



Photovoltaic Proposal

In order for humanity to overcome the real challenges faced in combating global warming we need to be innovative in our approach. Accepting that in order to help lower our carbon emissions, implementation needs to become more financially feasible to our clients. We recognize the magnitude of the challenge and understand that we can only be successful through collaboration, team work and advanced tools. It is our commitment to portray the financial viability of the solutions proposed through Jacara as accurately and transparently as possible.

The factor influencing PV viability the most is design. By "design" we don't mean simply matching voltage, power and currents. Design factors need to include tariff, tariff regulations, seasonal consumption, generation changes, energy profiles, efficiency changes as well as array & mounting options. Jacara is the result of significant research and development dedicated to making PV viable to everyone through technology and innovation.

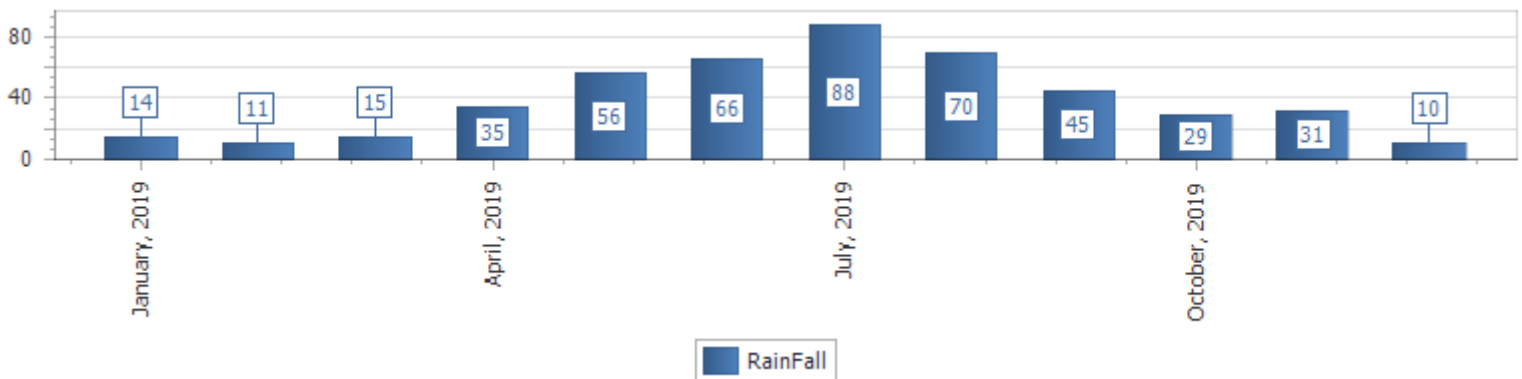
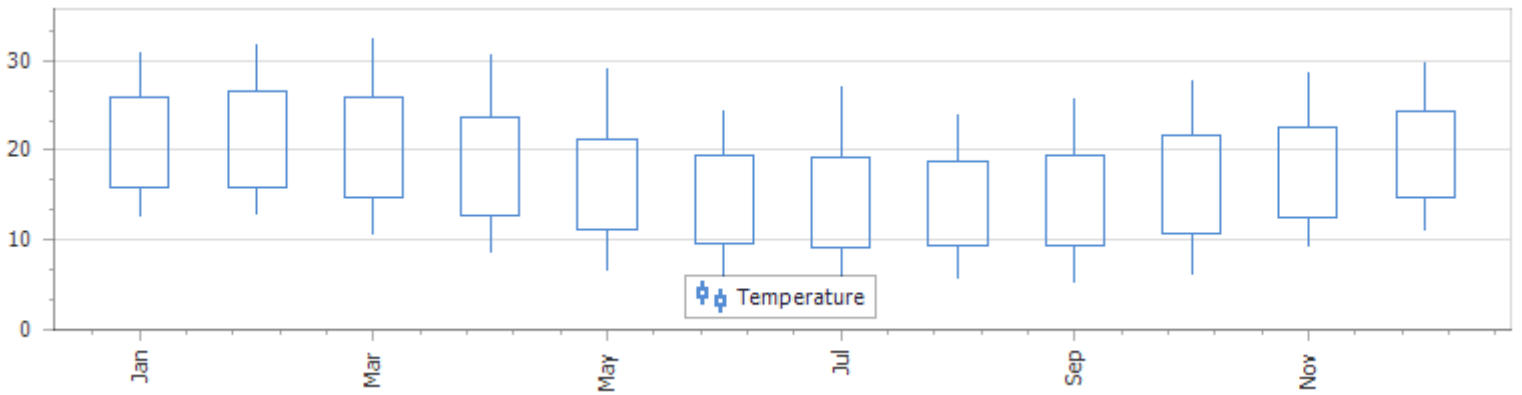
jacara

