



QUOTATION





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Dear Albert,

Thank you for choosing SixD Consulting to design and quote your solar project.

We did our design with the following data:

- Battery Backup System
- Total Daily Usage 25 kWh
- Night Time usage 8 kWh (Measured)
- EnerSol PV Modules
- Sunsynk Inverter
- Roof Mount

We calculated the total project value at R 129 686 excl VAT. At your current tariff of R2.37 per kWh, your ROI will be +-5 years.

See attached detailed design and simulated production, as well as our detailed costing.

We would be able to start this project 14 days after the approval of the quotation.

We hope you find everything in order, please contact us if you need any additional information.

Regards,

SixD Renewables

Rooftop House

AJ Viljoen, 8 Honeyball street, vanderbijlpark

Report

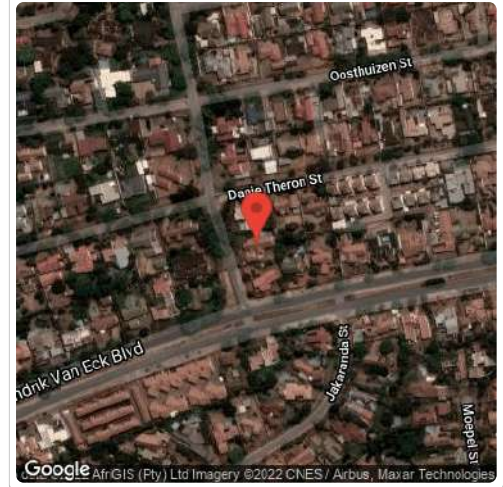
Project Name	AJ Viljoen
Project Address	8 Honeyball street, vanderbijlpark
Prepared By	Bertus Janse van Rensburg info@sixd.co.za



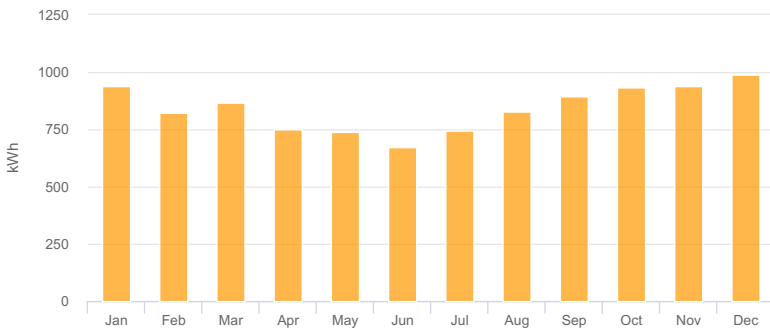
System Metrics

Design	Rooftop House
Module DC Nameplate	6.00 kW
Inverter AC Nameplate	5.00 kW Load Ratio: 1.20
Annual Production	10.11 MWh
Performance Ratio	77.4%
kWh/kWp	1,685.3
Weather Dataset	TMY, 10km Grid, meteonorm (meteonorm)
Simulator Version	414c5bc716-617639f4f4-049deabd58-7753ff5f92

Project Location

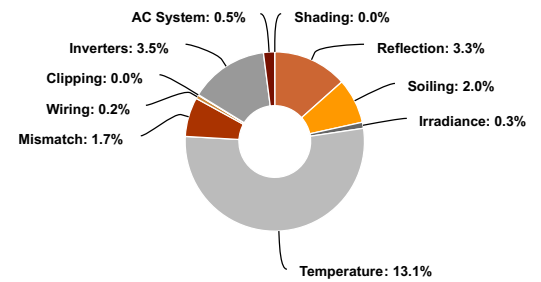


Monthly Production



Month	GHI (kWh/m ²)	POA (kWh/m ²)	Shaded (kWh/m ²)	Nameplate (kWh)	Grid (kWh)
January	211.7	208.2	208.2	1,182.1	941.0
February	178.5	180.9	180.9	1,030.8	821.0
March	179.2	189.2	189.2	1,077.8	865.9
April	143.8	159.4	159.4	906.5	748.4
May	132.4	154.5	154.5	876.0	740.8
June	115.1	138.4	138.4	782.4	671.6
July	128.6	153.0	153.0	866.9	744.5
August	153.9	174.8	174.8	995.7	829.1
September	180.0	193.6	193.6	1,105.5	892.9
October	197.8	203.4	203.4	1,159.2	932.5
November	207.2	206.0	206.0	1,173.7	936.9
December	221.8	217.2	217.2	1,236.4	987.4

