of storage as a development of public infrastructure as required by section 49 of the *Development Act 1993* (the Act).

It is the responsibility of EPS to prepare all documentation as required by section 49 of the Act. All costs in the preparation of the development application, lodgement and any other subsequent action in relation to this application are the responsibility of EPS.

The DEM makes no representations or gives no warranties in relation to the outcome of the Development Application or time that it takes to secure a planning outcome. It is EPS's responsibility to obtain all other statutory approvals, licences, connection agreements and permits from relevant authorities, manage community expectations and to fund the project. The State Government makes no commitment to purchase any product or service related to the project.

A Development Application under this Crown sponsorship must be lodged with the State Planning Commission and is valid for 12 months from the date of this letter. If this is not achieved by that time, my support under Section 49(2)(c) of the *Development Act 1993* for EPS's Project will lapse.

If you have any questions regarding the preparation of the material to support this section 49 application, please contact Mr Adam Cook on (08) 8429 3496 or via email: adam.cook@sa.gov.au.

Yours sincerely

A handwritten signature in blue ink, appearing to read 'Paul Heithersay', is written over a faint, circular official stamp.

Paul Heithersay
CHIEF EXECUTIVE
18/10/2018

1.2 Office of Technical Regulator Certificate

November 18





Ref: 2017/01873.01 D18126014

24 September 2018

Steve McCall
EPS Energy
PO Box 195
Charlestown NSW 2290
By email: stevemccall@epsenergy.com.au

Energy and Technical
Regulation

Office of the
Technical Regulator

Level 4, 11 Waymouth Street
Adelaide SA 5000

GPO Box 320
Adelaide SA 5001

Telephone: 08 8226 5500
Facsimile: 08 8226 5866

www.sa.gov.au/otr

Dear Steve,

RE: CERTIFICATE FOR DEVELOPMENT OF THE ROBERTSTOWN SOLAR PROJECT

The development of the Robertstown Solar Project has been assessed by the Office of the Technical Regulator (OTR) under Section 37 of the Development Act 1993.

Regulation 70 of the *Development Regulations 2008* prescribes if the proposed development is for the purposes of the provision of electricity generating plant with a generating capacity of more than 5 MW that is to be connected to the State's power system – a certificate from the Technical Regulator is required, certifying that the proposed development complies with the requirements of the Technical Regulator in relation to the security and stability of the State's power system.

In making a decision on your application, our office has taken the following information into account:

- An email from yourself 18 June 2018, which included the project application attached '20180618 Robertstown Solar Statement to OTR.pdf';
- Revised project information emailed by John Thompson of John Thompson Inclusive Pty Ltd on 27 June 2018;
- An OTR certificate issued for this project, dated 27 June 2018.
- A revised application emailed by yourself to the OTR on 24 September 2018.

After assessing the information provided, I advise that approval is granted for the proposed project.

Energy and Technical Regulation

Level 4, 11 Waymouth Street Adelaide SA 5000 | GPO Box 320 Adelaide SA 5001 | DX541

Tel (+61) 8 8226 5500 | Fax (+61) 8 8226 5866 | www.energymining.sa.gov.au | ABN 83 768 683 934



Should you have any questions regarding this matter, please do not hesitate to call David Bosnakis on (08) 8226 5521.

Yours sincerely

A handwritten signature in blue ink, appearing to read "R. Faunt".

Rob Faunt
TECHNICAL REGULATOR

cc: Jeff Burns – EPS Energy
Simon Duffy – EPS Energy
John Thompson – John Thompson Inclusive

APPENDIX 2

Certificate of Titles

REAL PROPERTY ACT, 1886



The Registrar-General certifies that this Title Register Search displays the records maintained in the Register Book and other notations at the time of searching.



Certificate of Title - Volume 5465 Folio 354

Parent Title(s)	CT 4273/650		
Creating Dealing(s)	CONVERTED TITLE		
Title Issued	31/10/1997	Edition 4	Edition Issued 18/06/2009

Estate Type

FEE SIMPLE

Registered Proprietor

STEPHEN GRANT SCHULZ
ROSLYN LOUISE SCHULZ
OF STOCK ROUTE ROAD ROBERTSTOWN SA 5381
AS JOINT TENANTS

Description of Land

SECTION 13
HUNDRED OF BRIGHT
IN THE AREA NAMED BRIGHT

Easements

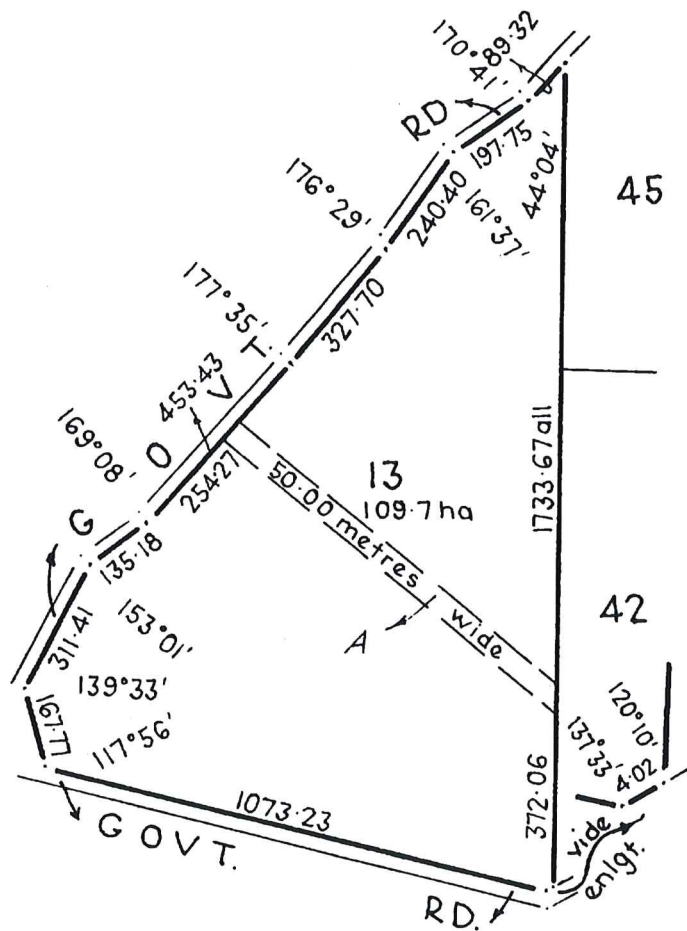
SUBJECT TO EASEMENT(S) OVER THE LAND MARKED A TO THE ETSA CORPORATION (T 5079119)

Schedule of Dealings

Dealing Number	Description
11188584	MORTGAGE TO RABOBANK AUSTRALIA LTD.

Notations

Dealings Affecting Title	NIL
Priority Notices	NIL
Notations on Plan	NIL
Registrar-General's Notes	NIL
Administrative Interests	NIL



0 150 300 450 600 Metres

REAL PROPERTY ACT, 1886



The Registrar-General certifies that this Title Register Search displays the records maintained in the Register Book and other notations at the time of searching.



Certificate of Title - Volume 5464 Folio 828

Parent Title(s)	CT 4273/649				
Creating Dealing(s)	CONVERTED TITLE				
Title Issued	30/10/1997	Edition	3	Edition Issued	11/02/1999

Estate Type

FEE SIMPLE

Registered Proprietor

STEPHEN GRANT SCHULZ
ROSLYN LOUISE SCHULZ
OF C/- POST OFFICE ROBERTSTOWN SA 5381
AS JOINT TENANTS

Description of Land

SECTION 42
HUNDRED OF BRIGHT
IN THE AREA NAMED BRIGHT

Easements

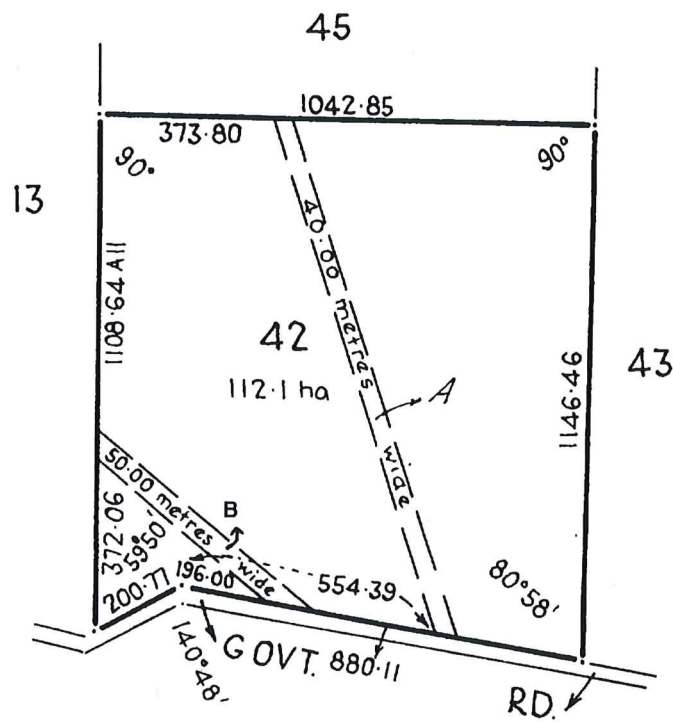
SUBJECT TO EASEMENT(S) OVER THE LAND MARKED A TO THE ETSA CORPORATION (T 5079119)

Schedule of Dealings

NIL

Notations

Dealings Affecting Title	NIL
Priority Notices	NIL
Notations on Plan	NIL
Registrar-General's Notes	NIL
Administrative Interests	NIL



0 150 300 450 600 Metres

REAL PROPERTY ACT, 1886



The Registrar-General certifies that this Title Register Search displays the records maintained in the Register Book and other notations at the time of searching.



Certificate of Title - Volume 5941 Folio 840

Parent Title(s)	CL 934/33			
Creating Dealing(s)	RLG 10228869			
Title Issued	06/06/2005	Edition 2	Edition Issued	27/06/2006

Estate Type

FEE SIMPLE

Registered Proprietor

JASON DALE SEMMLER
OF PO BOX ROBERTSTOWN SA 5351

Description of Land

SECTION 43
HUNDRED OF BRIGHT
IN THE AREA NAMED BRIGHT

Easements

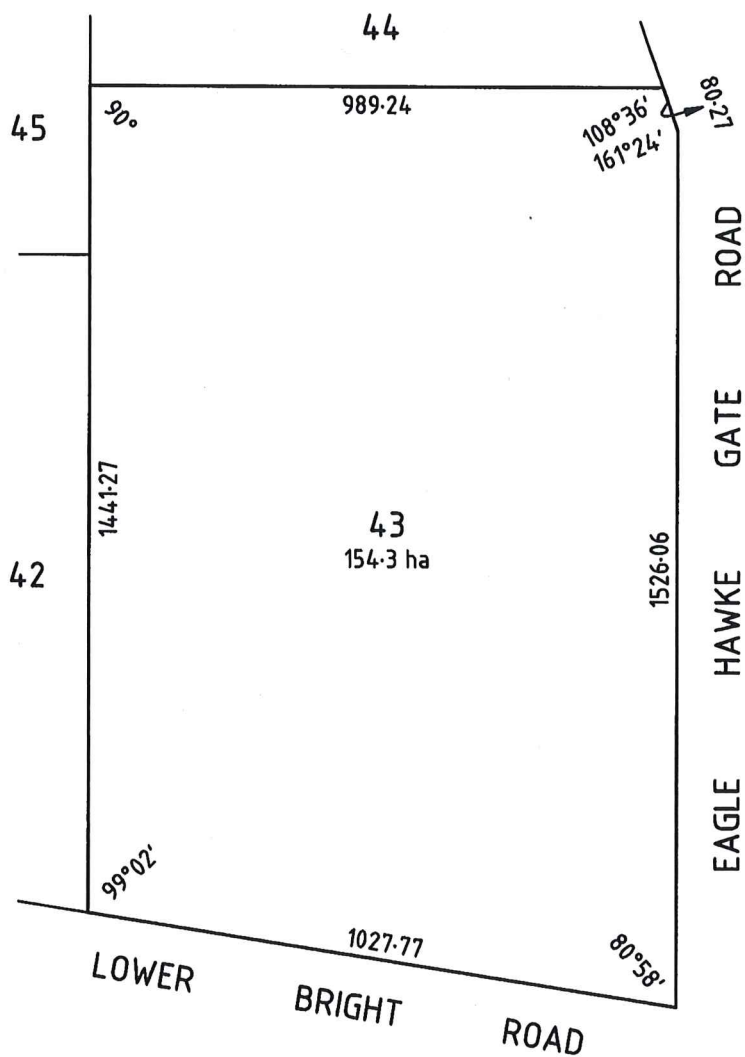
NIL

Schedule of Dealings

NIL

Notations

Dealings Affecting Title	NIL
Priority Notices	NIL
Notations on Plan	NIL
Registrar-General's Notes	NIL
Administrative Interests	NIL



REAL PROPERTY ACT, 1986



The Registrar-General certifies that this Title Register Search displays the records maintained in the Register Book and other notations at the time of searching.



Certificate of Title - Volume 5431 Folio 659

Parent Title(s)	CT 4344/242				
Creating Dealing(s)	CONVERTED TITLE				
Title Issued	02/07/1997	Edition	2	Edition Issued	01/09/1998

Estate Type

FEE SIMPLE

Registered Proprietor

ANDREW CHARLES RUEDIGER
OF ROBERTSTOWN SA 5381

Description of Land

SECTION 232
HUNDRED OF BRIGHT
IN THE AREA NAMED BRIGHT

Easements

NIL

Schedule of Dealings

Dealing Number	Description
1837364	LEASE COMMENCING ON 13/4/1954 AND EXPIRING ON 12/4/2053 OF A RIGHT OF WAY AND EASEMENT OVER PORTION (SUBJECT TO LEASE 9061500 OF 1 UNDIVIDED 2ND PART)
9061262	VESTING OF LEASE 1837364 IN TRANSMISSION LESSOR CORPORATION
9061394	VESTING OF LEASE 1837364 IN ELECTRANET PTY. LTD. OF 1 UNDIVIDED 2ND PART

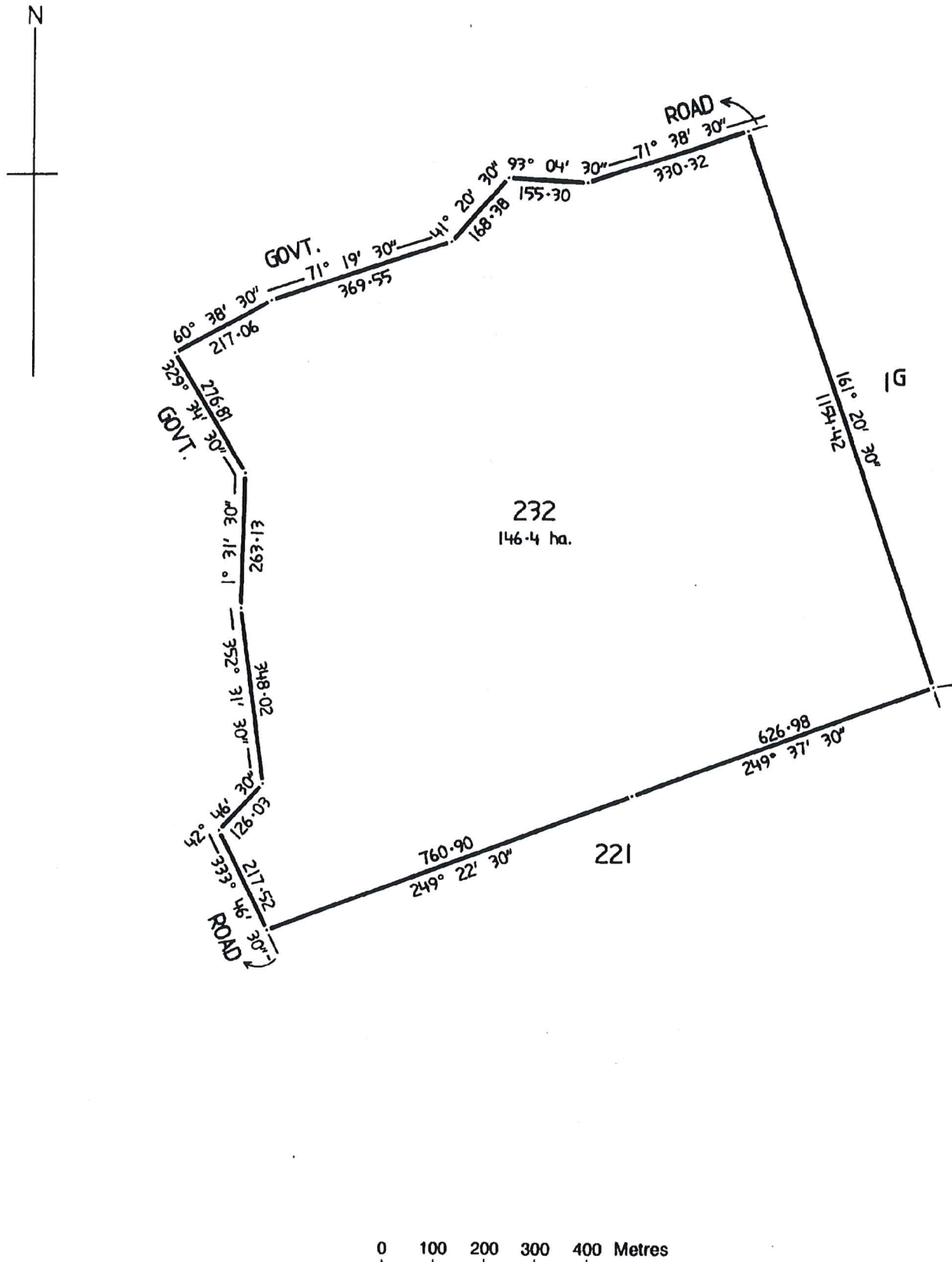
Notations

Dealings Affecting Title	NIL
Priority Notices	NIL
Notations on Plan	NIL

Registrar-General's Notes

TEXTUAL AMENDMENT VIDE 9201027

Administrative Interests	NIL
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REAL PROPERTY ACT, 1886



South Australia

The Registrar-General certifies that this Title Register Search displays the records maintained in the Register Book and other notations at the time of searching.