Customer Details

Client Name	Siebrits
Client Company	5 Seasons Guest House
Address	60 Van der Stel Str
Town	Stellenbosch
Email	siebrits@5-seasons.co.za
Telephone	083 345 3737
Representative Name	Jacques van der Merwe
Representative Company	Falsebay Heating

Site Information

Metering	Prepaid
AC Distribution	Single Phase
Annual Irradiation kW.h/kWp	1981
Current Tariff	BulkRate
Island Monitoring	Wi-Fi
Cellphone Reception	Yes
Grid Tie Monitoring	Local

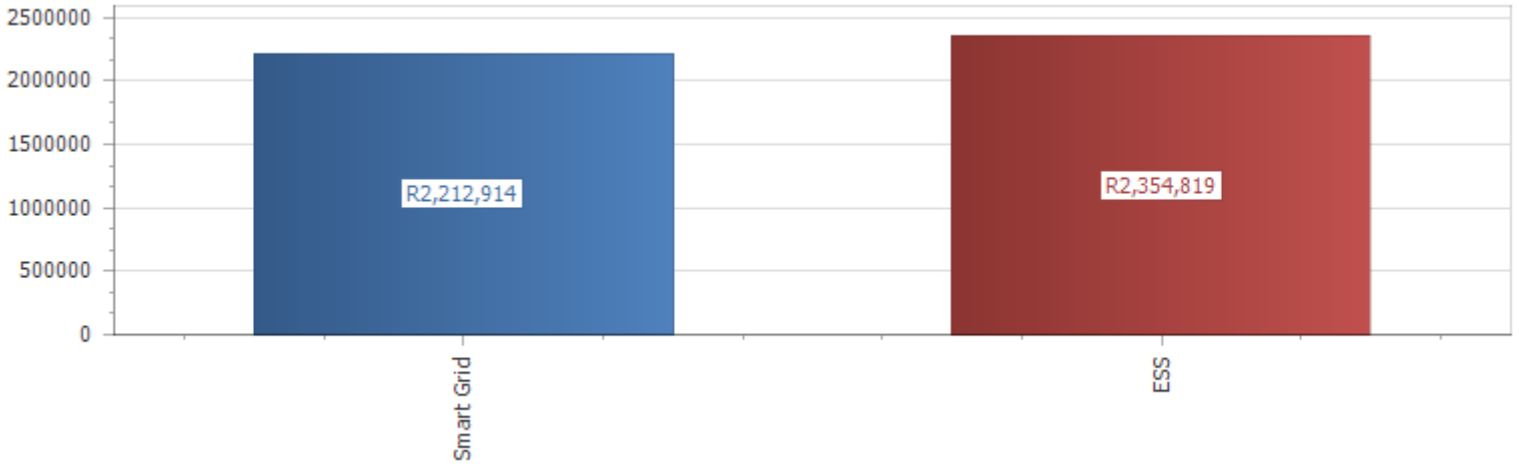


Consumption Breakdown and Suggestions

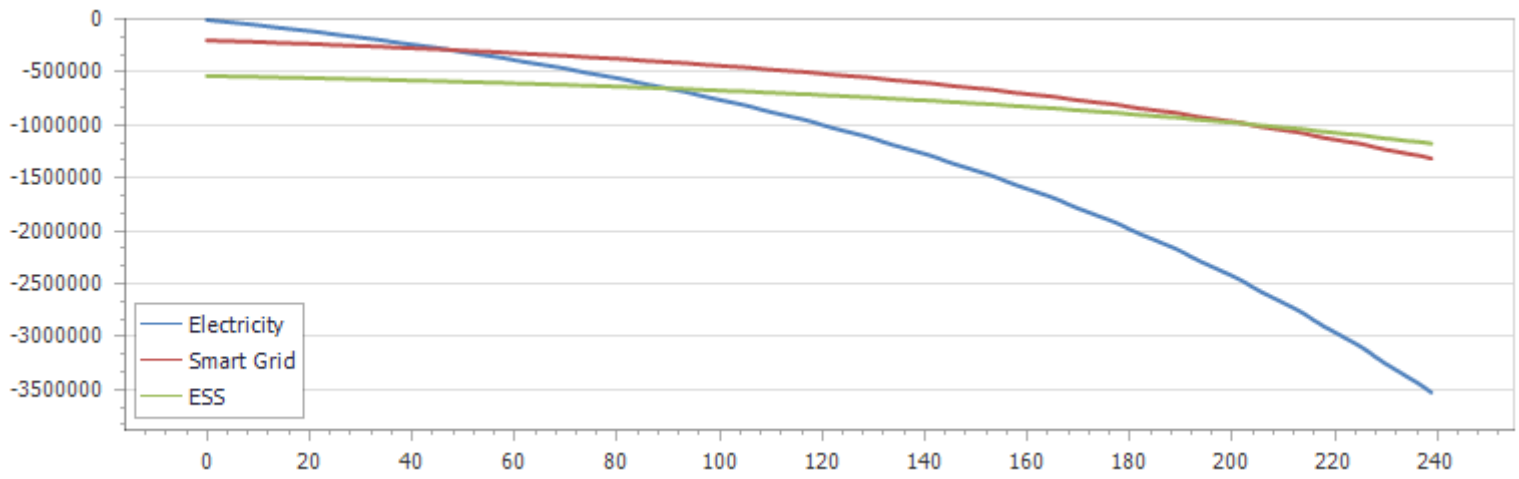
Line Name	Daily kW.h	Proposed Technology	Technology Cost	New kW.h	Essential	Payback
Pool & Lights	4.43		R0.00	4.43	False	0
Laundry & Bar	1.68		R0.00	1.68	True	0
Laundry Lights	2.22		R0.00	2.22	True	0
Africa AC	1.12		R0.00	1.12	False	0
Garden Cottage	11.89	Retrofit	R20000.00	8.32	True	80