Sources of System Loss



⚡ Annual Production			
	Description	Output	% Delta
Irradiance (kWh/m ²)	Annual Global Horizontal Irradiance	2,050.0	
	POA Irradiance	2,178.5	6.3%
	Shaded Irradiance	2,178.5	0.0%
	Irradiance after Reflection	2,106.5	-3.3%
	Irradiance after Soiling	2,064.3	-2.0%
	Total Collector Irradiance	2,064.3	0.0%
Energy (kWh)	Nameplate	12,393.1	
	Output at Irradiance Levels	12,359.6	-0.3%
	Output at Cell Temperature Derate	10,738.5	-13.1%
	Output After Mismatch	10,551.4	-1.7%
	Optimal DC Output	10,533.8	-0.2%
	Constrained DC Output	10,531.6	0.0%
	Inverter Output	10,162.9	-3.5%
	Energy to Grid	10,112.1	-0.5%
Temperature Metrics			
	Avg. Operating Ambient Temp		20.0 °C
	Avg. Operating Cell Temp		42.9 °C
Simulation Metrics			
	Operating Hours		4590
	Solved Hours		4590

☁ 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	Enersol Half Cell Mono Series 400 (Iseli Energy)						Uploaded By	Folsom Labs					Characterization
														Spec Sheet Characterization, PAN
Component Characterizations	Device	SUN-5K-SG01/03LP1-EU (SunSynk)						Uploaded By	Folsom Labs					Characterization
														Spec Sheet

📦 Components		
Component	Name	Count
Inverters	SUN-5K-SG01/03LP1-EU (SunSynk)	1 (5.00 kW)
Strings	10 AWG (Copper)	2 (53.3 ft)
Module	Iseli Energy, Enersol Half Cell Mono Series 400 (400W)	15 (6.00 kW)

🔌 Wiring Zones			
Description	Combiner Poles	String Size	Stringing Strategy
Wiring Zone	-	4-10	Along Racking

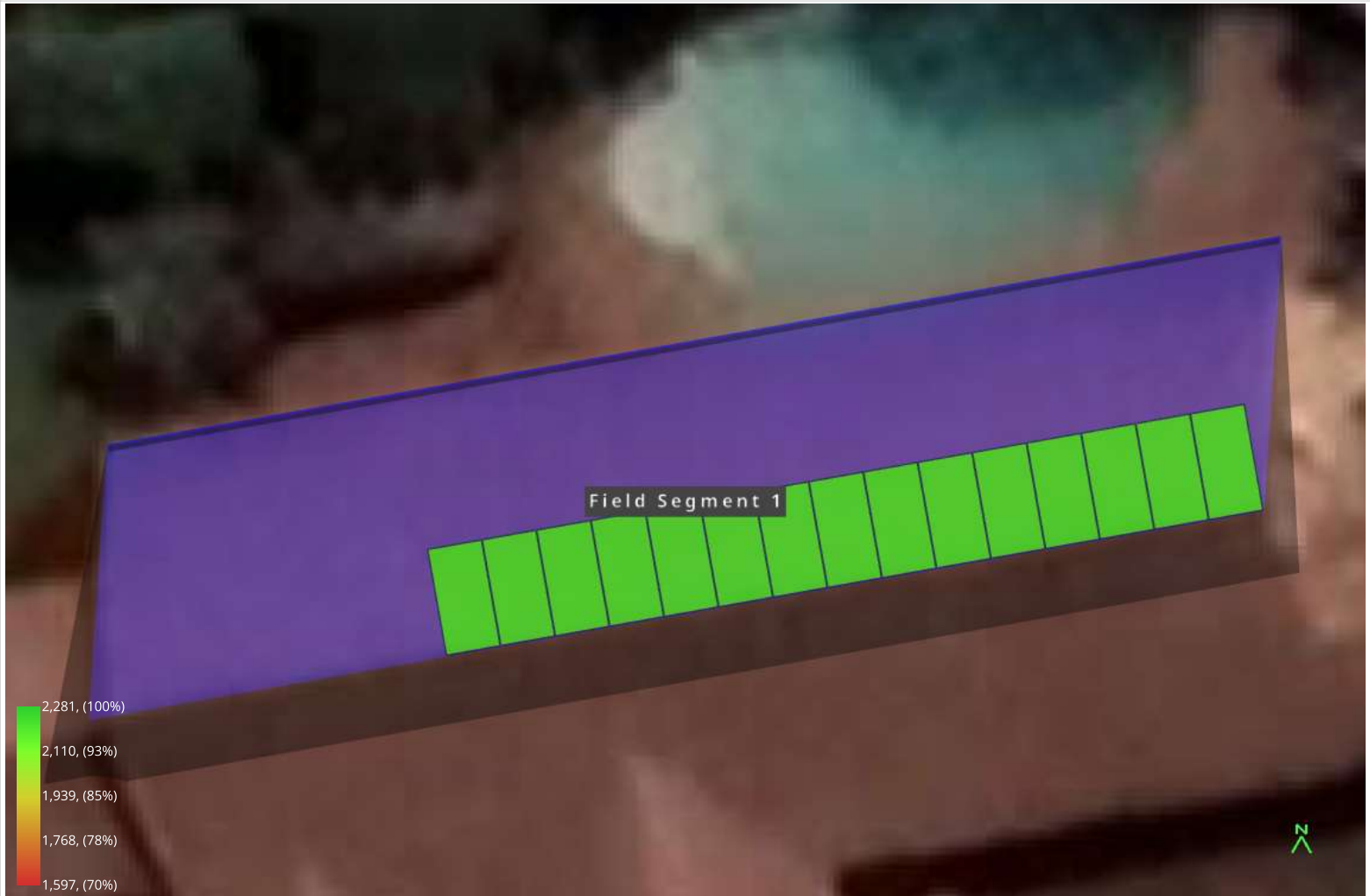
🏗 Field Segments									
Description	Racking	Orientation	Tilt	Azimuth	Intrarow Spacing	Frame Size	Frames	Modules	Power
Field Segment 1	Flush Mount	Portrait (Vertical)	10°	349.91183°	0.0 ft	1x1	15	15	6.00 kW

