

Section	Description	Value
Project Timeline	Date PPA signed	30/03/2016
	Date of commencement of construction	1/04/2016
	Initial scheduled date of practical completion	12/07/2017
	Actual date of practical completion	30/06/2017
	Commissioning date	30/06/2017
	Date of commencement of normal operation	1/07/2017
Section	Description	Value
PV System	PV array latitude	668815N
	PV array longitude	477921 E
	PV array rated installed peak capacity (DC)	1,334
	PV array total area (module area only)	23,937
	PV array orientation from True North	0
	PV array tilt angle above horizontal	25
	PV array fixed or tracking	fixed
	PV array rated open circuit voltage	876
	PV array rated short circuit current	2137
	Quantity of modules	11680
	Module manufacturer	First Solar
	Module model	FS-4115A-3
	Module nominal/rated power at STC	115
	Quantity of modules per string	10
	Quantity of strings per inverter	1168
	Inverter continuous rated output power (AC)	1100
	Quantity of inverters	1
	Total inverter continuous rated output (AC)	1100
	Inverter manufacturer	SMA
	Inverter model	SC-1000CP-XT
PV module datasheets	http://www.firstsolar.com/en	
Inverter datasheets	http://files.sma.de/dl/25585/S	
Section	Description	Value
Wind Power System	Wind farm latitude	6786823
	Wind farm longitude	478800
	Wind farm total rated output	4100
	Quantity of wind turbines	2
	Wind turbine rated power	2050
	Wind turbine hub height	80
	Wind turbine manufacturer	Senvion
	Wind turbine model	MM92
	Wind turbine datasheets	https://www.senvion.com/glo
	Wind turbine power vs wind speed curves	https://www.senvion.com/glo
Section	Description	Value
stem	Total storage capacity	495
	Total usable/available storage	376
	Total usable/available storage (C ₂₀)	na
	Storage technology	Li Ion Titanate

Storage sy:	Storage manufacturer	Toshiba
	Storage model	
	Rated output power (AC)	1000
	Rated input power (AC)	1000
	Design average daily depth of discharge	NA
	Max allowable depth of discharge	98%
	Storage system cycle life / DOD curves	n/a
Section	Description	Value
Non-renewable generation system	Total generator rated output	3920
	Estimated annual fossil fuel consumption before ARENA funded project	3300
	Schedule of gensets including:	N+1, with Reserve Generator
	Individual genset identifiers as used in data collection	G01, G02 etc
	Individual genset rated outputs	519
	Individual genset manufacturer name and model details	Deutz TBD 616-V12 G3
	Individual genset fuel consumption ratings	128/101/69
Section	Description	Value
Dynamic Resistor System	Rated dissipation power (AC)	3000
	Individual resistor modules	4 x 750
	Dynamic Thyristor/Phase Angle Controller	12 x 250 kW
	Nominal Voltage	415
	Manufacturer	Metal Resistor Deploye
	Step Up transformer	415/690
	Switchgear& Control in separate container	415
Section	Description	Value
Diesel UPS	Total generator rated output	1700
	System Manufacturer	Custom packaged by Hydro Tasmania
	Alternator/flywheel manufacturer	Hitzinger
	Nominal Voltage	690
	Alternator continuous active power output	690
	Alternator continuous apparent power output	850
	Electromagnetic clutch	Brushless, STROMAG Type MEA 630
	Individual unit identifiers as used in data collection	DUPS1, DUPS2
	Individual genset manufacturer name and model details	Cummins KTA38G5
	Individual genset fuel consumption ratings	209/161/113
	Individual genset datasheets	http://www.wme.cn/CUMMIN
	Section	Description
	UTC Offset	+09:30
	Pyranometer 1 Horizontal manufacturer	Kipp and Zonen
	Pyranometer 1 Horizontal model	CMP10
	Pyranometer 1 Horizontal tilt angle	0
	Pyranometer 2 POA manufacturer	Kipp and Zonen
	Pyranometer 2 POA model	SMP11
	Pyranometer 2 POA tilt angle	25
	Reference Cell POA manufacturer	First Solar/Atonometrics