Mnt Vw Suite	3.65	A++ Fridge	R7500.00	.37	True	36
Plugs	3.91	A++ Fridge	R7500.00	.39	True	33
Plugs 2	12.55	A++ Fridge	R7500.00	1.25	True	11
Pg - Kitchen	1.79		R0.00	1.79	True	0
Geyser x 2	6.13	Retrofit	R20000.00	1.23	False	63
Kitch - Dishwasher	.22		R0.00	.22	False	0
Pg - Bar Fr & DeepFr	4.50		R0.00	4.50	True	0
AC	1.76		R0.00	1.76	False	0
AC 2	1.89		R0.00	1.89	False	0
AC 3	1.18		R0.00	1.18	False	0
LT - Kitchen & Recep	3.18	LED Lights	R4500.00	.64	True	28
Pg - DiningRm	6.84		R0.00	6.84	True	0
Oven / stove	4.82		R0.00	4.82	False	0
Lt - Dinning	5.43	LED Lights	R7500.00	1.09	True	27
	79.18		R74500.00	45.72		

Total Current Monthly Cost	R5136.54
Total Capital Layout	R74500.00
Projected Monthly Cost	R2866.98
Total Monthly Savings	R2269.56
% Monthly Savings	44.00%
Current Daily Consumption	79.18kWh
Efficiency Target	45.72kWh