Certificate of Title - Volume 5431 Folio 657

Parent Title(s)	CT 4344/241			
Creating Dealing(s)	CONVERTED TITLE			
Title Issued	02/07/1997	Edition	2	Edition Issued 01/09/1998

Estate Type

FEE SIMPLE

Registered Proprietor

ANDREW CHARLES RUEDIGER
OF ROBERTSTOWN SA 5381

Description of Land

SECTION 227
HUNDRED OF BRIGHT
IN THE AREA NAMED GERANIUM PLAINS

Easements

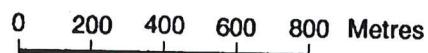
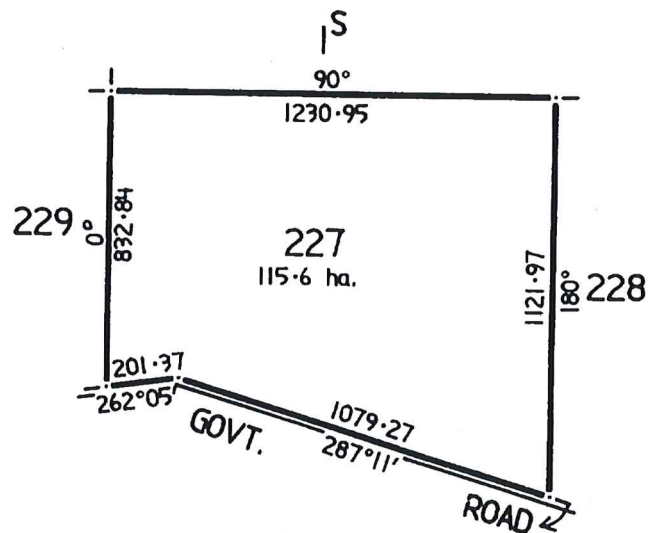
NIL

Schedule of Dealings

NIL

Notations

Dealings Affecting Title	NIL
Priority Notices	NIL
Notations on Plan	NIL
Registrar-General's Notes	NIL
Administrative Interests	NIL



REAL PROPERTY ACT, 1886



The Registrar-General certifies that this Title Register Search displays the records maintained in the Register Book and other notations at the time of searching.



Certificate of Title - Volume 5565 Folio 131

Parent Title(s)	CT 1188/84			
Creating Dealing(s)	CONVERTED TITLE			
Title Issued	14/08/1998	Edition	2	Edition Issued 01/09/1998

Estate Type

FEE SIMPLE

Registered Proprietor

ANDREW CHARLES RUEDIGER
OF ROBERTSTOWN SA 5381

Description of Land

ALLOTMENT 91 FILED PLAN 212965
IN THE AREA NAMED BRIGHT
HUNDRED OF BRIGHT

Easements

NIL

Schedule of Dealings

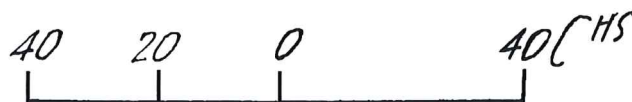
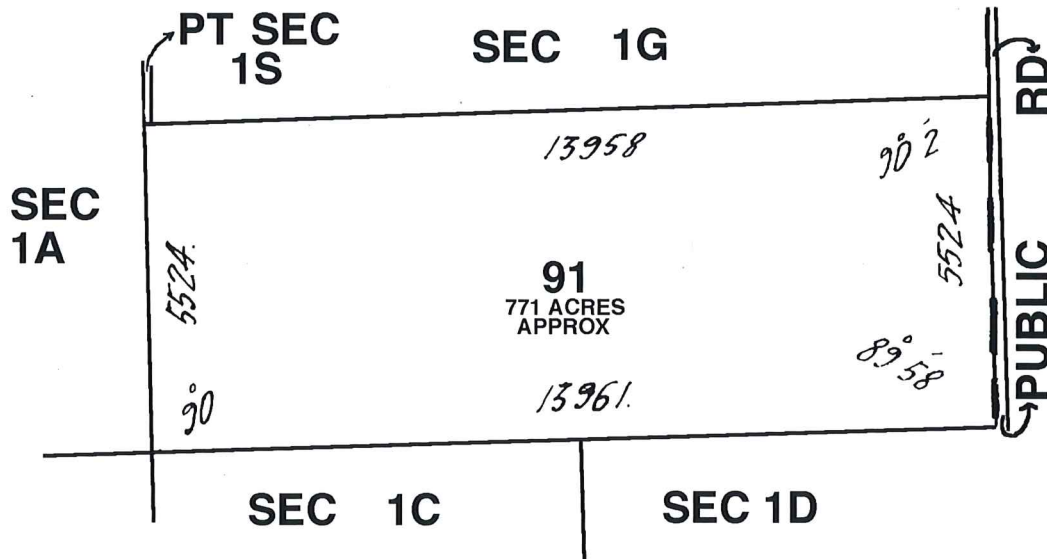
NIL

Notations

Dealings Affecting Title	NIL
Priority Notices	NIL
Notations on Plan	NIL
Registrar-General's Notes	NIL
Administrative Interests	NIL



THIS PLAN IS SCANNED FOR CERTIFICATE OF TITLE 1188/84



FOR METRIC CONVERSION

1 LINK	= 0.201168 METRES
1 CHAIN	= 100 LINKS
1 ACRE	= 0.404686 HECTARES
1 ROOD	= 1011.7 m ²
1 PERCH	= 25.29 m ²

NOTE: SUBJECT TO ALL LAWFULLY EXISTING PLANS OF DIVISION

REAL PROPERTY ACT, 1886



The Registrar-General certifies that this Title Register Search displays the records maintained in the Register Book and other notations at the time of searching.



Certificate of Title - Volume 5951 Folio 34

Parent Title(s)	CL 938/7, CL 943/30				
Creating Dealing(s)	RLG 10312263				
Title Issued	11/10/2005	Edition	2	Edition Issued	02/04/2008

Estate Type

FEE SIMPLE

Registered Proprietor

ANDREW MARK JAESCHKE
MICHELLE KAY JAESCHKE
OF PO BOX 10 HILLTOWN SA 5455
WITH NO SURVIVORSHIP

Description of Land

SECTIONS 44, 45 AND 46
HUNDRED OF BRIGHT
IN THE AREA NAMED BRIGHT

Easements

NIL

Schedule of Dealings

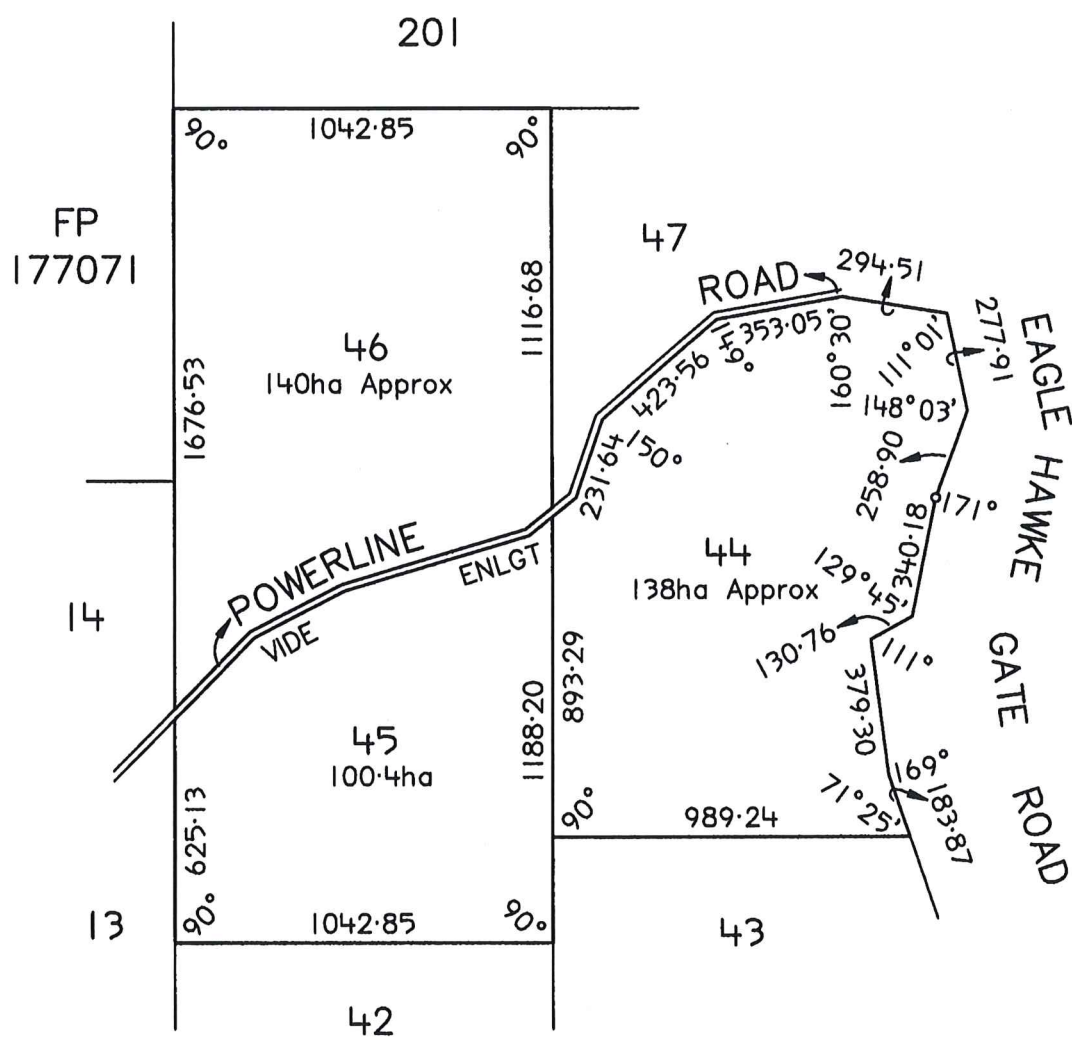
Dealing Number	Description
1837353	LEASE COMMENCING ON 28/2/1954 AND EXPIRING ON 27/2/2053 OF AN EASEMENT OVER PORTION AS TO THE SHARES SPECIFIED THEREIN (SUBJECT TO LEASE 9061500 OF THE INTEREST OF TRANSMISSION LESSOR CORPORATION)
1868520	LEASE COMMENCING ON 19/3/1954 AND EXPIRING ON 18/3/2053 OF AN EASEMENT OVER PORTION AS TO THE SHARES SPECIFIED THEREIN (SUBJECT TO LEASE 9061500 OF THE INTEREST OF TRANSMISSION LESSOR CORPORATION)
5085253	LEASE COMMENCING ON 21/6/1983 AND EXPIRING ON 20/6/2082 OF AN EASEMENT OVER PORTION AS TO THE SHARES SPECIFIED THEREIN (SUBJECT TO LEASE 9061500 OF THE INTEREST OF TRANSMISSION LESSOR CORPORATION)

Notations

Dealings Affecting Title	NIL
Priority Notices	NIL
Notations on Plan	NIL
Registrar-General's Notes	NIL
Administrative Interests	NIL



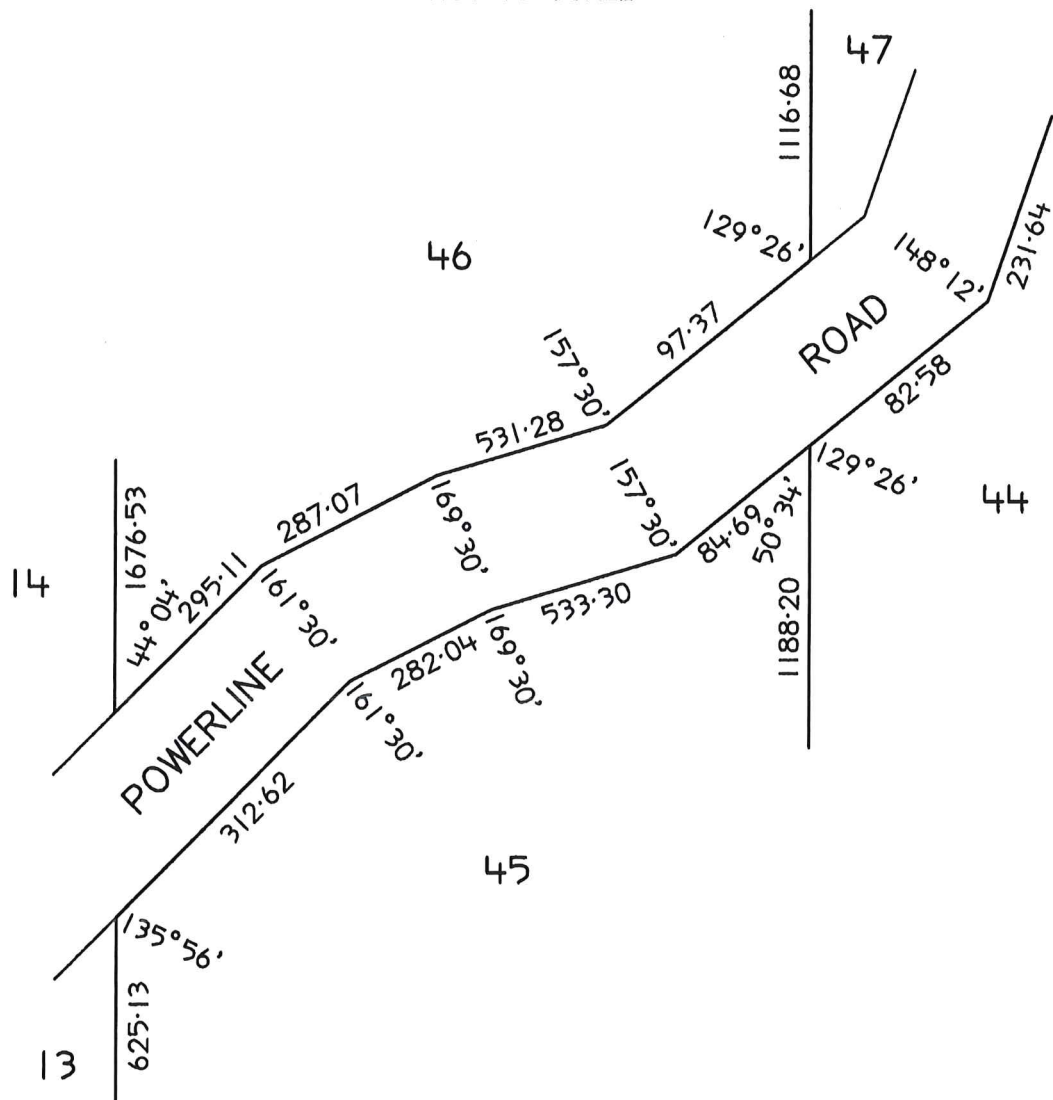
Product	Register Search (CT 5951/34)
Date/Time	31/08/2018 03:23PM
Customer Reference	11314
Order ID	20180831008698
Cost	\$28.75



0 200 400 600 800 Metres



ENLARGEMENT
NOT TO SCALE



Certificate of Title

Title Reference CT 5550/784
Status CURRENT
Easement NO
Owner Number 14030446
Address for Notices POST OFFICE BOX 1045, CLARE, SA 5453
Area 309.8HA (CALCULATED)

Estate Type

Fee Simple

Registered Proprietor

ANDREW MARK JAESCHKE
MICHELLE KAY JAESCHKE
OF PO BOX 10 HILLTOWN SA 5455
WITH NO SURVIVORSHIP

Description of Land

ALLOTMENT 91 FILED PLAN 212508
IN THE AREA NAMED BRIGHT
HUNDRED OF BRIGHT

Last Sale Details

Dealing Reference Transfer (T) 10919008
Dealing Date 12/03/2008
Sale Price \$0
Sale Type Change of ownership for no monetary consideration or undisclosed consideration

Constraints

Incumbrances

NIL

Stoppers

NIL

Valuation Numbers

Valuation Number	Status	Property Location Address
9802522004	CURRENT	Lot 91 POWERLINE ROAD, BRIGHT, SA 5381

Notations

Dealings Affecting Title

NIL

Notations on Plan



NIL

Registrar-General's Notes

NIL

Administrative Interests

NIL



S.A. LANDS TITLES OFFICE RE-IDENTIFICATION PLAN

PLAN NUMBER

FP 212508

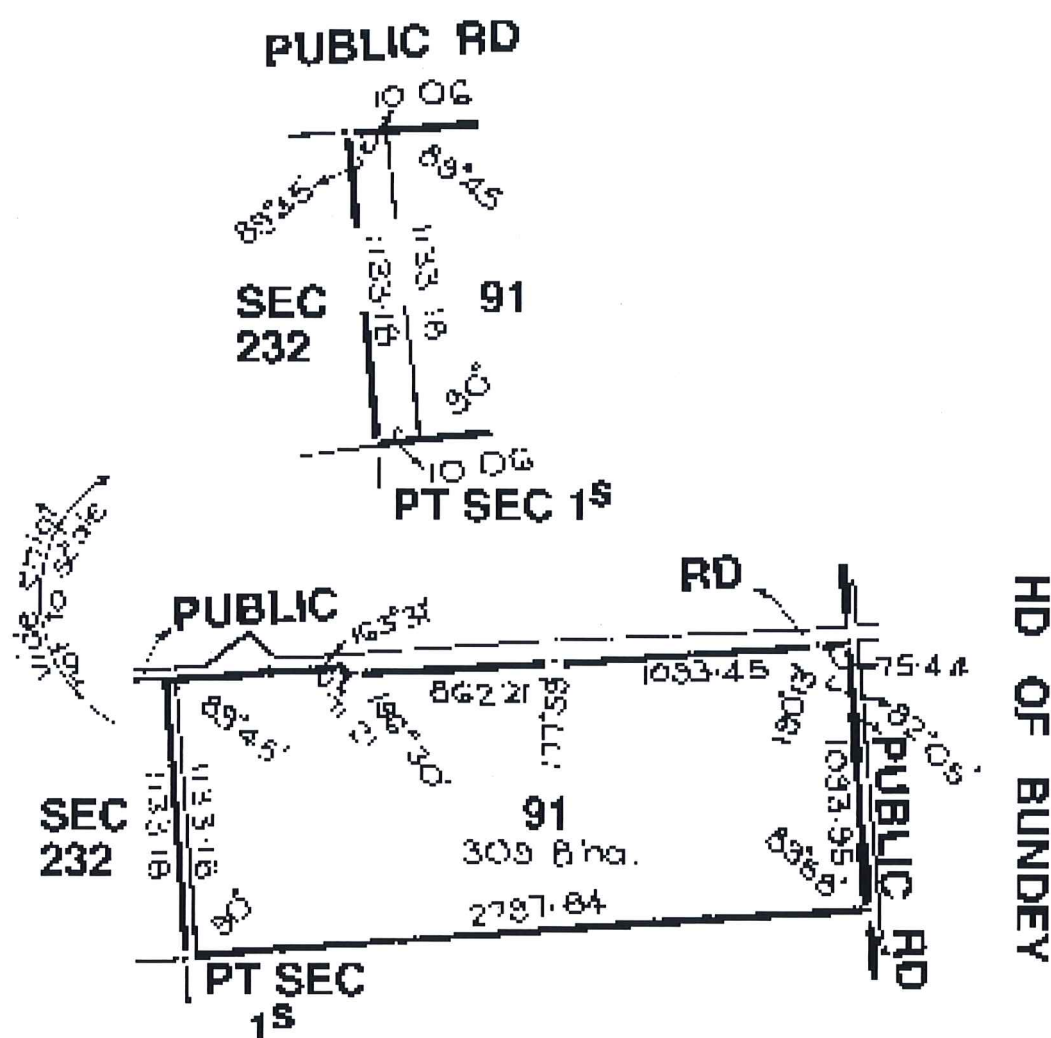
SHE-11 OF 1

ACCEPTED FOR FILING
11/03/1993

REGISTRAR GENERAL

AREA : BRIGHT
LGA : DISTRICT COUNCIL OF ROBERTSTOWN
HUNDRED : BRIGHT
SECTION : P S 1G

THIS PLAN IS SCANNED FOR CERTIFICATE OF TITLE 4271/298



0 400 800 1200 1600 Metres

NOTE: SUBJECT TO ALL LAWFULLY EXISTING PLANS OF DIVISION



Certificate of Title

Title Reference CT 5561/287
Status CURRENT
Easement NO
Owner Number 07748986
Address for Notices PO BOX 11 ROBERTSTOWN 5381
Area 115.3HA (CALCULATED)

