

APPLICATION ON NOTIFICATION – CROWN DEVELOPMENT

Type of development:	SECTION 49 - STATE AGENCY DEVELOPMENT
Development Number:	571/V004/16 V2
Applicant:	Vena Energy Services (Australia) Pty Ltd
Nature of Development:	Expansion of the Coorong Solar Substation – new substation bay, switchgear, control building, associated infrastructure.
Subject Land:	Substation Road, Tailem Bend
Development Plan:	Coorong District Council Development Plan consolidated 29 November 2018
Zone / Policy Area:	Urban Employment Zone
Contact Officer:	Laura Kerber
Phone Number:	7109 7073
Consultation Start Date:	27 February 2020
Consultation Close Date:	30 March 2020

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 St, 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).

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

<u>Street Address:</u> Development Division Department of Planning, Transport and Infrastructure Level 5, 50 Flinders Street ADELAIDE

Email Address: scapreps@sa.gov.au

		DEVELOP	MENT ACT, 1993 - S49/S49A – CROWN DEVELOPMENT REPRESENTATION ON APPLICATION				
Applicant	:		Vena Energy Services (Australia) Pty Ltd				
Developm	nent N	umber:	571/V004/16 V2				
Nature of Development: Zone / Policy Area:			Expansion of the Coorong Solar Substation – new substation bay, switchgear, control building, associated infrastructure				
			Urban Employment Zone				
Subject La	nd:		Substation Road, Tailem Bend				
Contact Officer: Phone Number:			Laura Kerber				
			7109 7073				
Close Date	e:		30 March 2020				
My Name:			My phone number:				
Primary me	ethod(s	s) of contact:	Email:				
			Postal Address: Postcode:				
<u>ou may be c</u> e beard by t	ontact	<u>ed via your no</u> te Commissio	ominated PRIMARY METHOD(s) OF CONTACT if you indicate below that you wish to n Assessment Panel, in support of your submission				
			Assessment runer in support of your susmission				
My interest	ts are:		owner of local property				
(please tick o	one)		occupier of local property				
			a representative of a company (other organisation affected by the proposal				
			a private citizen				
he address c	of the p	property affect	ted is:				
			Postcode				
My interest	ts are: one)		I support the development				
	·		I support the development with some concerns				
			I oppose the development				
 		- f ala P					
ne specific a	spects	of the applica					
l:		wish to be h	eard in support of my submission				
(please tick one)		do not wish (Please tick or	to be heard in support of my submission ne)				
Ву:		appearing pe	ersonally				
		being repres	ented by the following person				
(please tick one)		(Please tick or	ne)				
(please tick one) Signature:		(Please tick or	ne)				

SECTION 49 & 49A – CROWN DEVELOPMENT DEVELOPMENT APPLICATION FORM

PLEASE USI	E BLOCK LETTERS	FOR OFFICE U	JSE			
COUNCIL: APPLICANT: ADDRESS: CROWN AGI	COORONG DISTRICT COUNCIL VENA ENERGY SERVICES (AUSTRALIA) PTY LTD 261 LIME KILN ROAD, TAILEM BEND ENCY: MAJOR DEVELOPMENT & CROWN	DEVELOPMEN PREVIOUS DE DATE RECEIV	NT No: EVELOPMENT ED:	No:	/	
CONTACT PERSON FOR FURTHER INFORMATION Name: DUNCAN MORTIMER KORI LAW Telephone: DM: 0417 997 099 [work] KL: 0459 450 472 [Ah] Fax: [work] [Ah] DM: DUNCAN.MORTIMER@VENAENERGY.COM Email: KL: KORI.LAW@VENAENERGY.COM NOTE TO APPLICANTS:		 Complying Merit Public Notifi Referrals 	cation	Decision: Type: Finalised:	/	/
(1) All sectio the developm nature of the development of additional outlined in Ite <i>Regulations</i> will be subject (2) Three con	ns of this form must be completed. The site of nent must be accurately identified and the proposal adequately described. If the expected cost of this Section 49 or Section 49A xceeds \$100,000 (excl. fit-out) or the involves the division of land (with the creation allotments) it will be subject to those fees as em 1 of Schedule 6 of the <i>Development</i> 2008. Proposals over \$4 million (excl. fit-out) ct to public notification and advertising fees. bies of the application should also be provided.	Planning: Land Division: Additional: Minister's Approval	Decision required	Fees	Receipt No	Date

EXISTING USE: COORONG SOLAR SUBSTATION (571/V004/16V1)

DESCRIPTION OF PROPOSED DEVELOPMENT: REQUEST FOR VARIATION TO DEVELOPMENT 571/V004/16V1,

COORONG SOLAR SUBSTATION.