System Savings

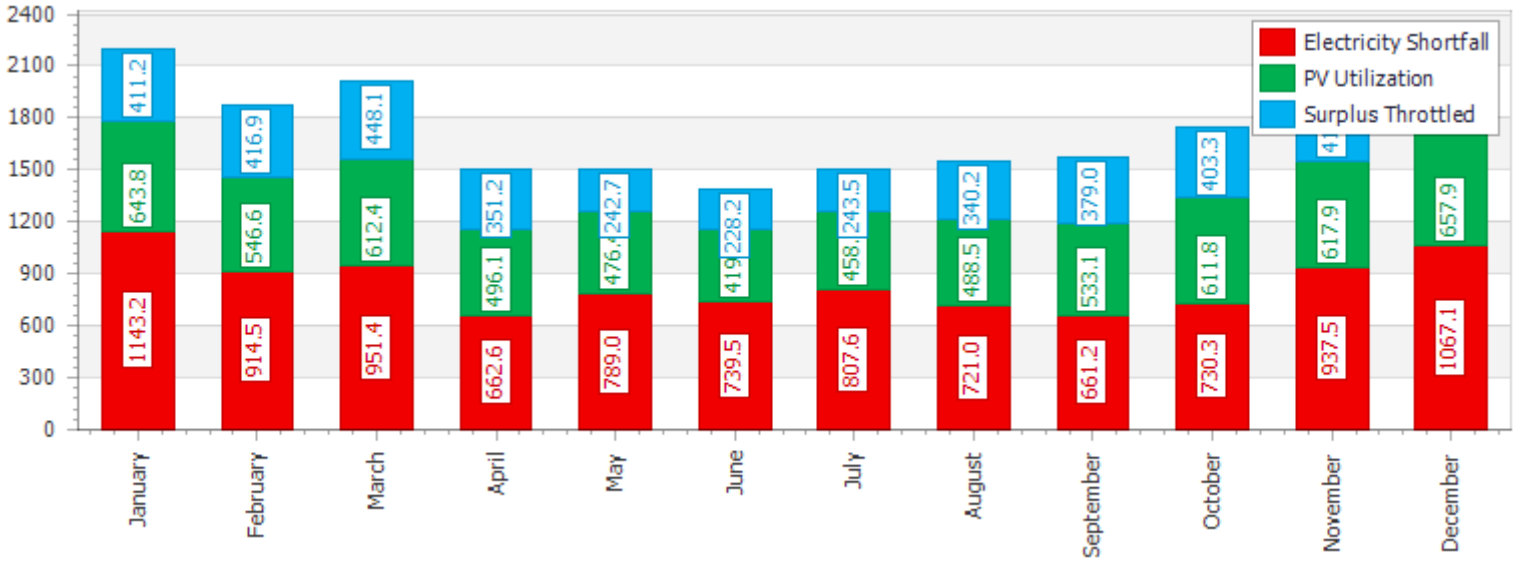


Cashflow Projection

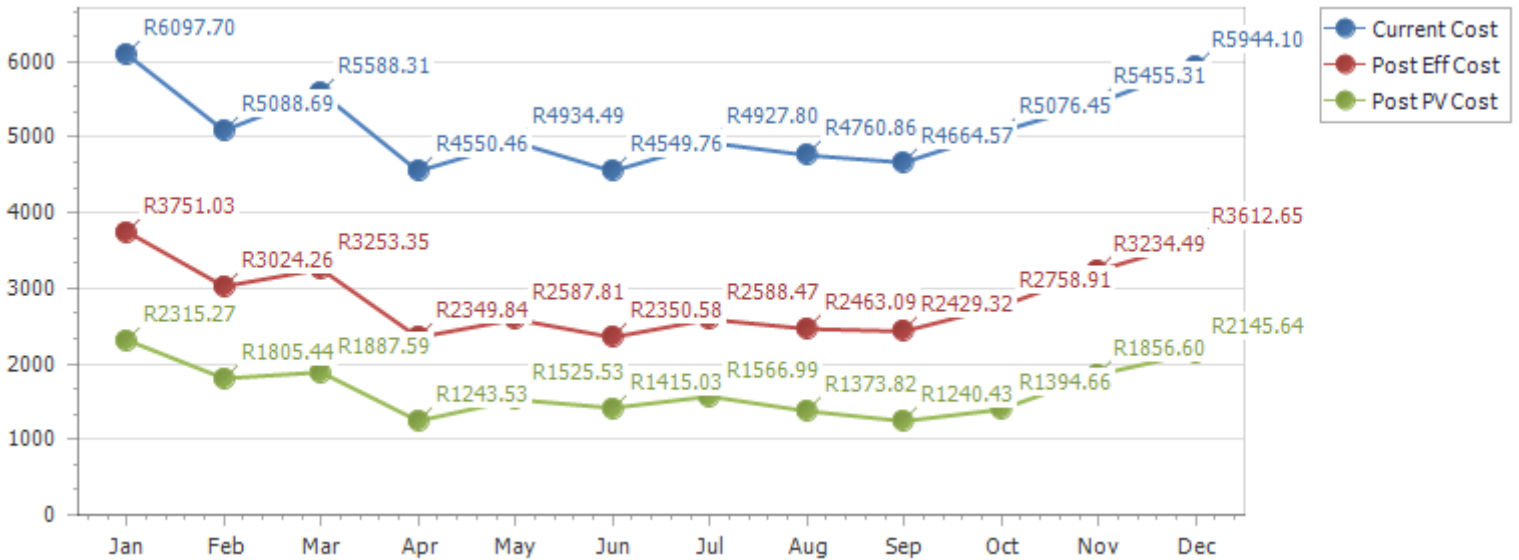


Smart Grid

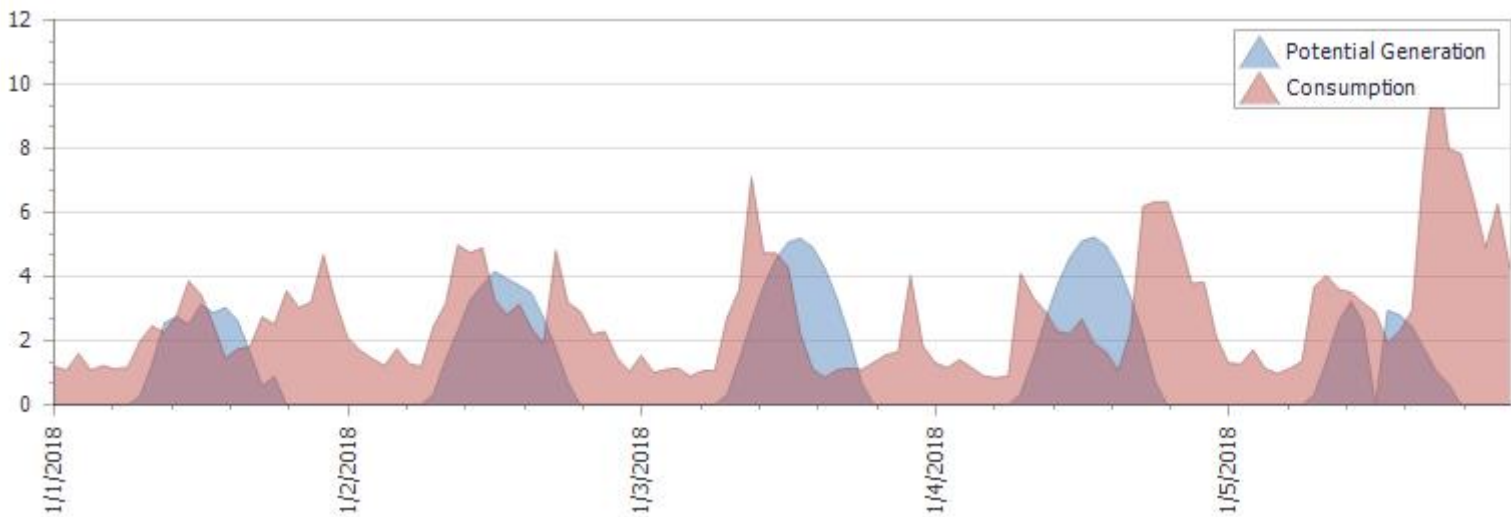
Smart Grid Usage Projection



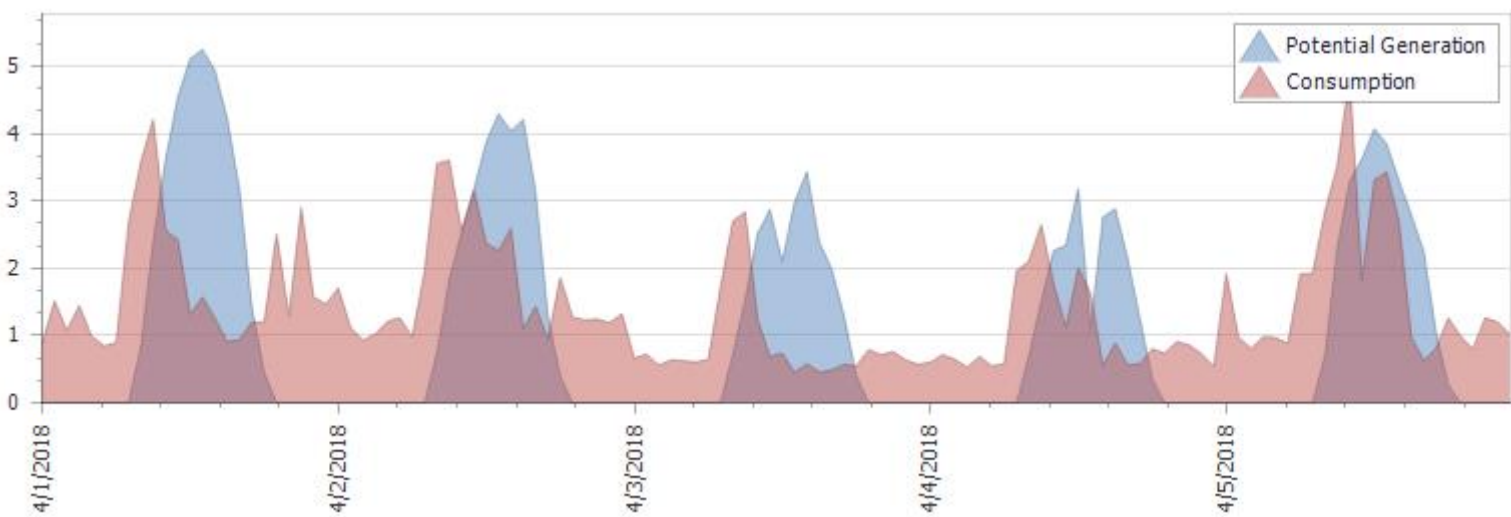