Estate Type

Fee Simple

Registered Proprietor

CLAYTON FRANCIS HEINRICH
CARLENE MICHELLE HEINRICH
OF ROBERTSTOWN SA 5381
AS JOINT TENANTS

Description of Land

SECTION 229
HUNDRED OF BRIGHT
IN THE AREA NAMED BRIGHT

Last Sale Details

There are no sales details recorded for this property

Constraints

Encumbrances

NIL

Stoppers

NIL

Valuation Numbers

Valuation Number	Status	Property Location Address
9802598113	CURRENT	Lot 221 GOVT ROAD, BRIGHT, SA 5381

Notations

Dealings Affecting Title

NIL

Notations on Plan

NIL



Product	Title Details
Date/Time	12/05/2017 10:03AM
Customer Reference	11263
Order ID	20170512002900
Cost	\$9.75

Registrar-General's Notes

NIL

Administrative Interests

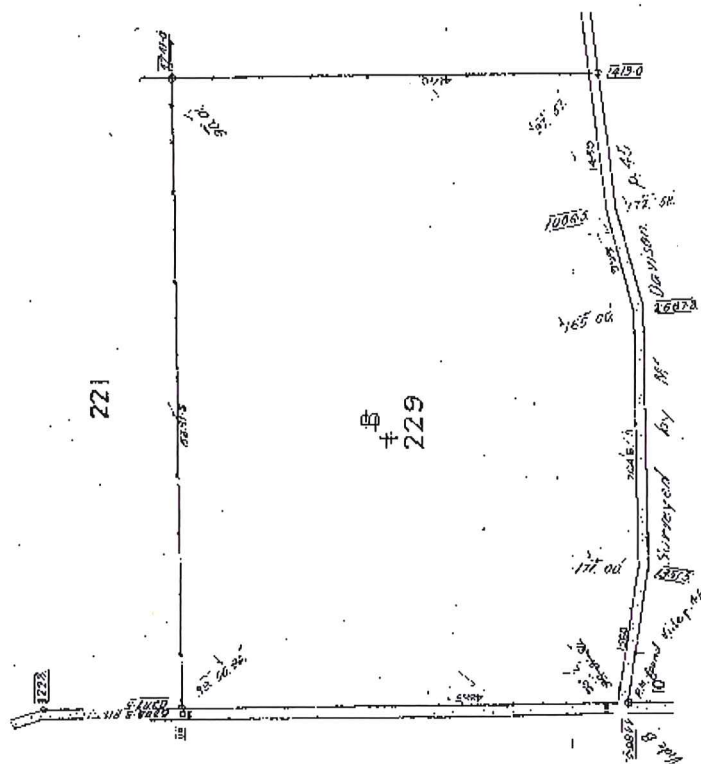
NIL

517

Mr. S. to check. Mr. M. to plot on plans
Mr. L. to plot. Mr. W. as to right of way.

S. L. Hoffmann
1/6/27
Survivor

15



Of

D.L. 6837/36
D.R. 211/33

vide pages 21, 30 & 45

Certificate of Title

Title Reference CT 5561/89
Status CURRENT
Easement NO
Owner Number 07748986
Address for Notices PO BOX 11 ROBERTSTOWN 5381
Area 139.6HA (CALCULATED)

Estate Type

Fee Simple

Registered Proprietor

CLAYTON FRANCIS HEINRICH
CARLENE MICHELLE HEINRICH
OF ROBERTSTOWN SA 5381
AS JOINT TENANTS

Description of Land

SECTION 221
HUNDRED OF BRIGHT
IN THE AREA NAMED BRIGHT

Last Sale Details

There are no sales details recorded for this property

Constraints

Encumbrances

NIL

Stoppers

NIL

Valuation Numbers

Valuation Number	Status	Property Location Address
9802598113	CURRENT	Lot 221 GOVT ROAD, BRIGHT, SA 5381

Notations

Dealings Affecting Title

NIL

Notations on Plan

NIL



Registrar-General's Notes

NIL

Administrative Interests

NIL

REFERENCE

Field Book No. 3339
Pages 11-15

221 345 A

Corner	Bearing	Work Distance
A	80°02'	PM 2 1-0
B	71°10'30"	PM 2 3-0
C	54°05'	PM 2 5-0
D	19°11'	PM 2 4-6
E	25°38'	PM 2 5-1
F	34°40'	PM 2 3-4
G	104°32'	PM 2 7-7
H	68°10'	PM 2 0-2
I	146°22'	PM 2 2-0
J	281°22'	PM 2 2-2

5 MILES NE. FROM ROBERTSTOWN

Section D.R. 357/67, D.L. 174/67
 Claimed, Book 463, P. 1
 Surveyed by W. L. Hughes
 Report D.R. 357/67
 Filed in Land Office Plans
 19-4-65

Notations of Permanent Marks shown thus:
 * Metal Pins
 * Rusty Nails
 * Old Marks
 * Observation Signs
 * 7 Irons William Hughes

I, T. Hughes William Hughes
 Licensed Surveyor of South Australia, do hereby certify that
 this plan has been made from surveys conducted by me
 or under my own personal supervision, inspection and
 field work, and that both plan and survey are correct
 and have been made in accordance with Regulations
 under the Surveyors Act, 1895-1961.
 Dated this 14th day of October 1967

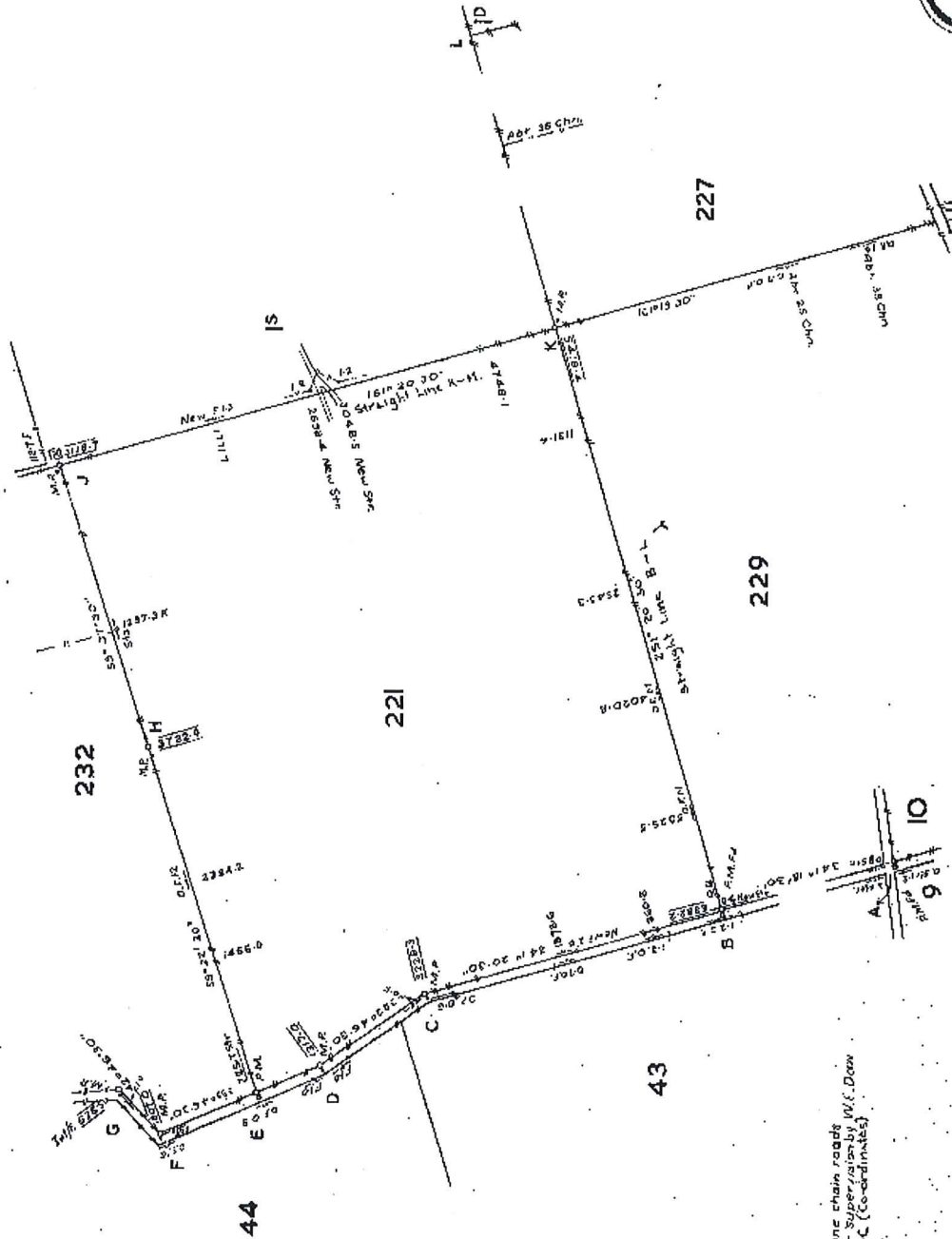
W. W. Hughes
 Licensed Surveyor

SCAT 10 20 SOCHMS

50 Air Lines
 10 S.C.
 25-6-57

HUNDRED OF BRIGHT LAND GRANT

52



Notes: All roads are one chain roads
 Surveyed under supervision by W. L. Hughes
 Datum Line, A-C (Coordinates)
 Zone 8, ANZ

Vide Pages 13, 35, 45-6

REAL PROPERTY ACT, 1886



The Registrar-General certifies that this Title Register Search displays the records maintained in the Register Book and other notations at the time of searching.



Certificate of Title - Volume 5689 Folio 928

Parent Title(s) CT 5295/766
Creating Dealing(s) RTC 8696570
Title Issued 07/09/1999 **Edition** 3 **Edition Issued** 17/07/2018

Estate Type

FEE SIMPLE

Registered Proprietor

JOHN ROBERT LIPSCHINSKI
OF ROBERTSTOWN SA 5381

Description of Land

ALLOTMENT 51 DEPOSITED PLAN 51338
IN THE AREA NAMED BRIGHT
HUNDRED OF BRIGHT

Easements

SUBJECT TO EASEMENT(S) OVER THE LAND MARKED A.B AND C TO THE ETSA CORPORATION (T 3030798 T 5085252 AND T 5276850 RESPECTIVELY)

Schedule of Dealings

Dealing Number	Description
9211582	MORTGAGE TO WESTPAC BANKING CORPORATION

Notations

Dealings Affecting Title	NIL
Priority Notices	NIL
Notations on Plan	NIL

Registrar-General's Notes

APPROVED FX251560

Administrative Interests	NIL
---------------------------------	-----



REAL PROPERTY ACT, 1886



The Registrar-General certifies that this Title Register Search displays the records maintained in the Register Book and other notations at the time of searching.



Certificate of Title - Volume 5689 Folio 927

Parent Title(s)	CT 4213/306, CT 5295/766, CT 5471/432		
Creating Dealing(s)	RTC 8696570		
Title Issued	07/09/1999	Edition 3	Edition Issued 12/10/2001

Estate Type

FEE SIMPLE

Registered Proprietor

TRANSMISSION LESSOR CORPORATION
OF 200 VICTORIA SQUARE ADELAIDE SA 5000

Description of Land

ALLOTMENT 50 DEPOSITED PLAN 51338
IN THE AREA NAMED BRIGHT
HUNDRED OF BRIGHT

Easements

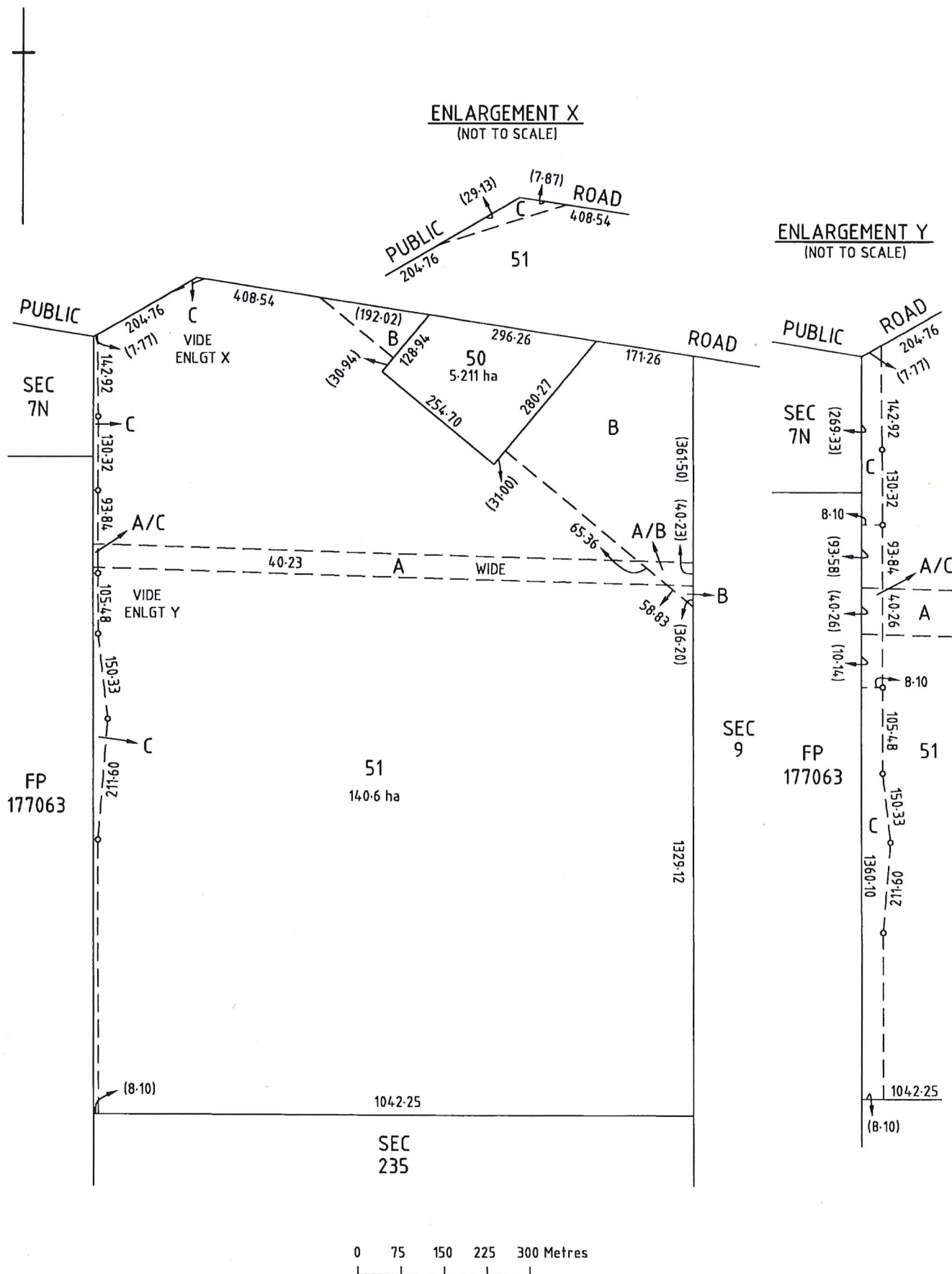
NIL

Schedule of Dealings

Dealing Number	Description
9061500	LEASE TO ELECTRANET PTY. LTD. COMMENCING ON 31/10/2000 AND EXPIRING ON 30/10/2200 PURSUANT TO ELECTRICITY CORPORATIONS (RESTRUCTURING AND DISPOSAL) ACT 1999

Notations

Dealings Affecting Title	NIL
Priority Notices	NIL
Notations on Plan	NIL
Registrar-General's Notes	NIL
Administrative Interests	NIL