Detailed Layout



Rooftop House AJ Viljoen, 8 Honeyball street, vanderbijlpark

Shading Heatmap



Shading by Field Segment

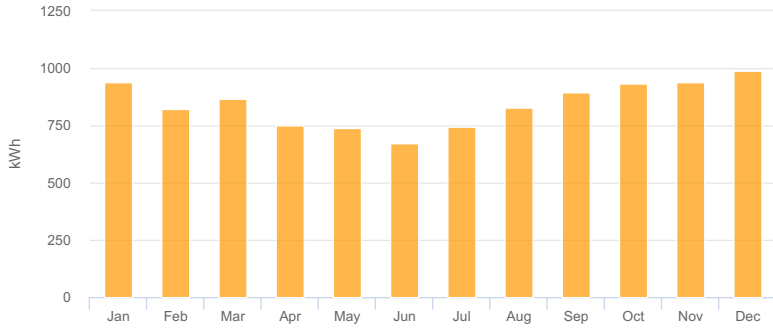
Description	Tilt	Azimuth	Modules	Nameplate	Shaded Irradiance	AC Energy	TOF ²	Solar Access	Avg TSRF ²
Field Segment 1	10.0°	349.9°	15	6.00 kWp	2,178.5kWh/m ²	10.1 MWh ¹	95.5%	100.0%	95.5%
Totals, weighted by kWp			15	6.00 kWp	2,178.5kWh/m²	10.1 MWh	95.5%	100.0%	95.5%

¹ approximate, varies based on inverter performance
² based on location Optimal POA Irradiance of 2,281.1kWh/m² at 33.4° tilt and 5.0° azimuth

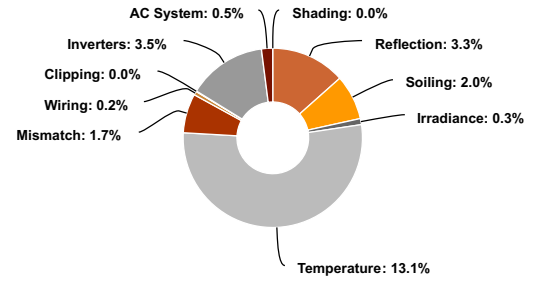
Solar Access by Month

Description	jan	feb	mar	apr	may	jun	jul	aug	sep	oct	nov	dec
Field Segment 1	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Solar Access, weighted by kWp	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
AC Power (kWh)	941.0	821.0	865.9	748.4	740.8	671.6	744.5	829.1	892.9	932.5	936.9	987.4

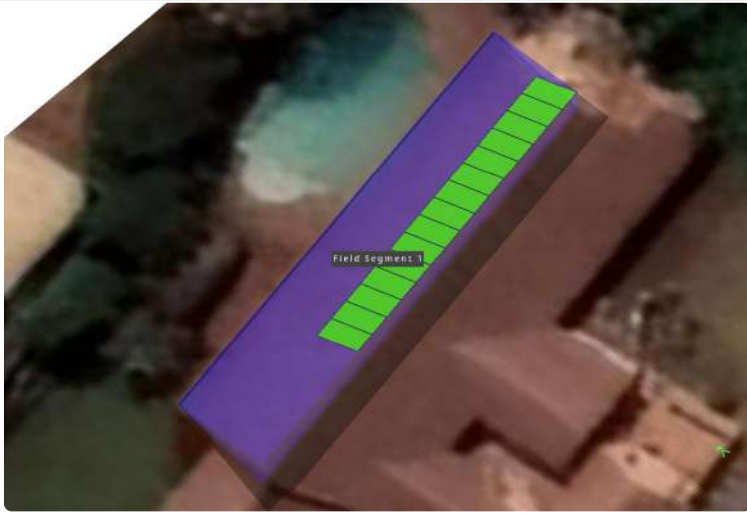
Monthly Production



Sources of System Loss



Southwestern Angle



Southeastern Angle