LOCATION OF PROPOSED DEVELOPMENT: 51 DP 110785					
House No:	Lot No:	Street:	Town/Suburb: TAILEM BE	<u>ND</u>	
Section No [full/part]		Hundred: <u>SEYMOUR</u>	Volume: <u>6230</u>	Folio: <u>669</u>	
Section No [full/part]		Hundred:	Volume:	Folio:	
LAND DIVISION:					
Site Area [m ²]		Reserve Area [m ²]	No of existing allotments		
Number of additional allotments [excluding road and reserve]:		Lease: YE	s 🗖 no 🗖		
DEVELOPMENT COST [do not include any fit-out costs]: \$					

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 <u>unless</u> 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 (<u>www.dac.sa.gov.au</u>).

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

SIGNATURE:

DEVELOPMENT REGULATIONS 1993 Form of Declaration (Schedule 5 clause 2A)

To: Department of Planning, Transport & Infrastructure Major Development & Crown

From: Vena Energy Services (Australia) Pty Ltd

Date of Application: $\underline{04} / \underline{04} / \underline{2020}$

Location of Proposed Development: .261 LIME KILN ROAD, TAILEM BEND

Section No (full/part):Hundred:

Volume: <u>6230</u> Folio: <u>669</u>

Nature of Proposed Development:

I <u>Duncan Mortimer</u> being the applicant/ a person acting on behalf of the applicant (delete the inapplicable statement) for the development described above declare that the proposed development will involve the construction of a building which would, if constructed in accordance with the plans submitted, not be contrary to the regulations prescribed for the purposes of section 86 of the *Electricity Act 1996*. I make this declaration under clause 2A(1) of Schedule 5 of the *Development Regulations 1993*.

Date: <u>04</u> / <u>02</u> / <u>2020</u>

Signed:

Note 1

This declaration is only relevant to those development applications seeking authorisation for a form of development that involves the construction of a building (there is a definition of 'building' contained in section 4(1) of the *Development Act* 1993), other than where the development is limited to –

- a) an internal alteration of a building; or
- b) an alteration to the walls of a building but not so as to alter the shape of the building.

Note 2

The requirements of section 86 of the *Electricity Act 1996* do not apply in relation to:

- a) a fence that is less than 2.0 m in height; or
- b) a service line installed specifically to supply electricity to the building or structure by the operator of the transmission or distribution network from which the electricity is being supplied.

Note 3

Section 86 of the *Electricity Act 1996* refers to the erection of buildings in proximity to powerlines. The regulations under this Act prescribe minimum safe clearance distances that must be complied with.

Note 4

The majority of applications will not have any powerline issues, as normal residential setbacks often cause the building to comply with the prescribed powerline clearance distances. Buildings/renovations located far away from powerlines, for example towards the back of properties, will usually also comply.

Particular care needs to be taken where high voltage powerlines exist; where the development:

- is on a major road;
- commercial/industrial in nature; or
- built to the property boundary.

Note 5

Information brochures 'Powerline Clearance Declaration Guide' and 'Building Safely Near Powerlines' have been prepared by the Technical Regulator to assist applicants and other interested persons. Copies of these brochures are available from council and the Office of the Technical Regulator. The brochures and other relevant information can also be found at www.technicalregulator.sa.gov.au

Note 6

In cases where applicants have obtained a written approval from the Technical Regulator to build the development specified above in its current form within the prescribed clearance distances, the applicant is able to sign the form.