APPENDIX 3

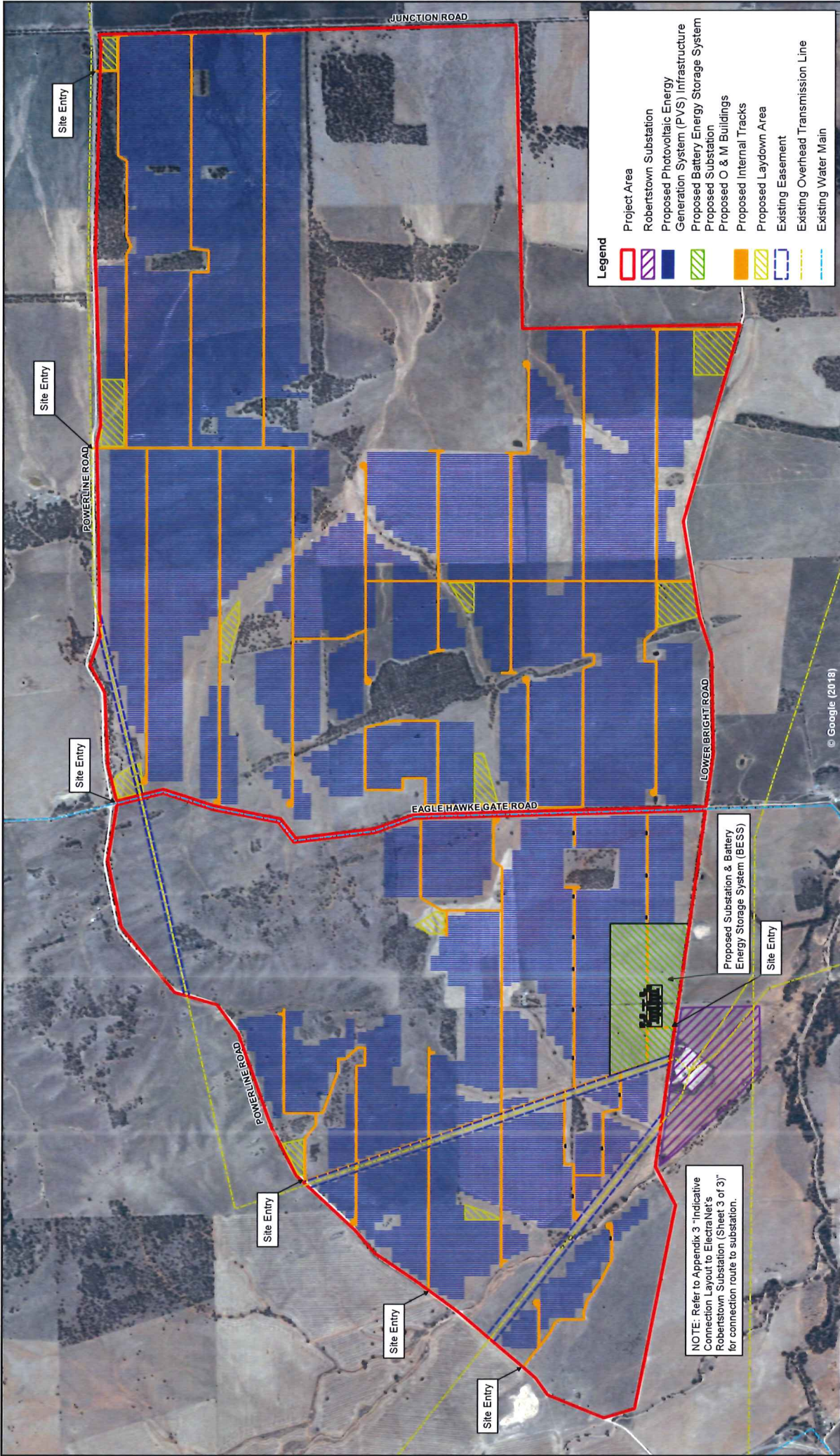
Indicative Layouts

3.1 Indicative PVS Operations Layout

3.2 Indicative BESS Operations Layout, Project Substation Layout and Operations and Maintenance Layout

3.3 Indicative Connection Layout to ElectraNet's Robertstown Substation

3.1 Indicative PVS Operations Layout



- Legend**
- Project Area
 - Robertstown Substation
 - Proposed Photovoltaic Energy Generation System (PVS) Infrastructure
 - Proposed Battery Energy Storage System
 - Proposed Substation
 - Proposed O & M Buildings
 - Proposed Internal Tracks
 - Proposed Laydown Area
 - Existing Easement
 - Existing Overhead Transmission Line
 - Existing Water Main




Indicative PVS Operations Layout

Robertstown Solar | Robertstown SA Australia

23/11/2018

Sheet 1 of 3

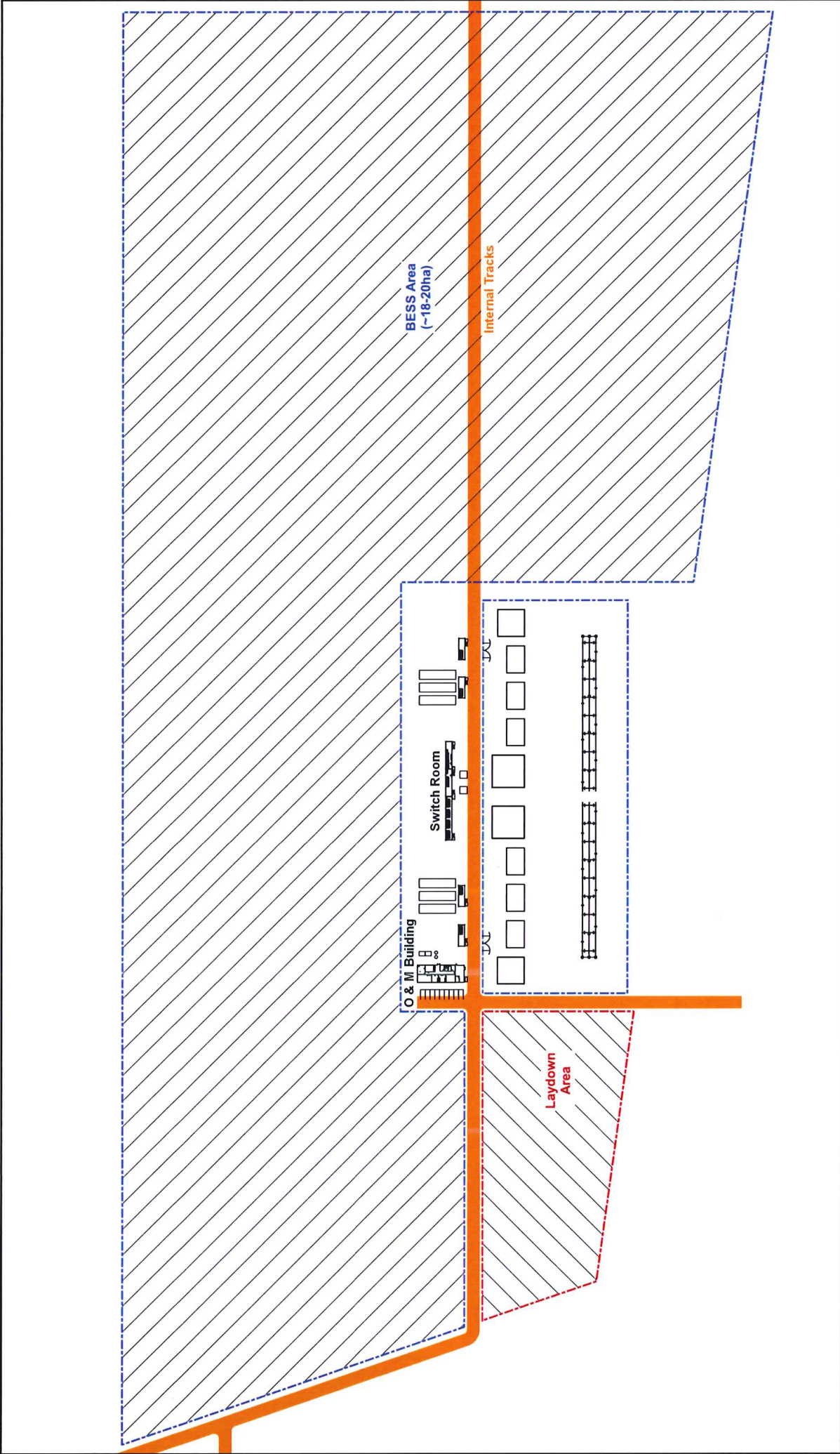


00.250.50.751 km

Accuracy: location and scale of features is indicative only
Map Projection: GDA 1994 MGA Zone 54

Author:	SW
Reviewer:	SMC/ JB
A3 Scale:	1:19,000
Job Ref/Version:	11314/ V03

3.2 Indicative BESS Operations Layout, Project Substation Layout and Operations and Maintenance Layout



<div>Author:SW</div>		<div>Sheet 2 of 3 Indicative BESS Operations Layout, Project Substation Layout and Operations and Maintenance Layout</div> <div>Robertstown Solar Robertstown SA Australia</div> <div>23/11/2018</div>	<div><div><div></div></div><div><div>0</div><div>25</div><div>50</div><div>75</div><div>100 m</div></div></div>
<div>Reviewer:SMC/ JB</div>			
<div>A3 Scale:1:2,000</div>			
<div>Job Ref/Version:11314/ V01</div>			

3.3 Indicative Connection Layout to ElectraNet's Robertstown Substation

Disclaimer: Google makes no claims as to the accuracy of their imagery services, and varies from sub-meter resolution in major cities to 15m resolution for most of the earth. The positional accuracy of DPTI SA land parcels are dependent upon the scale of the historically captured source mapping and the subsequent digitising processes, with variable precision across the state. The exact location of cadastral boundaries and the proposed connection will be confirmed by survey at a later date.



Google Earth

Image © 2018 CNES / Airbus
© 2018 Google

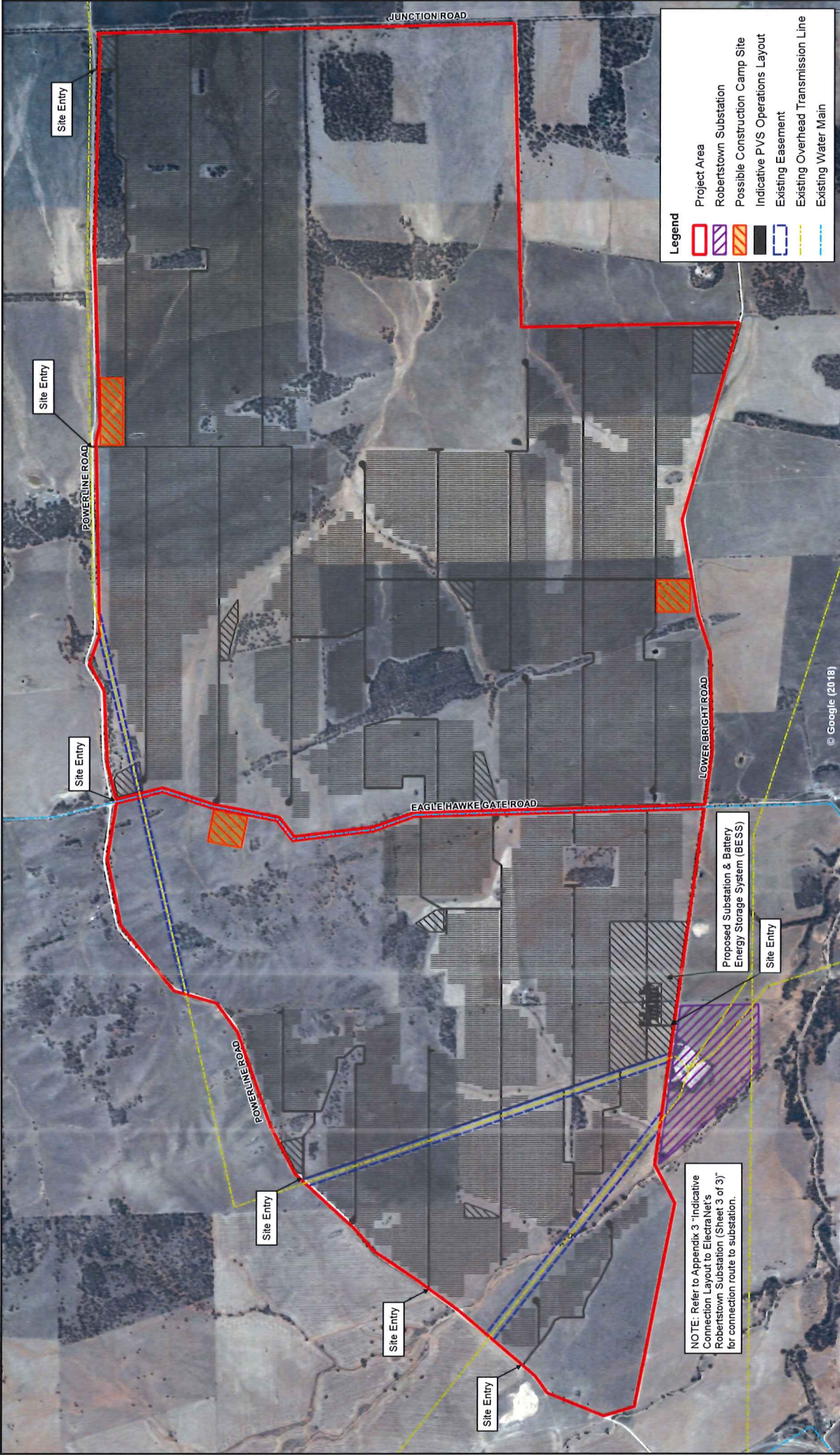
Author:	SW
Reviewer:	SMC/ JB
A3 Scale:	N/A
Job Ref/Version:	11314/ V02

Sheet 3 of 3	Indicative Connection Layout to ElectraNet's Robertstown Substation (Underground Cable)
Robertstown Solar Robertstown SA Australia	
29/11/2018	



APPENDIX 4

Typical Construction Camp Layout

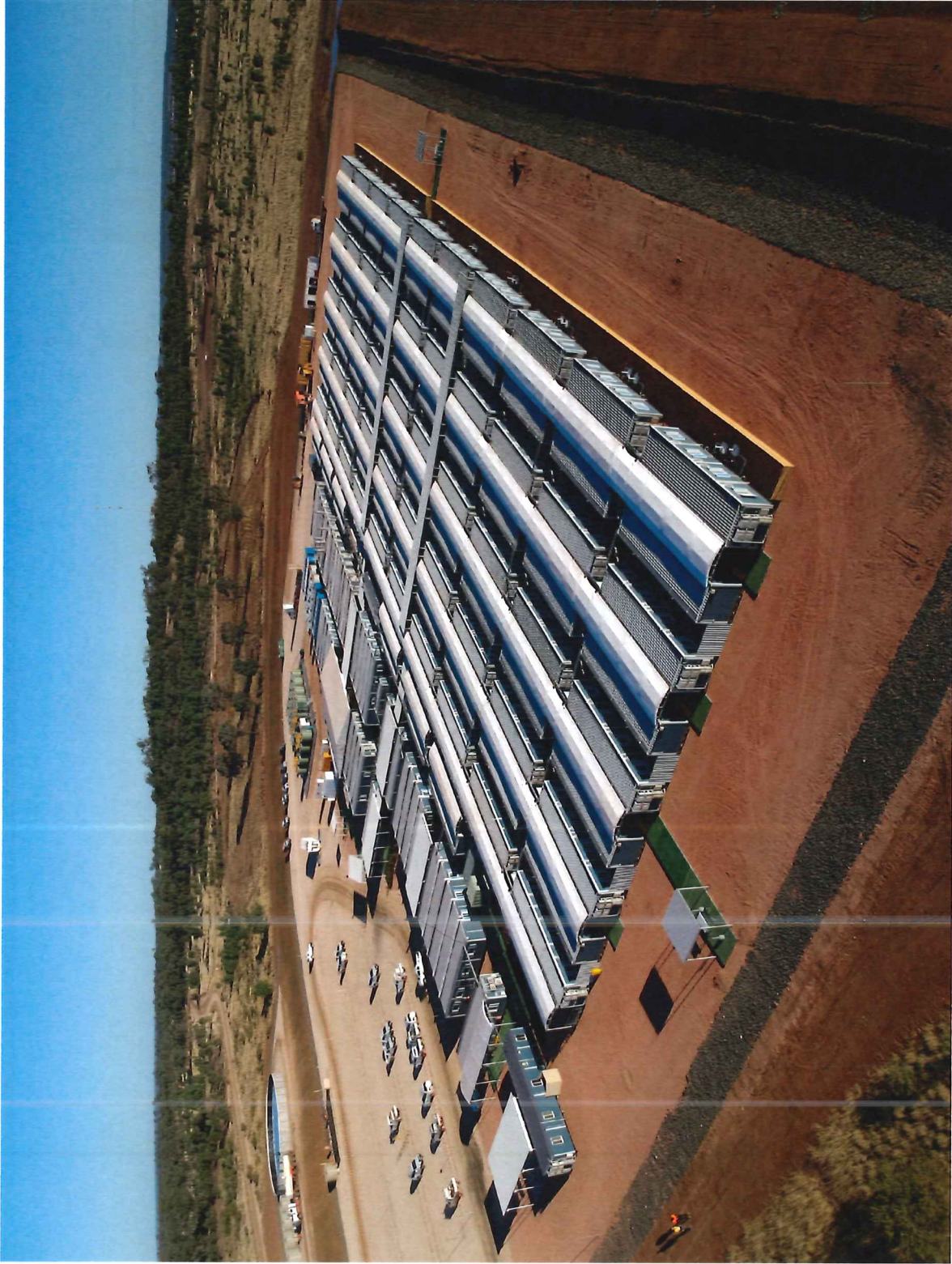


Author: SW		Sheet 1 of 3		 ROBERTSTOWN SOLAR	
Reviewer: SMC/ JB		Possible Locations of Construction Camp			
A3 Scale: 1:19,000		Robertstown Solar Robertstown SA Australia			
Job Ref/Version: 11314/ V01		23/11/2018			

Map Projection: GDA 1994 MGA Zone 54

Accuracy: location and scale of features is indicative only

11314_PRR_Potential_Construction_Camps.dgn



Author:		SW	Sheet 3 of 3	Photograph of Typical Construction Camp
Reviewer:		SMC/ JB		
A3 Scale:		N/A		
Job Ref/Version:		11314/ V01		
			Robertstown Solar Robertstown SA Australia	
			23/11/2018	



APPENDIX 5

Development Plan Assessment

DEVELOPMENT PLAN ASSESSMENT

Prepared for Robertstown Solar



EPS ENERGY

Reference No. 11314

November 18

www.robertstownsolar.com.au

QUALITY ASSURANCE AND DECLARATION

Quality Assurance and Version Control Table

Project: Robertstown Solar

Client: Robertstown Solar 1 Pty Ltd and Robertstown Solar 2 Pty Ltd

Rev: **Date:** **Reference:**

V01 29.11.2018 11314_Robertstown Development Plan Assessment

Checked by: Marina Budisavljevic

Approved by: Steve McCall

Declaration: *The opinions and declarations in this document are ascribed to EPS Energy and are made in good faith and trust that such statements are neither false nor misleading. In preparing this document, EPS Energy has considered and relied upon information obtained from the public domain, supplemented by discussions between key EPS Energy staff, representatives from governing agencies and independents, including the client and specialist consultants.*

