

500kw AAAS Example

AAAS Example, Bulawayo, Zimbabwe

Report

Project Name	AAAS Example
Project Description	500kw
Project Address	Bulawayo, Zimbabwe
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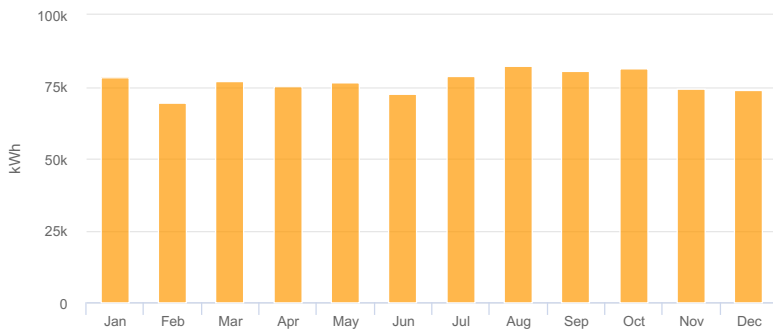
System Metrics

Design	500kw AAAS Example
Module DC Nameplate	524.4 kW
Inverter AC Nameplate	420.0 kW Load Ratio: 1.25
Annual Production	920.3 MWh
Performance Ratio	75.9%
kWh/kWp	1,754.9
Weather Dataset	TMY, 10km Grid, meteonorm (meteonorm)
Simulator Version	71b60a7a24-64462d0407-0d9ed2e0c9-2972c6c279

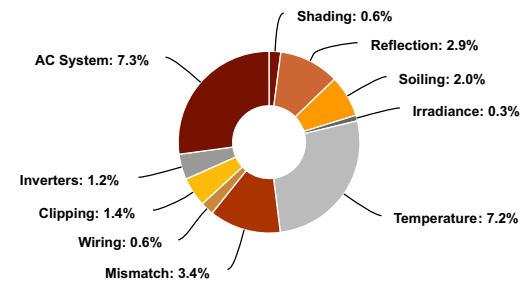
Project Location



Monthly Production



Sources of System Loss



Annual Production

	Description	Output	% Delta
Irradiance (kWh/m ²)	Annual Global Horizontal Irradiance	2,170.4	
	POA Irradiance	2,313.0	6.6%
	Shaded Irradiance	2,300.1	-0.6%
	Irradiance after Reflection	2,233.5	-2.9%
	Irradiance after Soiling	2,188.8	-2.0%
	Total Collector Irradiance	2,188.8	0.0%
Energy (kWh)	Nameplate	1,148,439.9	
	Output at Irradiance Levels	1,145,313.4	-0.3%
	Output at Cell Temperature Derate	1,062,531.8	-7.2%
	Output After Mismatch	1,026,020.3	-3.4%
	Optimal DC Output	1,019,505.7	-0.6%
	Constrained DC Output	1,005,144.5	-1.4%
	Inverter Output	992,911.0	-1.2%
	Energy to Grid	920,255.0	-7.3%
Temperature Metrics			
	Avg. Operating Ambient Temp		22.9 °C
	Avg. Operating Cell Temp		34.6 °C
Simulation Metrics			
	Operating Hours	4633	
	Solved Hours	4633	

Condition Set

Description	Condition Set 1											
Weather Dataset	TMY, 10km Grid, meteonorm (meteonorm)											
Solar Angle Location	Meteo Lat/Lng											
Transposition Model	Perez Model											
Temperature Model	Sandia Model											
Temperature Model Parameters	Rack Type	a	b	Temperature Delta								
	Fixed Tilt	-3.56	-0.075	3°C								
	Flush Mount	-2.81	-0.0455	0°C								
Soiling (%)	J	F	M	A	M	J	J	A	S	O	N	D
	2	2	2	2	2	2	2	2	2	2	2	2
Irradiation Variance	5%											
Cell Temperature Spread	4° C											
Module Binning Range	-2.5% to 2.5%											
AC System Derate	0.50%											
Module Characterizations	Module						Uploaded By		Characterization			
	CS6U 345M (Canadian Solar)						Folsom Labs		Spec Sheet Characterization, PAN			
Component Characterizations	Device						Uploaded By		Characterization			
	SUN2000-105KTL-H1 (Huawei)						Folsom Labs		Spec Sheet			

Components

Component	Name	Count
Inverters	SUN2000-105KTL-H1 (Huawei)	4 (420.0 kW)
AC Panels	4 input AC Panel	1
AC Home Runs	50 mm2 (Copper)	4 (218.9 m)
AC Home Runs	500 mm2 (Copper)	1 (2,821.1 m)
Home Runs	12 AWG (Copper)	16 (110.6 m)
Combiners	1 input Combiner	8
Combiners	5 input Combiner	4
Combiners	8 input Combiner	4
Strings	10 AWG (Copper)	52 (3,898.7 m)
Module	Canadian Solar, CS6U 345M (345W)	1,520 (524.4 kW)

Wiring Zones

Description	Combiner Poles	String Size	Stringing Strategy
Wiring Zone	12	17-30	Along Racking

Field Segments

Description	Racking	Orientation	Tilt	Azimuth	Intrarow Spacing	Frame Size	Frames	Modules	Power
Solar PV array	Fixed Tilt	Landscape (Horizontal)	15°	0°	2.4 m	2x1	760	1,520	524.4 kW