Smart Grid Yearly Costing



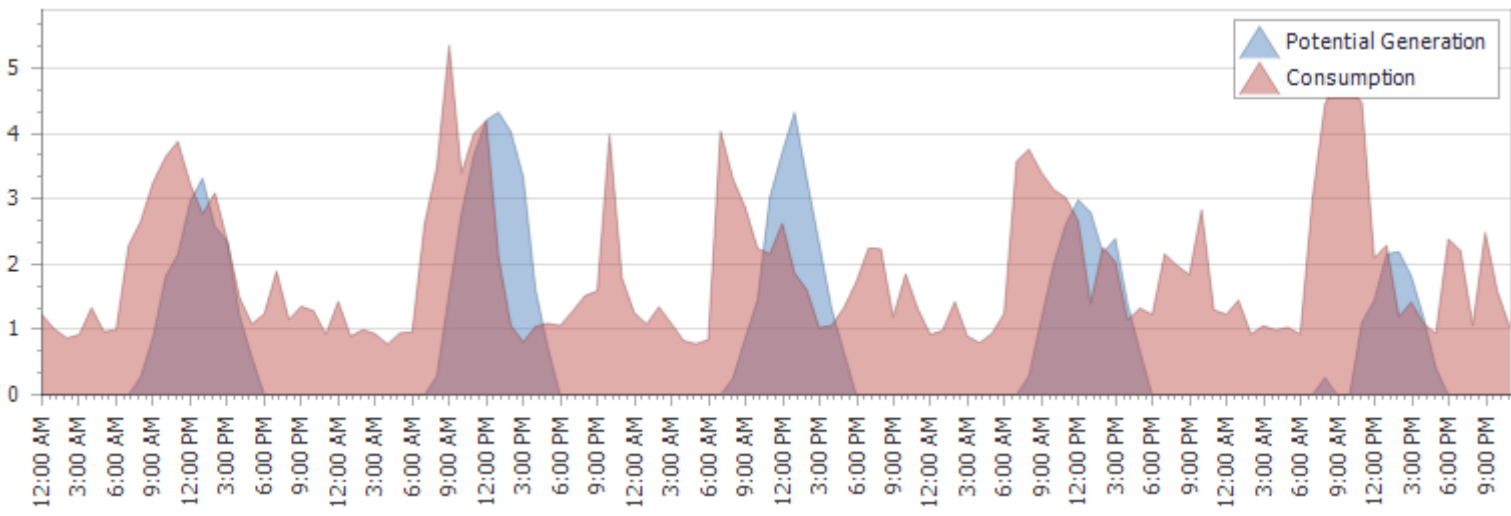
Smart Grid Energy Profile - January



Smart Grid Energy Profile - April



Smart Grid Energy Profile - July



Smart Grid System Specifications

Technical Specifications	
PV Array	5.94 kW.p