Applicant: EPS Energy
PO Box 195
Charlestown
NSW 2290
(02) 9258 1362

Prepared By: Simon Duffy

Project Land:	CT 5565/131	A91 FP212965
	CT 5431/657	Section 227
	CT 5431/659	Section 232
	CT 5465/354	Section 13
	CT 5464/828	Section 42
	CT 5941/840	Section 43
	CT 5561/287	Section 229
	CT 5561/89	Section 221
	CT 5951/34	Section 44 & 45
	CT 5550/784	A91 FP212508
	CT 5689/928	A51 DP51338
	CT 5689/927	A50 DP51338

GOYDER COUNCIL DEVELOPMENT PLAN (CONSOLIDATED – 24 NOVEMBER 2016)

Assessment Section		Project Response
Primary Production Zone Provisions		
Objectives (P110)	1. Economically productive, efficient and environmentally sustainable primary production	<p>The Robertstown Solar Project (Project) is located within the Primary Production Zone as shown in Zone Map Go/1.</p> <p>The Project will implement a Construction Management Plan for the construction phase and Operation Management Plan for the operation phase approved, by the Minister for Planning or delegate, to manage potential adverse impacts.</p> <p>The Project will not impede the operation of the established agricultural land uses in the area through any nuisance or harmful creating impact.</p>
	3. Protection of primary production from encroachment by incompatible land uses and protection of scenic qualities of rural landscapes.	<p>The Project is envisaged in the Primary Production Zone and therefore is not considered an incompatible land use.</p> <p>The key features of the Project's rural landscape include, cleared land used for cropping and grazing, vegetated land used for grazing and utility scale electricity infrastructure comprising a substation and powerlines.</p> <p>The ElectraNet Robertstown Substation is located on Lower Bright Road adjacent to the Project area.</p> <p>The Planning Report's Figure 2-3 - key physical features of the Project land, show overhead 275kV transmission lines running north/north</p>

Assessment Section	Project Response
	<p>west from the substation across the western portion of the Project area, overhead 275/132kV transmission lines running south/south east from the substation across adjoining land and an overhead 132kV transmission line running east/west across the northern portion of the Project area.</p> <p>Utility scale solar projects are becoming more common place in rural settings and acceptable rurally located infrastructure.</p> <p>The Project is not located in an area of known visual or scenic significance.</p> <p>The Project's rural landscape scenic quality is categorised as low to moderate at most.</p>
4. Accommodation of wind farms and ancillary development.	<p>Wind farms are a type of a renewable energy facility. The Project is another type of renewable energy facility suitable in the Primary Production Zone. The Project is development that contributes to the desired character of the zone and is a form of development contemplated within the zone.</p>
5. Development that contributes to the desired character of the zone.	<p>Wind farms and ancillary development are envisaged within the zone and constitute a component of the zone's desired character subject to implementation of management techniques set out by general/ council wide policy regarding renewable energy facilities.</p> <p>The Project is another type of renewable energy facility envisaged within the zone and constitute a component of the zone's desired character subject to implementation of management techniques set</p>

Assessment Section		Project Response
Desired Character (P110)	<p>Function: <i>Wind farms and ancillary development are envisaged within the zone and constitute a component of the zone's desired character.</i></p> <p><i>Subject to implementation of management techniques set out by general / council wide policy regarding renewable energy facilities, these visual impacts are to be accepted in pursuit of benefits derived from increased generation of renewable energy.</i></p>	<p>out by general/ council wide policy regarding renewable energy facilities.</p> <p>The Project is a type of renewable energy facility envisaged within the zone and constitute a component of the zone's desired character subject to implementation of management techniques set out by general/ council wide policy regarding renewable energy facilities. The Project will contribute to the benefits derived from increased generation of renewable energy.</p> <p>The Project area is an appropriate location because of the co-location with existing utility scale electricity infrastructure and the short distance for the grid connection to the Robertstown substation thereby minimising the expanse of overhead power lines.</p>
	<p>Pattern of Development: <i>Large allotments will be maintained to prevent the reduced viability of primary production and the amalgamation of allotments will increase to maintain commercially viable farm sizes.</i></p>	<p>The Project area is approximately 1800ha. The Project leases the land from landowners at a commercial rate. The lease payments will ensure the commercially viability of the land during the life of the Project.</p>
	<p>Public Realm: <i>The scenic qualities of the public routes and views across the primary production area will remain attractive and generally unobstructed by inappropriate development, including excessive advertising signage. The nature and appearance of road reserves will vary across the primary production area depending on the role the road plays. Special tourist drives, particularly to conservation parks, will include vegetation corridors of biodiversity significance. Areas of conservation</i></p>	<p>The Project does not include advertising signage and is not located along tourist routes identified in the Development Plan Location Map Go/1.</p> <p>The Project may provide the catalyst to create tourism opportunities for Robertstown.</p>

Assessment Section	Project Response
<p><i>and biodiversity significance will be protected from inappropriate new development.</i></p>	<p>The Project's rural landscape includes utility scale electricity infrastructure visible from public roads i.e. Robertstown Substation and associated transmission lines.</p> <p>Sections of the Project together with existing utility scale electricity infrastructure will be viewed from Powerline Rd, Lower Bright Rd and Junction Rd, local roads with low local traffic volumes.</p> <p>A section of the Project together with existing utility scale electricity infrastructure i.e. transmission lines, will be viewed from Worlds End Highway identified as a Secondary Arterial Road on the Overlay Map Go/1 Transport that accounts for low volumes of local and regional traffic.</p>
<p>Built Form:</p> <p><i>Other structures will be of a form that blends with, and does not detract from, the scenic qualities and function of the primary production area.</i></p>	<p>The Project co-locates with existing utility scale electricity infrastructure.</p> <p>The Project's Indicative design drawings attached as Appendix 3 to the Planning Report is designed and sited to minimise impacts and maximise the generation capability. The location of the buildings required during the Project's construction phase and operational phase of approximately 30 years is based on the function and role of the buildings for the Project and so as to not interfere with the performance of the panels. The buildings are similar in size to buildings typically found in a primary production area e.g. intensive animal keeping infrastructure, shearing sheds, machinery sheds and grain facilities such as silos.</p> <p>The buildings are located near Lower Bright Road and adjacent to the Robertstown Substation and associated transmission lines.</p>

Assessment Section	Project Response
<p>Building Materials/Character:</p> <p><i>New buildings appropriately sited, designed and screened by vegetation. New buildings will be constructed using materials and colours that blend with the rural landscape and are traditionally used within the rural environment including corrugated steel, stone and timber.</i></p>	<p>The size of the buildings will be similar to buildings and structures typically found in a primary production area and will be constructed using materials and colours that blend with the rural landscape as much as possible.</p> <p>Depending on the final design existing vegetation may sufficiently screen the buildings. If required targeted landscaping for the buildings can be incorporated into the final design drawings.</p>
<p>Key Design Elements:</p> <p><i>When determining whether or not a development proposal is in accordance with the Desired Character, greater weight should be given to the following design elements:</i></p> <ul style="list-style-type: none"> <i>Impact on the sustainability and viability of primary production uses;</i> <i>Visual impact on the landscape character;</i> <i>Impact on the freight network.</i> 	<p>The Project's Indicative layout in the preliminary design drawings attached as Appendix 3 to the Planning Report has been designed and sited to minimise impacts and not to impede the operation of the primary production uses in the area through encroachment, over development of the Project area, noise/emissions or any harmful or nuisance -creating impacts.</p> <p>The Project is not located in visually prominent locations such as ridgelines or visible from scenic routes and valuable scenic and environmental areas. The Project's rural landscape scenic quality is classified as low to moderate. The Project area is an appropriate location because of the co-location with existing utility scale electricity infrastructure and the short distance required for the grid connection (minimising the expanse of overhead power lines).</p> <p>Only a section of the Project will be viewed from a small section of the Worlds End Highway identified as a Secondary Arterial Road on the Overlay Map Go/1 Transport. There is existing utility scale electricity infrastructure i.e. transmission lines in this part of the Project area</p>

Assessment Section	Project Response
	visible from Worlds End Highway. The Project design will not adversely impact the freight network.
Principles of Development Control (P112)	<p>Land Use:</p> <p>1. The following forms of development are envisaged in the zone:</p> <ul style="list-style-type: none"> • "wind farm and ancillary development" <p>2. Development listed as non-complying is generally inappropriate and not acceptable unless it can be demonstrated that it does not undermine the objectives and principles of the Development Plan.</p>
	<p>The Project is not listed as a non-complying.</p> <p>The Project area has good energy generation potential and provides the opportunity for efficient generation of electricity. The Project area is not in a visually prominent location.</p> <p>The Project's final design may site some of the Project's components including buildings closer to Lower Bright Road and Powerline Road than envisaged by the generic setback policy to maximise the opportunity to harvest the sun for the generation of electricity.</p>
	<p>The Project does not include dwellings or residential outbuildings. The Project's indicative layout attached as Appendix 3 to the Planning Report shows the buildings required for a utility scale solar development.</p> <p>For example, one of the buildings is for the Project's administration and control functions for Project. The building will likely be a single storey structure with the overall height of approximately six metres. Car</p>

Assessment Section	Project Response
	<p>parking will be located within the vicinity of the administration building that will accommodate staff, visitors and contractor parking.</p> <p>The final selected battery energy storage system may be stored in open areas (like the Tesla design), shipping container style structures or large sheds, similar to intensive animal keeping sheds used in the Primary Production Zone.</p> <p>The buildings are grouped together and located adjacent to the Robertstown Substation and near existing transmission lines that aligns with the current infrastructure visual amenity when viewed from this part of Lower Bright Road.</p> <p>Depending on the final layout plan the buildings may be totally or partially screened from public roads by exiting vegetation. If required targeted landscaping for the buildings can be incorporated into the final design.</p>
<p>Form and character:</p> <p><i>10. Development should not be undertaken unless it is consistent with the desired character for the zone.</i></p> <p><i>11. Structures and buildings should generally be set back a minimum of 30 metres from all road boundaries</i></p>	<p>The Project is a type of renewable energy facility envisaged within the zone and constitute a component of the zone's desired character.</p> <p>The Project's Indicative layout attached as Appendix 3 to the Planning Report shows the solar arrays may not be setback a minimum of 30m from all road boundaries. The Project has been designed and sited to maximise the energy generation. A set back of approximately 15m from the road boundaries will likely be maintained. The Project's buildings will be approximately 20m from the Lower Bright Road boundary. The location of the Project's buildings to the Lower Bright road boundary is consistent with the location of the Robertstown Substation in relation to Lower Bright Rd. Land Use Control 4 permits the Project to be closer</p>

Assessment Section		Project Response
		to roads than envisaged by generic setback policy. The final Project layout that will be submitted to the relevant authority for approval prior to the commencement of construction will identify the setbacks.
	<p>Land Division:</p> <p>13. <i>Land division involving boundary realignments should only occur where the number of resulting allotments of less than 100 hectares is not greater than the number that existed prior to the realignment.</i></p>	The Project doesn't trigger the Land Division requirements.
General Provisions		
<p>Crime Prevention (P19)</p>	<p>Objectives:</p> <p>1. <i>A safe, secure, crime resistant environment where land uses are integrated and designed to facilitate community surveillance.</i></p> <p>Principles of Development Control:</p> <p>1. <i>Development should be designed to maximise surveillance of public spaces through the incorporation of clear lines of sight, appropriate lighting and the use of visible permeable barriers wherever practicable</i></p>	<p>A 1.8m – 2.4m (approximately) high wire fence will be installed around the Project area. A security gate will allow access to the Project area.</p> <p>Alarms and cameras are likely to be used to monitor the Project facilities 24 hours a day, 7 days a week. Low spill security lighting will be used in certain locations and approximately 4m will be provide between the perimeter fence and the solar panel blocks.</p>
<p>Design and Appearance (P20)</p>	<p>Objectives:</p> <p>1. <i>Development of a high architectural standard that responds to and reinforces positive aspects of the local environment and built form.</i></p>	<p>The Project is defined as 'electricity infrastructure, in accordance with the definition provided in Section 4 of the Electricity Act 1996'. The Project is an electricity generating plant with powerlines, substation/s, equipment for metering, monitoring and controlling electricity and will include items required in the connection and supply of electricity.</p>

Assessment Section	Project Response
<p>Principles of Development Control:</p> <p>2. <i>The design of a building may be of a contemporary nature and exhibit an innovative style provided the overall form is sympathetic to the scale of development in the locality and with the context of its setting with regard to shape, size, materials and colour.</i></p> <p>5. <i>Where a building is sited on or close to a side boundary, the side boundary wall should be sited and limited in length and height to minimise:</i></p> <p style="padding-left: 40px;">(a) <i>the visual impact of the building as viewed from adjoining properties</i></p> <p style="padding-left: 40px;">(b) <i>overshadowing of adjoining properties and allow adequate natural light to neighbouring buildings.</i></p> <p>6. <i>Building form should not unreasonably restrict existing views available from neighbouring properties and public spaces.</i></p> <p>7. <i>Transportable buildings and buildings which are elevated on stumps, posts, piers, columns or the like, should have their suspended footings enclosed around the perimeter of the building with brickwork or timber, and the use of verandas, pergolas and other suitable architectural detailing to give the appearance of a permanent structure.</i></p> <p>Building Setbacks from Road Boundaries:</p> <p>18. <i>The setback of buildings from public roads should:</i></p>	<p>The Design and Appearance Objective and Principles of Development Control are predominately for urban built form. The principle objective in designing a solar farm is to configure the design that best utilises the space to collect as much of the sun's energy as possible on any given day. This includes the number, size, and angle of the panels.</p> <p>The Project area is an appropriate location because of the co-location with existing utility scale electricity infrastructure and the short distance required for the grid connection minimising the expanse of possible overhead power lines.</p> <p>The Project's buildings have been sited to minimise any potential visual impacts of the Project's buildings when viewed from an adjoining property. The Project's buildings will not overshadow adjoining properties.</p> <p>The Project's buildings will not unreasonably restrict existing views available from neighbouring properties and public spaces.</p> <p>Any transportable buildings and buildings which are elevated on stumps, posts, piers, columns or the like, will have their suspended footings enclosed around the perimeter of the building with brickwork or timber, and were practicable adopt the use of verandas, pergolas and other suitable architectural detailing to give the appearance of a permanent structure.</p> <p>Primary Production Zone Land Use control 4 permits the Project to be closer to roads than envisaged by generic setback policy.</p>

Assessment Section		Project Response
	<i>(a) be similar to, or compatible with, setbacks of buildings on adjoining land and other buildings in the locality.</i>	
Hazards (P27)	<p>Objectives:</p> <ol style="list-style-type: none"> 1. Maintenance of the natural environment and systems by limiting development in areas susceptible to natural hazard risk. 2. Development located away from areas that are vulnerable to and cannot be adequately and effectively protected from the risk of natural hazards. 3. Development located to minimise the threat and impact of bushfires on life and property. 4. Expansion of existing non-rural uses directed away from areas of high bushfire risk. 6. The environmental values and ecological health of receiving waterways and marine environments protected from the release of acid water resulting from the disturbance of acid sulphate soils. 7. Protection of human health and the environment wherever site contamination has been identified or suspected to have occurred. 9. Minimisation of harm to life, property and the environment through appropriate location of development and appropriate storage, containment and handling of hazardous materials. <p>Principles of Development Control – Flooding:</p> <ol style="list-style-type: none"> 4. Development should not be undertaken in areas liable to inundation by tidal, drainage or flood waters unless the development can achieve all of the following.... 	<p>The Project is not in an area susceptible to significant natural hazard risk. A review of overlays from SA Map viewer indicate the only potential hazard is bushfire. The Project area's bushfire risk is mapped General.</p> <p>The Project's final design will apply appropriate standards and management strategies to manage hazards such as bushfire, the Project area's environmental values, potential harm to life, potential harm to property and potential harm to environment.</p> <p>The Project area is not listed on the South Australian Contamination index. Based on the historical and current agricultural activities no areas of significant contamination are expected to be encountered during the Project's construction or operation.</p> <p>Based on the proposed use of the Project area the historical and current agricultural activities do not pose a significant human or environmental health risk.</p> <p>A review of overlays in the Development Control Plan and from SA Map viewer indicate the Project area is not subject to inundation. There are a number of ephemeral natural watercourses/drainage lines in the Project area that contain water from time to time. The Project's final design will consider the ephemeral watercourses/drainage lines.</p>

Assessment Section	Project Response
<p>5. Development, including earthworks associated with the development, should not do any of the following:</p> <ul style="list-style-type: none"> (a) impede the flow of floodwaters through the land or other surrounding land (b) occur on land where the risk of flooding is unacceptable having regard to personal and public safety and to property damage (c) increase the potential hazard risk to public safety of persons during a flood event (d) aggravate the potential for erosion or siltation or lead to the destruction of vegetation during a flood (e) cause any adverse effect on the floodway function (f) increase the risk of flooding of other land (g) obstruct a watercourse. 	<p>The Project including required earthworks will not impede the flow of floodwaters through the land or other surrounding land, is not on land where the risk of flooding is unacceptable having regard to personal and public safety and to property damage, will not increase the potential hazard risk to public safety of persons during a flood event, will not aggravate the potential for erosion or siltation or lead to the destruction of vegetation during a flood, will not cause any adverse effect on the floodway function, will not increase the risk of flooding of other land and will not obstruct a pertinent watercourse.</p>
<p>Principles of Development Control – Bushfire:</p> <p>6. Buildings and structures should be located away from areas that pose an unacceptable bushfire risk as a result of one or more of the following:</p> <ul style="list-style-type: none"> (a) vegetation cover comprising trees and/or shrubs (b) poor access (c) rugged terrain (d) inability to provide an adequate building protection zone 	<p>The Project area's bushfire risk is mapped General. The majority of the Project area is cleared land with woody vegetation in the other areas.</p> <p>The Project area's dominant landform is an undulating stony plain which has been extensively cleared for agriculture. Some of the Project area is more heavily disturbed with little vegetation because of yearly cropping and the associated use of herbicides. There will be areas of vegetation within the development area.</p> <p>The risk of initiating fire from commercial solar panels and inverters is very low due to their high quality. The Project area does pose a risk of fire due to ground cover.</p>