Meteorological monitoring system

Reference Cell POA model	115 w module/ RDE200
Reference Cell POA tilt angle	25
Wind Speed - Sodar manufacturer	Fulcrum 3D
Wind Speed Sodar model	FS1 Sodar
Hygrometer manufacturer	Lufft
Hygrometer model	WS510-UMB
Rain gauge manufacturer	refer BOM (CP AWS 016090)
Rain gauge model	refer BOM (CP AWS 016090)
Temperature sensor 1 (ambient) manufacturer	Lufft
Temperature sensor 1 (ambient) model	WS510-UMB
Temperature sensor 1 (ambient) location	PV site ambient
Temperature sensor 2 (module) manufacturer	Lufft
Temperature sensor 2 (module) model	WT1
Temperature sensor 2 (module) location	PV site ambient
Pyranometer 1 data sheet	http://www.kippzonen.com/Pi
Pyranometer 2 data sheet	http://www.kippzonen.com/Pi
Ref cell data sheet	http://www.atonometrics.com
Sodar data sheet	http://www.fulcrum3d.com/w
Hygrometer data sheet	http://lufft.com/productflyer.g
Temp sensor 1 (ambient) data sheet	http://lufft.com/productflyer.g
Temp sensor 2 (module) data sheet	http://www.lufft.com/en/proc

Unit	Descriptor	Comment

Unit	Descriptor	Comment
° (±DDD.ddd)		GDA 1994 MGA Zone 53
° (±DDD.ddd)		GDA 1994 MGA Zone 53
kW	$P_{PV,DC}$	at 40 deg C
m ²	A_{PV}	includes space between rows/modules only
° West or East of North		
°	β_{PV}	
V	$V_{OC,array}$	
A	$I_{SC,array}$	

W	P_{module}	
kW	P_{inv}	at 25 deg C, 1 MW at 40 Deg C
kW	$P_{inv,total}$	at 25 deg C, 1 MW at 40 Deg C

[AU/-/media/First-Solar/Technical-Documents/Series-4-Datasheets/Series-4V3-Module-C1000CP-DEN1529-V21web.pdf](#)

Unit	Descriptor	Comment
° (±DDD.ddd)		GDA 1994 MGA Zone 53
° (±DDD.ddd)		GDA 1994 MGA Zone 53
kW	P_{wind}	
kW	$P_{turbine}$	
m	$h_{turbine}$	
		with hot climate option

[bal/en/wind-energy-solutions/wind-turbines/mm/mm92/](#)
[bal/en/wind-energy-solutions/wind-turbines/mm/mm92/](#)

Unit	Descriptor	Comment
kWh	E_{stor}	nominal cell rating
kWh	$E_{stor,avail}$	nominally 12% to 88%
Ah	$C_{stor,avail}$	
Eg: Lead-acid, flywheel etc		

		custom built - no specific overall model
kW	$P_{stor,out}$	
kW	$P_{stor,in}$	
%	DOD_{daily}	DOD is highly variable
%	DOD_{max}	0% possible but not recommended
		not applicable to likely operation
Unit	Descriptor	Comment
kW	$P_{gen,total}$	8 x 519 kW nominal output
kL		diesel
kW		nominal site rating
l/h		Manufacturer spec at 100%, 75%, 50% load,
Unit	Descriptor	Comment
kW		
kW		
kW		
V		
V		
V		
Unit	Descriptor	Comment
kVA		
V		
kW		at 0.8 PF
kVA		
l/h		Manufacturer spec at 100%, 75%, 50% load,
IS/KTA38-G5.pdf		
Unit	Descriptor	Comment
±hh:mm		
		integrated into Luft WS510-UMB
°	$\beta_{pyranometer}$	
°	$\beta_{pyranometer}$	
		calibrated module as used for main array

°	β_{refcell}	
		integrated weather monitoring station at PV site
		Data from Coober Pedy Airport BOM Automatic Weather Station aprox 5 km away to be used http://www.bom.gov.au/products/IDS60801/IDS60801.95458.shtml
		integrated weather monitoring station at PV site
		back of module at PV site
		product/13/CMP11-Pyranometer#.V7ZS9vI94h4
		product/281/SMP10-Pyranometer#.V7ZTivI94h4
		y/products/field-i-v-measurement-system-for-pv-modules/
		p-content/uploads/2015/11/dt_intfc4ef928e173cce_563c18afd0044.pdf?Fulcrum3D%20Sodar%20-
		php?lang=en&productid=8375.U13
		php?lang=en&productid=8375.U14
		ducts/temperature-probe-wt1-8160wt1/