PLN/06/0024





PREPARED FOR		
MINISTER FOR PL	ANNING	
DEPARTMENT C	OF PLANNING, TRANSPORT AND	
Development Number	571/V004/16 V1	
Site	261 Lime Kiln Road, Tailem Bend (A5 FP 108964)	
Date	February 2020	
	PREPARED FOR MINISTER FOR PL DEPARTMENT Development Number Site Date	PREPARED FOR MINISTER FOR PLANNING DEPARTMENT OF PLANNING, TRANSPORT AND INFRASTRUCTURE Development Number 571/V004/16 V1 Site 261 Lime Kiln Road, Tailem Bend (A5 FP 108964) Date February 2020



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1.0 Introduction

This report has been prepared by Vena Energy Services (Australia) Pty Ltd (Vena Energy Australia (VEA)) in support of a variation to Crown Development (Number: 571/V004/16 V1). The variation seeks to amend the '*As Built layout*' drawing of the Coorong Solar Substation, built in accordance with the development consent issued over land located at 261 Lime Kiln Road, Tailem Bend and formally described as Volume 6230 Folio 669.

Coorong Solar Substation is located 2km south-east of the township of Tailem Bend and 90km from the CBD of Adelaide. The site is located on the southern side of Substation Road within the Coorong District Council Local Government Area, with access directly to Substation Road. The site area is established on a single allotment with an area of approximately 282.3ha and 2.3km frontage to Substation Road (Figure 1) and 3km to Lime Kiln Road.



Figure 1: Location of the TBSP within the Local Government Area of Coorong District Council.

Surrounding the site is Lime Kiln Road to the south and west, private properties to the east and the Motorsport Park located approximately 1.7km to south, is now operational. The land use activities within the immediate area relate predominantly to agriculture with scattered rural dwellings evident within the vicinity of the Coorong Solar Substation (CSS), with the TB2SP to be developed to the immediate north of the subject site. There are considerable expanses of electrical infrastructure in immediate proximity to the site as well as high voltage 275kV lines and towers dissecting the subject site;



existing SA Power Networks and ElectraNet substations are located within immediate proximity to the Coorong Solar Substation, as the subject allotment engulfs the infrastructure on Substation Road.

This application to vary the 'As Built layout' drawing of the Coorong Solar Substation, is to allow for the effective connection of the Tailem Bend Solar Project Stage Two via the necessary upgrades to the Coorong Solar Substation. The intent of the variation is to allow for the addition of a new substation bay in order to abide by regulatory requirements and an allowance for a potential harmonic filter or reactive plant to accommodate the connection of the TB2SP to the NEM.

Therefore, this variation to amend the 'As Built layout' drawing of the Coorong Solar Substation is respectfully requested of Minister for Planning and the Department of Planning, Transport and Infrastructure.



2.0 Summary

PROPOSAL SUMMAR	Y
Address	261 Lime Kiln Road, Tailem Bend
Real Property	Allotment 51 Deposited Plan 110785 in the Hundred of Seymour
Description	
Certificate of Title	Volume 6230 Folio 669
Site Area	282.3ha
Frontage	2.3km to Substation Road and 3km to Lime Kiln Road.
Owners	Vena Energy will lease the subject land for the CSS under a long-term lease arrangement (30-
	years and 20-year extension), as part of the lease for the TB2SP.
Proposal	Variation of Crown Development Approval – Development Number: 571/V004/16 V1:
	• Vary the 'As Built layout' drawing of the Coorong Solar Substation;
	Addition of a new substation bay to meet regulatory requirements;
	• Allowance for a potential harmonic filter and/or reactive plant.
Development Plan	Coorong District Council Development Plan 2018
Zone	Urban Employment
Referral Agencies	To be confirmed by the Department of Planning, Transport and Infrastructure.
Attachments	Proposed Indicative Layout & Preliminary Design Drawings – Attachment 1;
	• Coorong Solar Substation 'As Built Drawing' – Attachment 2.



3.0 Proposal

3.1 Variation Components

Pursuant to the *Development Act 1993*, the following changes to the approved development and the corresponding 'As *Built Layout Drawing*' (Attachment 2) are necessary:

- Network Connection Works addition of a new substation bay to meet regulatory requirements; and
- Network Connection Works allowance for a potential harmonic filter and/or reactive plant.