Assessment Section	Project Response
<p><i>(e) inability to provide an adequate supply of water for fire-fighting purposes.</i></p> <p>11. <i>Vehicle access and driveways to properties and public roads created by land division should be designed and constructed to facilitate safe and effective operational use for fire-fighting.</i></p>	<p>The Project will employ fire response measures to mitigate the risk and prevalence of bushfires including internal and perimeter roads designed to facilitate safe and effective operational use for fire-fighting.</p>
<p>Principles of Development Control – Salinity:</p> <p>13. <i>Development should not increase the potential for, or result in an increase in, soil and water salinity.</i></p>	<p>The SARIG 2018 Salinity non-watertable (soil salinity) mapping layer identifies the Project area as having low to moderately low salinity. The SARIG 2018 Salinity watertable induced (soil salinity) mapping layer identifies the Project area as having negligible salinity.</p> <p>The SARIG 2018 groundwater mapping layer indicates the Shallow Standing Water Level at 20m below Ground Level (BGL). The Shallow Standing Water Level represents the depth to standing water of the shallowest aquifer only. Other aquifers may well give rise to standing water at significantly different depths.</p> <p>The Project will involve short-term construction, followed by possibly decades of the land being inactive during operations. The limited or no cropping and consequently limited use of farm machinery on the Project area will be beneficial for the soils. While constructing the Project will require removal of some vegetation and the Project's operations will require water to clean the panels from time to time these activities will not lead to an increase in the Project area's typical groundwater levels and/or the leaching of salts, consequently the Project will not contribute to an increase in salinity levels.</p>

Assessment Section	Project Response
<p>Principles of Development Control - Acid Sulfate Soils:</p> <p>16. <i>Development and activities, including excavation and filling of land, that may lead to the disturbance of potential or actual acid sulfate soils should be avoided unless such disturbances are managed in a way that effectively avoids the potential for harm or damage to:</i></p> <p>(c) <i>agricultural or land-based aquaculture activities</i></p> <p>(e) <i>public health</i></p>	<p>The Australian Soil Resource Information System (ASRIS 2014) notes the probability of Acid Sulfate soils in the area is extremely low.</p>
<p>Principles of Development Control - Site Contamination:</p> <p>18. <i>Development, including land division, should not occur on contaminated land or on potentially contaminated land unless either of the following applies:</i></p> <p>(a) <i>remediation of the site is undertaken to a standard that makes it suitable and safe for the proposed use</i></p> <p>(b) <i>the site will be maintained in a condition, or the development will be undertaken in a manner, that will not pose a threat to the health and safety of the environment or to occupiers of the site or land in the locality.</i></p>	<p>The Project area is not listed on the South Australian Contamination index.</p> <p>Preliminary geotechnical investigations in May 2018 of some of the Project area found <i>"The site and subsurface conditions was visually assessed for contamination during the site investigations. No fill materials were encountered during the site investigation and there was no indication of contaminated soils"</i>.</p> <p>Based on the historical and current agricultural activities no areas of significant contamination are expected to be encountered during the construction or operation of the Project.</p> <p>Based on the proposed use of the Project area the historical and current agricultural activities do not pose a significant human or environmental health risk.</p>
<p>Principles of Development Control - Containment of Chemical and Hazardous Materials:</p>	<p>Fuels and chemicals are required during the construction and operation phases for light vehicles, plant and equipment.</p>

Assessment Section	Project Response
<p>19. Hazardous materials should be stored and contained in a manner that minimises the risk to public health and safety and the potential for water, land or air contamination.</p>	<p>During the construction and operation phases a storage and handling of chemical and hazardous materials management plan for each phase will be developed detailing the control measures to be implemented.</p>
<p>Principles of Development Control – Landslip:</p> <p>21. Development, including associated cut and fill activities, should not lead to an increased danger from land surface instability or to the potential of landslip occurring on the site or on surrounding land.</p>	<p>The Project area is not susceptible to land slip.</p> <p>The Project's earthworks will not lead to an increased danger from land surface instability or to the potential of landslip occurring on the Project area or on surrounding land.</p>
<p>Heritage Conservation (P31)</p> <p>Objectives:</p> <p>1. The conservation of areas, places and their settings of indigenous and non-indigenous cultural significance.</p> <p>Principles of Development Control:</p> <p>1. Development should conserve and not adversely impact on the cultural or natural significance of places, areas, artefacts and shipwreck that display any of the following values:</p> <p>(a) aesthetic</p> <p>(b) anthropological</p> <p>(c) archaeological</p> <p>(d) architectural</p> <p>(e) ecological</p> <p>(f) economic</p>	<p>An archaeological assessment of the Project was completed to determine the presence of Aboriginal and/or European heritage value within the Project area.</p> <p>The desktop heritage assessment is attached as Appendix 9.</p> <p>Preliminary field investigations in May 2018 entailed systematic inspection of high-risk areas using pedestrian survey approach. Survey visibility was high as the majority of the Project area was heavily disturbed by cropping and animal grazing.</p> <p><u>Aboriginal</u></p> <p>As part of the assessment, a search of the National Native Title register was completed. The Search returned one Native Title claim applicable to the Project area: Ngadjuri Nation #2 (SC2001/002). The contact for this claim is the Ngadjuri Nation Aboriginal Corporation.</p> <p>A search of the Department of Premier and Cabinet Aboriginal Affairs and Reconciliation, Register of Aboriginal Sites and Objects and the SA Museum Database was completed. The searches returned that no registered or reported sites are located within the current Project area.</p>

Assessment Section	Project Response
<p>(g) educational</p> <p>(h) geological</p> <p>(i) historic</p> <p>(j) palaeontologic</p> <p>(k) scientific</p> <p>(l) social</p> <p>(m) speleological</p> <p>(n) spiritual</p> <p>(o) technological.</p>	<p>However, they indicated it is likely that unrecorded Aboriginal sites are located within the undisturbed sections of the Project area.</p> <p>During the preliminary field investigations survey one Aboriginal site, three isolated artefacts and one culturally sensitive landscape were located.</p> <p><u>European</u></p> <p>The <i>Heritage Places Act 1993</i> makes provision for the identification, recording and conservation of places and objects of non-Aboriginal heritage significance in South Australia. Once registered, State Heritage Places are protected under the <i>Heritage Places Act 1993</i> and the <i>Development Act 1993</i>. It is an offence to damage, destroy, excavate or disturb locally and State significant heritage places without consent. There are no State Heritage Places or Local Heritage Places registered in the Project area.</p> <p>During preliminary field investigations four European sites (G80401R-01, G80401R-02, G80401R-04, G80401R-05) were located. The sites were considered to be significant at a local level.</p> <p>Discussions have commenced with the Ngadjuri Nation Aboriginal Corporation regarding the presence of Aboriginal archaeological value within the Project area.</p> <p>The preliminary cultural heritage survey works plus further discussion and cultural heritage work with the Ngadjuri Nation Aboriginal Corporation will inform preparation of the final Project layout plans.</p>

Assessment Section	Project Response
Heritage Places (P32)	All heritage sites currently identified have been excluded in the preliminary design.
<p>Objectives:</p> <ol style="list-style-type: none"> 1. The conservation of State and local heritage places. 2. The continued use, or adaptive re-use of State and local heritage places that supports the conservation of their cultural significance. 3. Conservation of the setting of State and local heritage places. 	<p>A search of the Department of Premier and Cabinet Aboriginal Affairs and Reconciliation, Register of Aboriginal Sites and Objects and the SA Museum Database was completed. The searches returned that no registered or reported sites are located within the current Project area. However, they indicated it is likely that unrecorded Aboriginal sites are located within the undisturbed sections of the Project area.</p> <p>Preliminary field investigations survey work in May 2018 of some of the Project area identified one Aboriginal site, three isolated artefacts (Complete Flake, Silcrete), one culturally sensitive landscape and four European sites of local significance which will inform the Project's final layout plans.</p>
<p>Principles of Development Control:</p> <ol style="list-style-type: none"> 1. A State heritage place spatially located on Overlay Maps Go/1, Go/2, Go/6, Go/7 and Go/11 – Heritage and more specifically identified in Table Go/2 – State Heritage Places, should not be demolished, destroyed or removed, in total or in part, unless 2. Development located within the Burra State Heritage Area indicated on Overlay Maps Go/6 and Go/7 – Heritage should be consistent with the Design Guidelines for the Burra State Heritage Area set out in Table Go/1 - Design Guidelines for the Burra State Heritage Area. 	<p>The Project area is not shown on Development Plan's heritage overlay maps including the Burra Heritage Area overlay map.</p>

Assessment Section		Project Response
	3. <i>Development of a State heritage place should retain those elements contributing to its heritage value, which may include (but not be limited to).....</i>	
Infrastructure (p38)	<p>Objectives:</p> <ol style="list-style-type: none"> 1. <i>Infrastructure provided in an economical and environmentally sensitive manner.</i> 4. <i>The visual impact of infrastructure facilities minimised.</i> 5. <i>The efficient and cost-effective use of existing infrastructure.</i> 	<p>The Project area is an appropriate location because of the co-location with existing utility scale electricity infrastructure i.e. Robertstown Substation and associated transmission lines and the short distance required for the grid connection, minimising the expanse of connection resulting in efficient and cost-effective use of existing infrastructure.</p> <p>The Project is a type of renewable energy facility the Development Plan contemplates the presence of in the Council area and in the Primary Production Zone. The Development Plan acknowledges it is difficult to mitigate visual impacts of large-scale renewable energy facilities. The Project has been designed to minimise the visual impact of the infrastructure while maximising the generation of renewable energy from this Project.</p> <p>The Project is not located in an area of known visual or scenic significance.</p> <p>The Project's rural landscape scenic quality is categorised as low.</p>
	<p>Principles of Development Control:</p> <ol style="list-style-type: none"> 1. <i>Development should not occur without the provision of adequate utilities and services including:</i> <ol style="list-style-type: none"> (a) <i>electricity supply</i> (b) <i>water supply</i> 	<p>The Project's design will incorporate the provision of adequate utilities and services.</p> <p>The Project area is an appropriate location because of the co-location with existing utility scale electricity infrastructure i.e. Robertstown substation and associated transmission lines and the short distance</p>

Assessment Section	Project Response
<p>(c) drainage and stormwater systems</p> <p>(d) waste disposal</p> <p>(e) effluent disposal systems</p> <p>(f) formed all-weather public roads</p> <p>(g) telecommunications services</p> <p>(h) social infrastructure, community services and facilities</p> <p>(i) gas services.</p> <p>8. Electricity infrastructure should be sited and designed to minimise its visual and environmental impacts</p> <p>10. Utilities and services, including access roads and tracks, should be sited on areas already cleared of native vegetation. If this is not possible, their siting should cause minimal interference or disturbance to existing native vegetation and biodiversity.</p>	<p>required for the grid connection, minimising the expanse of connection.</p> <p>The Project is a type of renewable energy facility the Development Plan contemplates the presence of in the Council area and in the Primary Production Zone. The Development Plan acknowledges it is difficult to mitigate visual and environmental impacts of large-scale renewable energy facilities. The Project has been designed to minimise the visual and environmental impacts of the infrastructure while maximising the generation of renewable energy from this Project.</p> <p>A key criterion for selecting the Project area is the land is currently used for agricultural land uses, including cropping, that reduces and minimises the amount of native vegetation that may need to be cleared or disturbed for the Project. The Project has been designed to minimise the interference or disturbance to existing native vegetation and biodiversity. The Development Plan recognises that a large renewable energy facility cannot be constructed in the Primary Production Zone without some disturbance to wildlife and vegetation.</p>
<p>Interface between land uses (P40)</p>	<p>Objectives:</p> <p>1. Development located and designed to prevent adverse impact and conflict between land uses.</p> <p>2. Protect community health and amenity and support the operation of all desired land uses.</p> <p>The key neighbouring land uses are agricultural land uses, utility scale electricity infrastructure comprising a substation and powerlines and roads.</p> <p>The Project's design and co-location with existing utility scale electricity infrastructure i.e. Robertstown Substation and associated transmission lines prevents adverse impact and conflict between land uses, prevents</p>

Assessment Section	Project Response
	<p>adverse impact to community health and amenity and will not unreasonable impede all desired land uses in this area.</p> <p>The Project is a type of renewable energy facility the Development Plan contemplates the presence of in the Council area and in the Primary Production Zone.</p>
<p>Principles of Development Control:</p> <p>1. <i>Development should not detrimentally affect the amenity of the locality or cause unreasonable interference through any of the following:</i></p> <ul style="list-style-type: none"> (a) <i>the emission of effluent, odour, smoke, fumes, dust or other airborne pollutants</i> (b) <i>noise</i> (c) <i>vibration</i> (d) <i>electrical interference</i> (e) <i>light spill</i> (f) <i>glare</i> (g) <i>hours of operation</i> (h) <i>traffic impacts.</i> <p>2. <i>Development should be designed and sited to minimise negative impact on existing and potential future land uses considered appropriate in the locality.</i></p>	<p>The Project is a type of renewable energy facility the Development Plan contemplates the presence of in the Council area and in the Primary Production Zone. The Development Plan acknowledges it is difficult to mitigate visual and environmental impacts of large-scale renewable energy facilities. The Project has been designed to minimise the visual and environmental impacts of the infrastructure while maximising the generation of renewable energy from this Project.</p> <p>The Planning Report concludes the Project will not detrimentally affect the amenity of the locality or cause unreasonable interference through the environmental issues listed in Development Control 1.</p> <p>The Project has been designed and sited to minimise negative impact on existing and potential future land uses considered appropriate in the locality. The Development Plan acknowledges it is difficult to mitigate the potential negative impacts of large-scale renewable energy facilities.</p> <p>The Project will develop an environmental framework through implementing a Construction Environmental Management Plan (CEMP) for the construction phase and Operational Environmental Management Plan (OEMP) for the operation phase which will be finalised prior to the commencement of construction and operation.</p>

Assessment Section	Project Response
	<p>The environmental framework establishes objectives and targets to manage the environmental aspects of the Project.</p> <p>The Project's CEMP and OEMP will address compliance with regulatory requirements, environmental protection policies and relevant guidelines and codes of practice. The specific regulatory requirements for each environmental aspect will be identified in the CEMP and / or OEMP and incorporated, where appropriate, in the performance indicators utilised for monitoring environmental compliance.</p> <p>Both the CEMP and OEMP will be implemented throughout the relevant phase of the Project, to ensure that potential environmental impacts are minimised.</p>
<p>Principles of Development Control – Noise:</p> <p>6. <i>Development should be designed, constructed and sited to minimise negative impacts of noise and to avoid unreasonable interference.</i></p> <p>7. <i>Development should be consistent with the relevant provisions each of the following documents:</i></p> <p>(a) AS 2107 Acoustics - Recommended Design Sound Levels and Reverberation Times for Building Interiors</p> <p>(b) AS 3671 Acoustics - Road Traffic Noise Intrusion, Building Siting and Construction</p> <p>(c) the current Environment Protection (Noise) Policy</p>	<p>The Project will be designed and sited to minimise negative impacts of noise and to avoid unreasonable interference.</p> <p>The Project will be constructed and operated to be consistent with:</p> <p>(a) AS 2107 Acoustics - Recommended Design Sound Levels and Reverberation Times for Building Interiors</p> <p>(b) AS 3671 Acoustics - Road Traffic Noise Intrusion, Building Siting and Construction</p> <p>(c) the current Environment Protection (Noise) Policy</p> <p>The Project's CEMP and OEMP will address compliance with regulatory noise requirements.</p>
<p>Principles of Development Control – Rural Interface:</p>	<p>The Project does not include urban development such as residential development.</p>

Assessment Section		Project Response
	10. Existing primary production uses and mineral extraction should not be prejudiced by the inappropriate encroachment of sensitive uses such as urban development.	
Land Division (P42)	<p>Objectives:</p> <p>2. Land division that creates allotments appropriate for the intended use.</p> <p>4. Land division restricted in rural areas to ensure the efficient use of rural land for primary production and avoidance of uneconomic infrastructure provision.</p>	The Project will not trigger the land division provisions.
Landscaping, Fences and Walls (P46)	<p>Objectives:</p> <p>1. The amenity of land and development enhanced with appropriate planting and other landscaping works, using locally indigenous plant species where possible.</p> <p>2. Functional fences and walls that enhance the attractiveness of development.</p>	<p>Given the scale and extent of the proposed development and the low level of visual impact, providing landscaping which is adequate to screen the entire Project area is not considered practical. If required targeted landscaping may be established to support erosion control and for visual amenity adjacent to car parking areas and control room/site office, battery energy storage areas and the Project's substation.</p> <p>Security fencing will be installed around the perimeter of the solar plant. Signage will be clearly displayed identifying hazards present within the solar plant.</p>
	<p>Principles of Development Control:</p> <p>1. Development should incorporate open space and landscaping in order to</p>	Given the scale and extent of the proposed development and the low level of visual impact, providing landscaping which is adequate to screen the entire Project area is not considered practical. Targeted landscaping may be established to support erosion control and for

Assessment Section	Project Response
	visual amenity adjacent to car parking areas and control room/site office, battery energy storage areas and the Project's substation.
Mineral Extraction (P48) Objectives: 1. Protection of mineral deposits against intrusion by inappropriate forms of development.	<p>The SARIG 2018 Mineral tenements production layer does not indicate current mining activities within the Project area of 1800ha.</p> <p>The SARIG 2018 Mineral tenements production layer does show the 1800ha Project area is within an exploration licence area i.e:</p> <p>Tenement Label: EL 6201</p> <p>Licencees: Ausmex Mining Pty Ltd (100%)</p> <p>Operators: Ausmex Mining Pty Ltd</p> <p>Commodities sought: Cobalt, Gold, Copper</p> <p>Tenement start date: 20/07/2018</p> <p>Tenement Expiry date: 19/07/2020</p> <p>Area: 818 square kilometres (81,800ha)</p>
Principles of Development Control: 1. <i>Known reserves of economically-viable mineral deposits should be kept free of development that may inhibit their future exploitation.</i> 2. <i>Development in proximity to mining operations should not be allowed where it may be exposed to adverse impacts resulting from mining activities.</i>	<p>The Project is not on land with known reserves of economically-viable mineral deposits and the Project is not in close proximity to existing mining operations.</p> <p>The Project is within the exploration licence area described above.</p>
Objectives:	The Project is a type of renewable energy facility the Development Plan contemplates the presence of in the Council area and in the Primary