3.2 Detailed Project Variation Components

A few minor amendments have been proposed as part of this CSS variation request; which are evident in the Indicative Layout and Preliminary Design Drawing (Attachment 1) as well as the detailed description provided below, regarding the need for the variation to the CSS 'As Built Layout Drawing'.

3.2.1 Network Connection Works

Overarchingly, the variation will allow the Tailem Bend Solar Project Stage Two (TB2SP) to connect to the National Electricity Market via the Coorong Solar Substation (as the 'facility' substation for the TB2SP and historically the Tailem Bend Solar Project (TBSP)).

In order to facilitate this connection to the NEM, for both the solar and BESS project for TB2SP, a new substation bay is required to be added to the existing Coorong Solar Substation. This additional bay is required to meet regulatory requirements, for the following reasons:

- Despite VEA sizing the existing substation (Coorong Solar Substation) to take the additional generation of the TB2SP, VEA are required to have separate connection points to meet the current AEMO regulatory requirements; and
- This requirement removes VEA's ability to make use of the existing transformers and switchgear (constructed as part of the Coorong Solar Substation for TBSP).

The new substation bay will be located directly to the north of the Coorong Solar Substation. This additional bay will include transformer, switch gear, harmonic filter / reactive plant, switchgear and control building; positioned within the existing substation area established for the TBSP on the Substation Road frontage, approximately 20m (substation area fencing) from the property boundary. The expansion of the substation infrastructure (substation bay) will require the relocation of the existing vegetation screening to Substation Road, established as part of the development of the Coorong Solar Substation.

The electrical connection works for the TB2SP will also include potential electrical equipment such as a harmonic filter, static var compensator or STATCOM, or other electrical equipment to provide grid stability services to the power network. The space required for these items is shown by a rectangular area marked on the drawing labelled "harmonic filter /



reactive plant". The requirement for these items is currently being investigated with ElectraNet and the Australian Electricity Market Operator (AEMO) as part of the connection studies for the project.

The requirement for a new harmonic filter/reactive plant will be determined by the outcome of the detailed Generator Performance Standards (GPS) modelling, and as part of the connection studies mentioned above, which is currently being undertaken and is scheduled for completion at the end of Q3 2020. There are case studies of harmonic filters being required for other project, for example Bannerton, Victoria; the purpose of the filter is to dampen electrical harmonics created by the solar farm and battery inverters to below certain levels allocated by ElectraNet. The Proposed Indicative Layout and Preliminary Design Drawings have allowed an indicative space of 20m by 18m for the installation of a harmonic filter / reactive plant, should it be determined that one is required at the completion of the GPS modelling, connection studies and further discussions with ElectraNet & AEMO. Due to the uncertainty on how the proposed plant will interact with the network, VEA are applying for the inclusion of a harmonic filter / reactive plant (static var compensator or STATCOM) via this variation and will be in a position to confirm the requirement and need for installation at the time of commissioning.

The closest piece of electrical infrastructure to Substation Road will be the proposed harmonic filter/reactive plant, located approximately 24m from the site boundary adjoining Substation Road. The switchgear/control building will be situated approximately 29m, with the transformer setback approximately 44m from the site boundary. Despite the requirement for an additional substation bay, the Coorong Solar Substation will be approximately 1/5th of the size of the existing ElectraNet Substation, located ~240m to the east of Coorong Solar Substation.



4.0 Summary & Conclusions

This report has been prepared by Vena Energy Services (Australia) Pty Ltd (Vena Energy Australia (VEA)) in support of a variation to Crown Development (Number: 571/V004/16 V1). The variation seeks to amend the '*As Built layout*' drawing of the Coorong Solar Substation, built in accordance with the development consent issued over land located at 261 Lime Kiln Road, Tailem Bend and formally described as Volume 62305 Folio 669.

Tailem Bend Solar Project Stage One is located 2km south-east of the township of Tailem Bend and 90km from the CBD of Adelaide. The site is located on the southern side of Substation Road within the Coorong District Council Local Government Area, with access directly to Substation Road. The site area is established on a single allotment with an area of approximately 282.3ha and 2.3km frontage to Substation Road (Figure 1) and 3km to Lime Kiln Road.

This application for a variation has been made, to amend the '*As Built layout*' drawing of the Coorong Solar Substation to allow for the effective connection of the Tailem Bend Solar Project Stage Two via the necessary upgrades to the Coorong Solar Substation. The intent of the variation is to allow for the addition of a new substation bay in order to abide by regulatory requirements and an allowance for a potential harmonic filter or reactive plant to accommodate the connection of the TB2SP to the NEM.

VEA submits this variation with the understanding that the general concept and proposal of the Coorong Solar Substation hasn't altered the intent of the overarching development, but rather allows for additional support to surrounding renewable developments, namely TB2SP and it's future solar and BESS components; simply providing for a strategic allowances of existing construction infrastructure for the construction program of TB2SP; for these reasons VEA anticipate that the project will be supported, subject to a number of reasonable and relevant conditions pertaining to the detailed design of the development.

ATTACHMENT 1

PROPOSED INDICATIVE LAYOUT & PRELIMINARY DESIGN DRAWING





NOTES:

- 1. FLEXIBLE CONDUCTOR PROFILES INDICATIVE ONLY. PROFILE SHALL PERMIT FLEXING DUE TO SEISMIC MOVEMENT AND TEMPERATURE VARIATION.
- 2. ELECTRICAL CLEARANCES SHALL BE MAINTAINED AS SPECIFIED IN ELECTRICAL CLEARANCES TABLE.
- 3. TERMINALS SHALL BE TO AS 62271.301.
- 4. ALUMINIUM WELDING SHALL BE TO RELEVANT AUSTRALIAN
- STANDARDS.
- 5. 6.
- BOLTED JOINTS SHALL BE TO AS 62271.301. 33kV CABLE SEALING END BUSBAR CABLE CONNECTION TERMINAL PALM SETOUT DIMENSION IS TO CENTRE OF TERMINAL PALM.

ELECTRICAL CLEARANCES (NOTE 2)				
NOMINAL VOLTAGE (PHASE-PHASE)	132kV	33kV		
RATED VOLTAGE	145kV	36kV		
MINIMUM CLEARANCE BETWEEN LIVE PARTS AND EARTHED PARTS (PHASE-EARTH CLEARANCE)	1300mm	320mm		
MINIMUM CLEARANCE BETWEEN LIVE PARTS OF DIFFERENT PHASES (PHASE-PHASE CLEARANCE)	1495mm	370mm		
MINIMUM CLEARANCE BETWEEN LIVE PARTS AND GROUND LEVEL OR ACCESS WAYS (SECTION SAFETY CLEARANCE)	3870mm	2790mm		







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PROJECT N	AUSTRĂLIA	PROJECT: COORONG SOLAR SUBSTATION FXPANSION	PRELIMINARY PROJECTLOCATION: 35 2678° S + 130 4923°8°	REV
PI	RELIMINARY DESIGN - H	ARMONIC FILTER ELEVATION SECTION VIEW	02	



ATTACHMENT 2

COORONG SOLAR SUBSTATION AS BUILT LAYOUT



10	11	12

<u>LEGEND</u>

✤ : DENOTES SET OUT POINT FOR THE STRUCTURE

SETOUT POINTS TABLE				
SETOUT No. EASTING NORTHING				
1	362536.885	6095917.077		

M.FONSEKA				UGL		
N.HOSSEINI		TAILEN	ΛВΕ	END SOLAR PROJECT		
D.VELLA						Н
A.SWAIN		COORONG	GEN	NERAL LAYOUT		
A.LORETO						
scale @ a1 AS SHOWN	CLIENT EQUIS			UGL DRAWING No. SHEET AMDT		
10		CONFIRM SCALE		100mm ON A1 ORIGINAL		

20000mm

2000 4000 6000 8000 10000

SCALE 1:200 AT ORIGINAL SIZE