Assessment Section	Project Response
<p>Natural Resources (P50)</p> <ol style="list-style-type: none"> 1. Retention, protection and restoration of the natural resources and environment. 2. Protection of the quality and quantity of South Australia's surface waters, including inland and underground waters. 3. The ecologically sustainable use of natural resources including soil and water resources (including underground water, surface water and watercourses as defined in the current Environment Protection (Water Quality) Policy). 5. Development consistent with the principles of water sensitive design. 6. Development sited and designed to:..... 8. Native flora, fauna and ecosystems protected, retained, conserved and restored. 10. Minimal disturbance and modification of the natural landform. 12. Protection of areas prone to erosion or other land degradation processes from inappropriate development. 	<p>The Development Plan acknowledges it is difficult to mitigate environmental impacts of large-scale renewable energy facilities. The Project has been designed to minimise environmental impacts of the infrastructure while maximising the generation of renewable energy from this Project.</p> <p>An objective of the Project is to apply appropriate standards and management strategies to minimise impacts to the areas natural resources and environment while maximising the generation capability of the Project.</p> <p>The Project's final design aims to retain, protect and restore the natural resources and environment where possible including protecting the natural resources via the adoption of a CEMP and OEMP that will address compliance with regulatory requirements, environmental protection policies and relevant guidelines and codes of practice. The specific regulatory requirements for each environmental aspect will be identified in the CEMP and OEMP and incorporated, where appropriate, in the performance indicators utilised for monitoring environmental compliance.</p>
<p>Principles of Development Control – Water Sensitive Design:</p> <ol style="list-style-type: none"> 5. Development should be designed to maximise conservation, minimise consumption and encourage re-use of water resources. 6. Development should not take place if it results in unsustainable use of surface or underground water resources. 	<p>Australia is one of the world's top 20 water-stressed nations.</p> <p>A report by the World Resources Industry notes the following key points:</p> <ul style="list-style-type: none"> • It identified Australia as one country vulnerable to water stress where the potential for cheap renewable energy, solar and wind as opposed to fossil fuels, could reduce water

Assessment Section	Project Response
<p>7. Development should be sited and designed to:.....</p> <p>8. Water discharged from a development site should:</p> <p>9. Development should include stormwater management systems to protect it from damage during a minimum of a 1-in-100 year average return interval flood.</p> <p>10. Development should have adequate provision to control any stormwater over-flow runoff from the site and should be sited and designed to improve the quality of stormwater and minimise pollutant transfer to receiving waters.</p> <p>11. Development should include stormwater management systems to mitigate peak flows and manage the rate and duration of stormwater discharges from the site to ensure the carrying capacities of downstream systems are not overloaded</p> <p>13. Development should include stormwater management systems to minimise the discharge of sediment, suspended solids, organic matter, nutrients, bacteria, litter and other contaminants to the stormwater system.</p> <p>16. Stormwater management systems should preserve natural drainage systems, including the associated environmental flows.</p> <p>17. Stormwater management systems should:.....</p>	<p>consumption country-wide as these technologies use minimal water.</p> <ul style="list-style-type: none"> • Every megawatt hour of electricity generated by coal withdraws around 60,700 litres and consumes about 2600 litres of water. • In the 2017-2018 financial year, Australian's have consumed 147 terrawatt hours of electricity, about 73 per cent of which comes from coal, which equates to around 455 billion litres of water. <p>The Project will contribute to reducing the amount of water required to generate electricity.</p> <p>Most of the Project area will be covered by solar array and spacing between the arrays. The areas underneath and surrounding the solar modules will not be impervious and therefore most of the Project area will be retained substantially in the current condition. Consequently, the runoff from most of the Project area, is likely to remain at the same post development levels and allow infiltration of rainfall.</p> <p>During the construction and operation phases a small area of the Project area will be occupied by administration buildings, laydown and compound area, inverters stations, battery area and switchyard/substation area that may increase runoff from this small area compared with current levels.</p> <p>The Project will include a minor wastewater treatment system. Discharge of treated sewage from the ablution block has the potential to decrease groundwater quality (e.g. through increased biological oxygen demands) if the sewage is not adequately treated or if the lining</p>

Assessment Section	Project Response
	<p>has not been appropriately designed the evapotranspiration bed could seep into the surrounding area.</p> <p>During the construction phase and operational phase, fuels oils and herbicides will be stored in the on-site compound area. Contaminants (e.g. hydrocarbons) from spills and leaks may potentially enter groundwater or drainage lines and impact on the environmental value of the receiving environment.</p> <p>The Project's CEMP and OEMP will include specific management measures or plans for a number of aspects including erosion and stormwater management, waste management, storage and handling of hazardous substances. The management strategies are designed in part to address the relevant principles of development controls for water sensitive design.</p> <p>The SARIG 2018 Salinity non-watertable (soil salinity) mapping layer identifies the Project area as having low to moderately low salinity. The SARIG 2018 Salinity watertable induced (soil salinity) mapping layer identifies the Project area as having negligible salinity.</p> <p>While constructing the Project will require removal of some vegetation and the Project's operations will require water to clean the panels from time to time these activities will not lead to an increase in the Project area's typical groundwater levels and/or the leaching of salts, consequently the Project will not contribute to an increase in salinity levels.</p> <p>The Project area is not mapped as subject to inundation and is not located in the Murray Floodplain or within the River Murray protected</p>

Assessment Section	Project Response
	<p>area or within a local Catchment area. Figure 2-3 shows there are ephemeral watercourses and drainage lines on the Project area. The ephemeral watercourses and drainage lines do not hold permanent water and only run during high rainfall. The Project's final design will consider the Project area's watercourses and drainage lines.</p>
<p>Principles of Development Control - Water Catchment Areas:</p> <p>20. Development should ensure watercourses and their beds, banks, wetlands and floodplains are not damaged or modified and are retained in their natural state, except where modification is required for essential access or maintenance purposes.</p> <p>28. Development should comply with the current Environment Protection (Water Quality) Policy.</p> <p>29. Development within the Water Management Area designated on Concept Plan Map Go/2 - Development Constraints - Water Management Areas should not adversely affect the quality or quantity of the water resource.</p>	<p>The Project area is within the Murray Darling Basin Water Management Area designated on the Concept Plan Map Go/2 - Development Constraints - Water Management Areas.</p> <p>The Project area is not located in the Murray Floodplain or within the River Murray protected area.</p> <p>The Project will not adversely affect the quality or quantity of the Murray Darling Basin.</p>
<p>Principles of Development Control - Biodiversity and Native Vegetation:</p> <p>30. Development should retain existing areas of native vegetation and where possible contribute to revegetation using locally indigenous plant species.</p> <p>32. Native vegetation should be conserved and its conservation value and function not compromised by development if the native vegetation does any of the following:.....</p>	<p>A key criterion for selecting the Project area is the land is currently used for agricultural land uses, including cropping, that reduces and minimises the amount of native vegetation that may need to be cleared or disturbed for the Project. The Project has been designed to minimise the interference or disturbance to existing native vegetation and biodiversity. The Development Plan recognises that a large renewable energy facility cannot be constructed in the Primary Production Zone without some disturbance to wildlife and vegetation.</p>

Assessment Section	Project Response
<p>33. Native vegetation should not be cleared if such clearing is likely to lead to, cause or exacerbate any of the following:....</p> <p>34. Development that proposes the clearance of native vegetation should address or consider the implications that removing the native vegetation will have on the following:...</p> <p>35. Where native vegetation is to be removed, it should be replaced in a suitable location on the site with locally indigenous vegetation to ensure that there is not a net loss of native vegetation and biodiversity.</p>	<p>An objective of the Project is to minimise impacts to the areas Biodiversity and native vegetation while maximising the generation capability of the Project.</p> <p>An assessment of ecological values on the Project area was undertaken to determine the presence of species of conservation significance (i.e. species protected under Commonwealth or State legislation) and to identify any potential impacts on biodiversity.</p> <p>The desktop ecological assessment is attached as Appendix 8 and preliminary field flora assessment in May 2018 of part of the Project area determined the dominant landform in the Project area is “undulating stony plain which has been extensively cleared for agriculture” (EBS, 2018). As such, the likelihood of suitable habitat for threatened flora species being present is assessed as very low.</p> <p>The preliminary field flora assessment in May 2018 of part of the Project area was performed in accordance with the Scattered Tree Assessment Method and Bushland Assessment Method derived by the Native Vegetation Council. The field fauna assessment included recording of opportunistic fauna sightings, signs of fauna (e.g. scats and burrows) and fauna habitat.</p> <p>Targeted searches were conducted for the following species:</p> <ul style="list-style-type: none"> • Southern Hairy-nosed Wombat (<i>Lasiorhinus latifrons</i>); • Pygmy Blue-tongue Lizard (<i>Tiliqua adelaidensis</i>); and. • Flinders Ranges Worm-Lizard (<i>Aprasia pseudopulchella</i>). <p>Based on preliminary design drawings a number of scattered native trees and clumps of trees are identified to be removed to assist with</p>

Assessment Section	Project Response
	<p>the construction and the Project's effective operation. The majority of scattered trees were considered high value due to their size, the presence of hollows and proximity to other native vegetation.</p> <p>The ecological assessment noted that none of the scattered trees were considered to provide suitable habitat for any threatened fauna species listed under the <i>Environment Protection and Biodiversity Conservation Act 1999</i> and <i>National Parks and Wildlife Act 1972</i>.</p> <p>Further, no species listed under <i>Environment Protection and Biodiversity Conservation Act 1999</i> and <i>National Parks and Wildlife Act 1972</i> were observed during the surveys.</p> <p>The removal of a number of scattered native trees or small clumps of trees will not lead to, cause or exacerbate, erosion or sediment within water catchments, decreased soil stability, soil or land slip, deterioration in the quality of water in a watercourse or surface water runoff, a local or regional salinity problem or the occurrence or intensity of local or regional flooding.</p> <p>The removal of native vegetation will require approval from the Native Vegetation Council.</p>
<p>Principles of Development Control – Soil Conservation:</p> <p>40. <i>Development should not have an adverse impact on the natural, physical, chemical or biological quality and characteristics of soil resources.</i></p> <p>41. <i>Development should be designed and sited to prevent erosion.</i></p>	<p>The Project will involve short-term construction, followed by possibly decades of the land being inactive. The limited or no cropping and consequently limited use of farm machinery on the Project area will be beneficial for the soils.</p>

Assessment Section	Project Response
<p>42. Development should take place in a manner that will minimise alteration to the existing landform.</p> <p>43. Development should minimise the loss of soil from a site through soil erosion or siltation during the construction phase of any development and following the commencement of an activity.</p>	<p>As previously discussed, erosion and sediment control measures will be implemented during the construction and operation phases to prevent erosion and loss of soil from the Project area.</p>
<p>Orderly and Sustainable Development (P60)</p> <p>Objectives:</p> <ol style="list-style-type: none"> 1. Orderly and economical development that creates a safe, convenient and pleasant environment in which to live. 2. Development occurring in an orderly sequence and in a compact form to enable the efficient provision of public services and facilities. 3. Development that does not jeopardise the continuance of adjoining authorised land uses. 4. Development that does not prejudice the achievement of the provisions of the Development Plan. 	<p>The Project area is an appropriate location because of the co-location with existing utility scale electricity infrastructure and the short distance required for the grid connection.</p> <p>The Project aligns with the Development Plan's Renewable Energy Facilities objective.</p> <p>The Project supports the existing electricity infrastructure and will not impede the operation of the established agricultural land uses in the area through any nuisance or harmful creating impact.</p>
<p>Principles of Development Control:</p> <ol style="list-style-type: none"> 1. Development should not prejudice the development of a zone for its intended purpose. 2. Land outside of townships and settlements should primarily be used for primary production and conservation purposes. 	<p>The Robertstown Solar Project (Project) is located within the Primary Production Zone as shown in Zone Map Go/1.</p> <p>The Project is a type of renewable energy facility envisaged within the zone and constitute a component of the zone's desired character subject to implementation of management techniques set out by general / council wide policy regarding renewable energy facilities.</p> <p>The Project area is an appropriate location because of the co-location with existing utility scale electricity infrastructure and the short</p>

Assessment Section	Project Response
<p>6. Development should be located and staged to achieve the economical provision of public services and infrastructure, and to maximise the use of existing services and infrastructure.</p> <p>7. Where development is expected to impact upon the existing infrastructure network (including the transport network), development should demonstrate how the undue effect will be addressed.</p>	<p>distance required for the grid connection (minimising the expanse of overhead power lines).</p> <p>The Project's construction traffic will impact the existing local transport network. A Traffic Management Plan will be developed with the DPTI, Safety and Services (Traffic Operations) and Regional Council of Goyder to minimise the impact during the construction phase.</p>
<p>Renewable Energy Facilities (P64)</p> <p>Objectives:</p> <ol style="list-style-type: none"> 1. Development of renewable energy facilities that benefit the environment, the community and the state. 2. The development of renewable energy facilities, such as wind farms and ancillary development, in areas that provide opportunity to harvest natural resources for the efficient generation of electricity. 3. Location, siting, design and operation of renewable energy facilities to avoid or minimise adverse impacts on the natural environment and other land uses. 	<p>The Project will complement and increase the generation of renewable energy within South Australia and the broader National Electricity Market, reduce greenhouse gases and decrease the use of water in the production of electricity.</p> <p>The Project area is an appropriate location because of the co-location with existing utility scale electricity infrastructure and the short distance required for the grid connection (minimising the expanse of overhead power lines).</p> <p>An objective of the Project is to minimise impacts on the natural environment and other land uses in the area while maximising the generation capability of the Project.</p>
<p>Principles of Development Control:</p> <ol style="list-style-type: none"> 1. Renewable energy facilities, including wind farms and ancillary development, should be: <ul style="list-style-type: none"> (a) located in areas that maximise efficient generation and supply of electricity; and 	<p>The identification of the Project area is the result of an extensive solar site identification assessment of possible locations across Australia. The following factors/criteria were used to select the Project area:</p> <ul style="list-style-type: none"> • Proximity to the Robertstown substation; • Access to the Robertstown substation and capacity of the substation to accept new generation;

Assessment Section	Project Response
<p><i>(b) designed and sited so as not to impact on the safety of water or air transport and the operation of ports, airfields and designated landing strips.</i></p>	<ul style="list-style-type: none"> • Agreements with landowners to host the Project; • Marginal loss factors and future forecasts; • Details on interstate connectors and relevant known transmission constraints; • Consideration of known projects proximate to the Project's area and potential for impact on capacity and connection; • Irradiation levels; • Environmental analysis of topography and environmental constraints; • Topography of the Project area providing suitable conditions for the construction and operation of a solar farm; • Site visits and initial field investigations; • Located close to the towns of Robertstown & Burra, but equally sufficient distance between the Project area and populated areas; • Suitable infrastructure surrounding the Project area e.g. road access for construction and operation of a solar Farm; and • Most of the Project area is disturbed through continuous agricultural land uses reducing the likelihood that the Project's development footprint will contain significant areas of native vegetation, Aboriginal cultural heritage items, or other environmental constraints.

Assessment Section	Project Response
<p>The Project area is not near water or air transport operations or Port operations, airfields or designated landing strips.</p>	<p>The Project is appropriately setback from non-associated (non-stakeholder) dwellings and tourist accommodation and areas defined and zoned township, settlement or urban areas (including deferred urban areas)</p> <p>Most of the Project area will be covered by solar panels mounted on single axis tracking modules and spacing. Depending on the type of single axis tracking modules the height of the bottom of the solar modules could be approximately 1.2m above ground level while the height of modules could be approximately 4m above ground level. The panels will be installed in parallel rows with the spacing being between approximately 4m to 10m depending on the type of single axis tracking module selected.</p> <p>The solar panels and single axis tracking modules will be uniform in colour, size, and shape. The solar arrays will be aligned north/south and track east/west. Viewing the solar arrays from Lower Bright Road and Powerline Road will be similar in geometric layout as to viewing rows of grape vines aligned north/south on the Project area.</p> <p>The buildings required for operations will be similar in size to buildings and structures typically found in a primary production area and will be constructed using materials and colours that blend with the rural landscape as much as possible.</p> <p>The buildings are grouped together and located adjacent to the Robertstown Substation and near existing transmission lines that aligns</p>
<p>Principles of Development Control - Wind Farms and Ancillary Development:</p> <p>2. <i>The visual impacts of wind farms and ancillary development (such as substations, maintenance sheds, access roads and wind monitoring masts) should be managed through:</i></p> <p>(a) <i>wind turbine generators being:</i></p> <p>(i) <i>setback at least 1000 metres from non-associated (nonstakeholder) dwellings and tourist accommodation</i></p> <p>(ii) <i>setback at least 2000 metres from defined and zoned township, settlement or urban areas (including deferred urban areas)</i></p> <p>(iii) <i>regularly spaced</i></p> <p>(iv) <i>uniform in colour, size and shape and blade rotation direction</i></p> <p>(v) <i>mounted on tubular towers (as opposed to lattice towers)</i></p> <p>(b) <i>provision of vegetated buffers around substations, maintenance sheds and other ancillary structures.</i></p> <p>3. <i>Wind farms and ancillary development should avoid or minimise the following impacts on nearby property owners / occupiers, road users and wildlife:</i></p>	

Assessment Section	Project Response
<p>(a) shadowing, flickering, reflection or glint</p> <p>(b) excessive noise</p> <p>(c) interference with television and radio signals and geographic positioning systems</p> <p>(d) interference with low altitude aircraft movements associated with agriculture</p> <p>(e) modification of vegetation, soils and habitats striking of birds and bats.</p> <p>4. Wind turbine generators should be setback from dwellings, tourist accommodation and frequently visited public places (such as viewing platforms) a distance that will ensure that failure does not present an unacceptable risk to safety.</p>	<p>with the current infrastructure visual amenity when viewed from this part of Lower Bright Road.</p> <p>Depending on the final design existing vegetation may sufficiently screen the buildings. If required targeted landscaping for the buildings can be incorporated into the final design drawings.</p> <p>The Project's solar panels can potentially cause a glint and/or glare impact beyond the Project area.</p> <p>A Glint and Glare 2018 Assessment is attached as Appendix 12. The key findings are:</p> <ul style="list-style-type: none"> • The assessment identified six potential residences where the residents of the houses may experience low-level glare when looking towards the PVS solar panels. Based on observations, existing obstacles (including existing vegetation, topography, and structures) between these six houses and the PVS panel arrays ameliorate low-level glare identified in the Glint and Glare report. • The assessment concluded Worlds End Highway does not experience glare issues. Sections of Lower Bright Rd, Powerline Rd and Junction Rd experience some Green Glare or low-level glare for a small duration (less than 10 minutes) during the early morning for a few months a year. Based on the roads experiencing very limited local traffic and observations of existing obstacles (including existing vegetation, topography and structures between the relevant sections of roads and the PVS panel arrays) the low-level glare identified in the Glint and Glare report are considered negligible.

Assessment Section	Project Response
	<p>The Project's construction phase will generate noise emissions. Noise emissions occur during site preparation, the installation of the Project's infrastructure including the panel system and from the construction vehicles and machinery.</p> <p>Adopting standard environmental management controls, shutting down equipment when not in use and use of noise reduction devices will minimise the construction noise impacts at sensitive receivers which are expected to be negligible.</p> <p>Operating the Project will generate nominal noise emissions. Consequently, noise impacts to sensitive receivers are not anticipated during the Project's operation phase.</p> <p>The Project will not interfere with television and radio signals and geographic positioning systems or with low altitude aircraft movements associated with agriculture.</p> <p>The Project is not located near dwellings, tourist accommodation and frequently visited public places (such as viewing platforms) and is sited not to be an unacceptable risk to the public.</p>
Short-term Workers Accommodation (P72)	<p>Objectives:</p> <p>1. <i>A range of appropriately located accommodation types supplied to meet the housing needs of seasonal and short-term workers.</i></p>
	<p>Principles of Development Control:</p> <p>1. <i>Accommodation intended to be occupied on a temporary basis by persons engaged in employment relating to the production or processing of primary produce including minerals should be located</i></p>

Assessment Section		Project Response
	<p><i>within existing townships or within primary production areas, where it directly supports and is ancillary to legitimate primary production activities or related industries.</i></p> <p>2. <i>Buildings used for short-term workers accommodation should:</i></p> <ul style="list-style-type: none"> <i>(a) be designed and constructed to enhance their appearance</i> <i>(b) provide for the addition of a carport, verandas or pergolas as an integral part of the building</i> <i>(c) where located outside of townships, not jeopardise the continuation of primary production on adjoining land or elsewhere in the zone</i> <i>(d) be supplied with service infrastructure such as power, water, and effluent disposal sufficient to satisfy the living requirements of workers.</i> <p>3. <i>Short-term workers accommodation should not be adapted or used for permanent occupancy.</i></p> <p>4. <i>A common amenities building should be provided for temporary forms of short-term accommodation such as caravan and camping sites.</i></p>	<p>The construction workers camp would be designed to accommodate up to an estimated 275 equivalent full-time workers during construction. Approximately 3ha – 5ha is required for the construction workers camp. An example of a typical construction workers camp layout is attached to the Planning Report as Appendix 4.</p> <p>Adequate arrangements will need to be made for the provision of essential services to the construction workers camp including, the supply of water, the supply of electricity, the disposal and management of sewage/waste water, stormwater drainage and general waste management.</p> <p>The final design, specification and layout of the temporary construction workers camp, including essential services, within the Project area will be submitted to the relevant authority for approval prior to the commencement of construction.</p>
Siting and Visibility (P73)	<p>Objective:</p> <p>1. <i>Protection of scenically attractive areas, particularly natural, rural and coastal landscapes.</i></p>	<p>The Project area is not an identified and listed scenically attractive area.</p>

Assessment Section	Project Response
<p>Principles of Development Control:</p> <ol style="list-style-type: none"> 1. <i>Development should be sited and designed to minimise its visual impact on:</i> <ol style="list-style-type: none"> (a) <i>the natural, rural or heritage character of the area</i> (b) <i>areas of high visual or scenic value, particularly rural areas</i> (c) <i>views from public reserves, tourist routes and walking trails.</i> 2. <i>Buildings should be sited in unobtrusive locations and, in particular, should:</i> <ol style="list-style-type: none"> (a) <i>be grouped together</i> (b) <i>where possible be sited in such a way as to be screened by existing vegetation when viewed from public roads.</i> 	<p>The Project is a type of renewable energy facility the Development Plan contemplates the presence of in the Council area and in the Primary Production Zone. The Development Plan acknowledges it is difficult to mitigate visual impacts of large-scale renewable energy facilities. The Project has been designed to minimise the visual impacts of the infrastructure while maximising the generation of renewable energy from this Project.</p> <p>The Project is not located in an area of known visual or scenic significance.</p> <p>The Project's rural landscape scenic quality is categorised as low to moderate at most and it is not visible to a significant portion of the region's public.</p> <p>The buildings required for construction and operation phases are grouped together and located adjacent to the Robertstown Substation and near existing transmission lines that aligns with the current infrastructure visual amenity when viewed from this part of Lower Bright Road.</p> <p>The Project area's and surrounding topography will limit direct line of sight to the whole Project. Existing vegetation will provide partial screening when viewed from various sections of the public roads.</p>
<ol style="list-style-type: none"> 3. <i>Buildings outside of urban areas and in undulating landscapes should be sited in unobtrusive locations and in particular should be:</i> <ol style="list-style-type: none"> (a) <i>sited below the ridgeline</i> (b) <i>sited within valleys or behind spurs</i> 	<p>The Project is located on undulating terrain with scattered vegetation which will assist with limiting and interrupting views of the whole Project from public roads.</p>

Assessment Section	Project Response
<p><i>(c) sited in such a way as to not be visible against the skyline when viewed from public roads</i></p> <p><i>(d) set well back from public roads, particularly when the allotment is on the high side of the road.</i></p> <p><i>4. Buildings and structures should be designed to minimise their visual impact in the landscape.....</i></p> <p><i>5. The nature of external surface materials of buildings should not detract from the visual character and amenity of the landscape.</i></p> <p><i>6. The number of buildings and structures on land outside of urban areas should be limited to that necessary for the efficient management of the land.</i></p> <p><i>7. Driveways and access tracks should be designed and constructed to blend sympathetically with the landscape and to minimise interference with natural vegetation and landforms, and be surfaced with dark materials.</i></p> <p><i>8. Development should be screened through the establishment of landscaping using locally indigenous plant species:</i></p> <p><i>(a) around buildings and earthworks to provide a visual screen as well as shade in summer, and protection from prevailing winds</i></p> <p><i>(b) along allotment boundaries to provide permanent screening of buildings and structures when viewed from adjoining properties and public roads</i></p>	<p>The Project will be set back from public roads.</p> <p>The buildings required for operations are similar in size to buildings typically found in a primary production area e.g. intensive animal keeping infrastructure, shearing sheds, machinery sheds and grain facilities such as silos.</p> <p>The buildings will be constructed using materials and colours that blend with the rural landscape as much as possible.</p> <p>Only the required number of structures to efficiently manage the solar farm will be located on the Project's land. No residential buildings are part of the development.</p> <p>Access tracks required for the Project will be designed and constructed to blend sympathetically with the landscape and to minimise interference with natural vegetation and landforms where possible.</p> <p>Given the scale and extent of the proposed development and the low level of visual impact, providing landscaping which is adequate to screen the entire Project area is not considered practical. Targeted landscaping may be established to support erosion control and for visual amenity adjacent to car parking areas and control room/site office, battery energy storage areas and the Project's substation.</p>

Assessment Section		Project Response
	<i>(c) along the verges of new roads and access tracks to provide screening and minimise erosion.</i>	
Sloping Land (P75)	<p>Objectives:</p> <p>1. <i>Development on sloping land designed to minimise environmental and visual impacts and protect soil stability and water quality</i></p> <p>Principles of Development Control:</p> <p>1. <i>Development and associated driveways and access tracks should be sited and designed to integrate with the natural topography of the land and minimise the need for earthworks.</i></p> <p>7. <i>The excavation and/or filling of land outside townships and urban areas should:</i></p> <p><i>(a) be kept to a minimum and be limited to a maximum depth or height no greater than 1.5 metres so as to preserve the natural form of the land and the native vegetation</i></p> <p><i>(b) only be undertaken in order to reduce the visual impact of buildings, including structures, or in order to construct water storage facilities for use on the allotment</i></p> <p><i>(c) only be undertaken if the resultant slope can be stabilised to prevent erosion</i></p> <p><i>(d) result in stable scree slopes which are covered with top soil and landscaped so as to preserve and enhance the natural character or assist in the re-establishment of the natural character of the area.</i></p>	<p>The Project's final layout will be designed to minimise environmental and visual impacts and protect soil stability and water quality.</p> <p>The Project's indicative layout attached as Appendix 3 to the Planning Report is designed and sited to minimise impacts and maximise the generation capability.</p> <p>The Project is on undulating terrain which will influence the type of Solar array technology and the extent of earthworks. The civil design will be carried out based on the philosophy of the minimal amount of ground disturbance required for the selected solar array technology.</p> <p>The Project will implement a CEMP for the construction phase to manage potential adverse impacts. The CEMP will include specific management measures or plans a number of aspects including erosion and stormwater management.</p>

Assessment Section	Project Response
<p>Transportation and Access (P83)</p> <p>Objectives:</p> <p>2. Development that:</p> <ul style="list-style-type: none"> <i>(a) provides safe and efficient movement for all motorised and non-motorised transport modes</i> <i>(b) ensures access for vehicles including emergency services, public infrastructure maintenance and commercial vehicles</i> <i>(c) provides off street parking</i> <i>(d) is appropriately located so that it supports and makes best use of existing transport facilities and networks.</i> <p>5. Safe and convenient freight movement throughout the State.</p>	<p>The Project's movement will be primarily motorised that will utilise the existing State and local transport facilities and networks to safely convey material and personnel to and from the Project area during the life of the Project.</p>
<p>Principles of Development Control - Movement Systems:</p> <p>2. Development should be integrated with existing transport networks, particularly major rail and road corridors as shown on Overlay Maps Go/1, Go/2, Go/3, Go/4, Go/6, Go/7, Go/8, Go/9, Go/10 and Go/11 - Transport, and designed to minimise its potential impact on the functional performance of the transport networks.</p> <p>6. Development generating high levels of traffic, such as schools, shopping centres and areas, entertainment and sporting facilities, should incorporate passenger pick-up and set down areas. The design of such areas should ensure interference to existing traffic is minimised and give priority to pedestrians, cyclists and public and community transport users.</p>	<p>While the component delivery route will be finalised as part of the Traffic Management Plan preliminary analysis indicates the feasible trucking option is components are shipped to Flinders Port Adelaide and trucked direct to the Project area via National Highway A9 (Port River Expressway, Salisbury Highway) and National Highway A1, National Highway M20, Thiele Highway (B81), Worlds End Highway, Powerline Road and Lower Bright Road.</p> <p>Anticipated traffic volumes will be highest during the Project's construction while operational traffic volumes are expected to be minimal.</p> <p>A Transport Impact Assessment (TIA) attached to the Planning Report as Appendix 10 assessed the potential impact of the Project's construction traffic movements on transport routes and other road users and assessed the potential impact of the Project's operational</p>

Assessment Section	Project Response
<p>13. Development should make sufficient provision on site for the loading, unloading and turning of all traffic likely to be generated.</p>	<p>traffic movements on transport routes and other road users based on the Project being completely operational. The assessment reaches several conclusions including the traffic generated by the Project during the construction and operational phases is very low in comparison to existing traffic volumes on the State controlled roads and therefore is not expected to compromise the safety or function of the surrounding State road network and the traffic generated by the proposed Project area during the construction and operational phases is not expected to compromise the safety or function of the local roads that experience low volumes of traffic.</p> <p>A Traffic Management Plan will be developed with the DPTI, Safety and Services (Traffic Operations) and Regional Council of Goyder to minimise the impact.</p> <p>Section 7.12 of the Planning Report contains further detail on the Project's traffic and transport.</p>
<p>Principles of Development Control – Access:</p> <p>21. Development should have direct access from an all weather public road.</p> <p>22. Development should be provided with safe and convenient access which:.....</p> <p>24. The number of vehicle access points onto arterial roads shown on Overlay Maps Go/1, Go/2, Go/3, Go/4, Go/6, Go/7, Go/8, Go/9, Go/10 and Go/11 - Transport should be minimised,</p>	<p>The Project will not require vehicle access points onto arterial roads shown on the Development Plan overlay maps.</p> <p>The Project area will be accessed from Lower Bright Road and Powerline Road. Both local roads are all weather graded public roads.</p> <p>Data is limited for Powerline Rd and Lower Bright Rd but it is reasonable to assume that they have relatively minor vehicle flows, except during harvest.</p> <p>During the construction phase access will likely be via existing access points and additional access points to allow for the efficient transport</p>

Assessment Section		Project Response
	<p>26. Development with access from arterial roads or roads as shown on Overlay Maps Go/1, Go/2, Go/3, Go/4, Go/6, Go/7, Go/8, Go/9, Go/10 and Go/11 - Transport should be sited to avoid the need for vehicles to reverse on to the road.</p> <p>27. Driveways, access tracks and parking areas should be designed and constructed to:</p> <p>(a) follow the natural contours of the land</p> <p>(b) minimise excavation and/or fill</p> <p>(c) minimise the potential for erosion from run-off</p> <p>(d) avoid the removal of existing vegetation</p> <p>(e) be consistent with Australian Standard AS 2890 Parking facilities.</p>	<p>of components onto and around the Project area. During the operation phase the use of certain access points will likely be reduced.</p> <p>The internal access roads will be sufficient to allow for safe on-site vehicle manoeuvring including large vehicle deliveries.</p> <p>Driveways, access tracks and parking areas will be designed and constructed to minimise excavation and/or fill, minimise the potential for erosion from run-off, minimise the removal of existing vegetation and be consistent with relevant standards where practicable.</p> <p>An indicative internal access road layout is provided at Appendix 3 to the Planning Report.</p>
	<p>Principles of Development Control - Vehicle Parking:</p> <p>29. Development should provide off-street vehicle parking and specifically marked disabled car parking places to meet anticipated demand.</p>	<p>The Project will provide parking on-site in accordance with relevant standards.</p>
<p>Waste (P87)</p>	<p>Objectives:</p> <p>1. Development that, in order of priority, avoids the production of waste, minimises the production of waste, reuses waste, recycles waste for reuse, treats waste and disposes of waste in an environmentally-sound manner.</p>	<p>An objective of the Project is to avoid the production of waste, minimise the production of waste, reuse waste, recycle waste for reuse, treat waste and disposes of waste in an environmentally-sound manner when required.</p> <p>Waste management procedures will be implemented for the construction phase and operation phase with the intention of</p>

Assessment Section	Project Response
<p>2. Development that includes the treatment and management of solid and liquid waste to prevent undesired impacts on the environment including, soil, plant and animal biodiversity, human health and the amenity of the locality.</p>	<p>preventing undesired impacts on the environment including, soil, plant and animal biodiversity, human health and the amenity of the locality.</p>
<p>Principals of Development Control:</p> <p>1. Development should be sited and designed to prevent or minimise the generation of waste (including wastewater) by applying the following waste management hierarchy in the order of priority as shown below:</p> <ul style="list-style-type: none"> (a) avoiding the production of waste (b) minimising waste production (c) reusing waste (d) recycling waste (e) recovering part of the waste for re-use (f) treating waste to reduce the potentially degrading impacts (g) disposing of waste in an environmentally sound manner. 	<p>The Project is not expected to generate a significant amount of waste during the construction or operation phases.</p> <p>Construction waste management procedures will be implemented via a CEMP.</p> <p>Operational waste management procedures will be implemented via an OEMP.</p> <p>Any waste to be disposed of will be disposed in accordance with relevant standards.</p>
<p>Principals of Development Control – Wastewater:</p> <p>3. The disposal of wastewater to land should only occur where methods of wastewater reduction and reuse are unable to remove the need for its disposal, and where its application to the land is environmentally sustainable.</p> <p>4. Wastewater storage lagoons...</p>	<p>During the construction phase and operation phase wastewater will likely be captured and removed from the Project area using a licensed wastewater contractor. A sewerage treatment plant will likely be designed and constructed to accommodate the estimated construction and operational staff and contractors. The exact method for dealing with wastewater will be determined during the Project's final design.</p>

Assessment Section	Project Response
	<p>Construction wastewater management procedures will be implemented via a CEMP.</p> <p>Operational wastewater management procedures will be implemented via an OEMP.</p> <p>The Project does not involve a wastewater storage lagoon.</p>
<p>Principals of Development Control - Waste Treatment Systems:</p> <p>12. Development that produces any effluent should be connected to an approved waste treatment system which may include sewage, community wastewater management systems, or on-site wastewater treatment and disposal methods.</p> <p>13. The methods for, and siting of, effluent and waste storage, treatment and disposal systems should minimise the potential for environmental harm and adverse impacts on:</p> <p>(a) the quality of surface and groundwater resources</p> <p>(b) public health</p> <p>(c) the amenity of a locality</p> <p>(d) sensitive land uses.</p> <p>14. Waste treatment should only occur where the capacity of the treatment facility is sufficient to accommodate likely maximum daily demands including a contingency for unexpected high flows and breakdowns.</p>	<p>During the construction phase and operation phase wastewater will likely be captured and removed from the Project area using a licensed wastewater contractor. A sewerage treatment plant will likely be designed and constructed to accommodate the estimated construction and operational staff and contractors. The exact method for dealing with wastewater will be determined during the Project's final design.</p> <p>The wastewater treatment and disposal will be conducted in accordance with relevant standards.</p> <p>The exact method of for dealing with wastewater will be determined during the Project's final design. The methods for, and siting of, effluent and waste storage, treatment and disposal systems will minimise the potential for environmental harm and adverse impacts on the quality of surface and groundwater resources, public health, the amenity of a locality and sensitive land uses.</p>

Assessment Section	Project Response
<p>15. Any domestic waste treatment system or effluent drainage field should be located within the allotment of the development that it will service.</p> <p>16. A dedicated on-site effluent disposal area should not include any areas to be used for, or could be reasonably foreseen to be used for, private outdoor open space, driveways, car parking or outbuildings.</p>	

APPENDIX 6

Community and Stakeholder Engagement Report