Inverter Size	5 kW
Monitoring	Solar Web
Feedback Prevention	Feedback Prevention Ready
Distribution	Single Phase

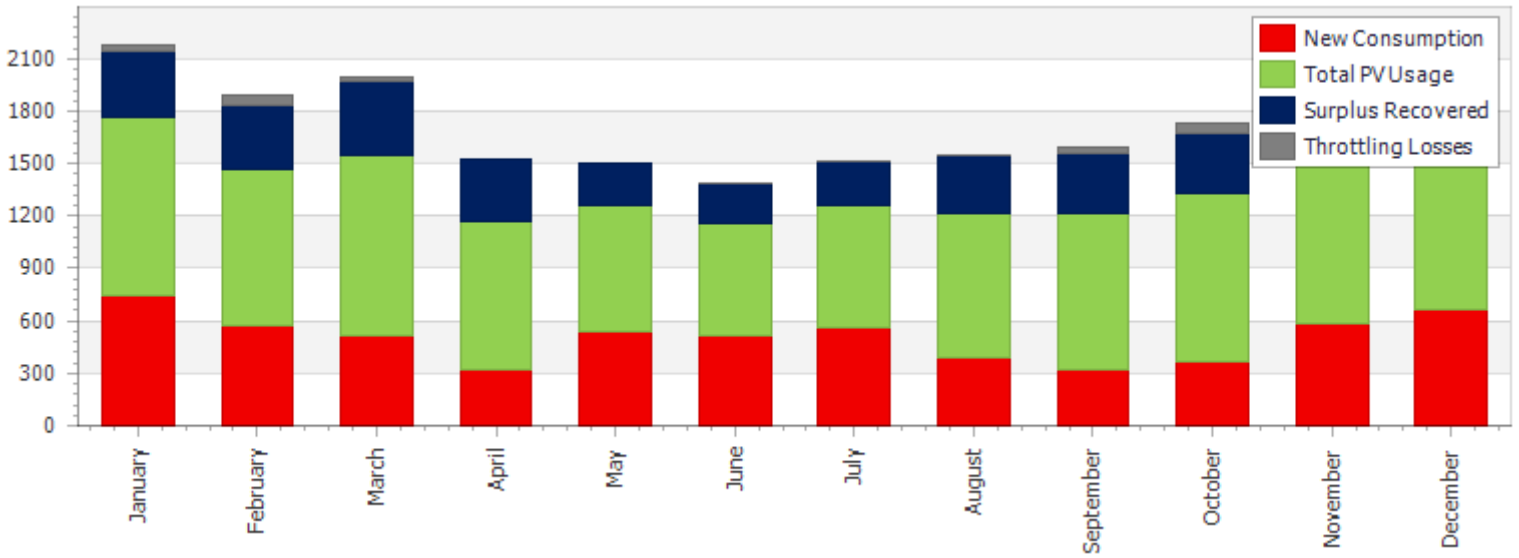
Calculated Site Specific Information	
Payback	4.08 Years
Daytime Consumption	44.90 %
Potential Daily Generation	29.68 kW.h
Actual Daily Generation	17.98 kW.h
Daily Throttling Losses	11.71 kW.h
Specific Yield Including Throttling Losses	3.03 kW.h/kWp/day
PV Inverter Max Generation	5.50 kW
PV Inverter Load Factor	109.95 %

Smart Grid System

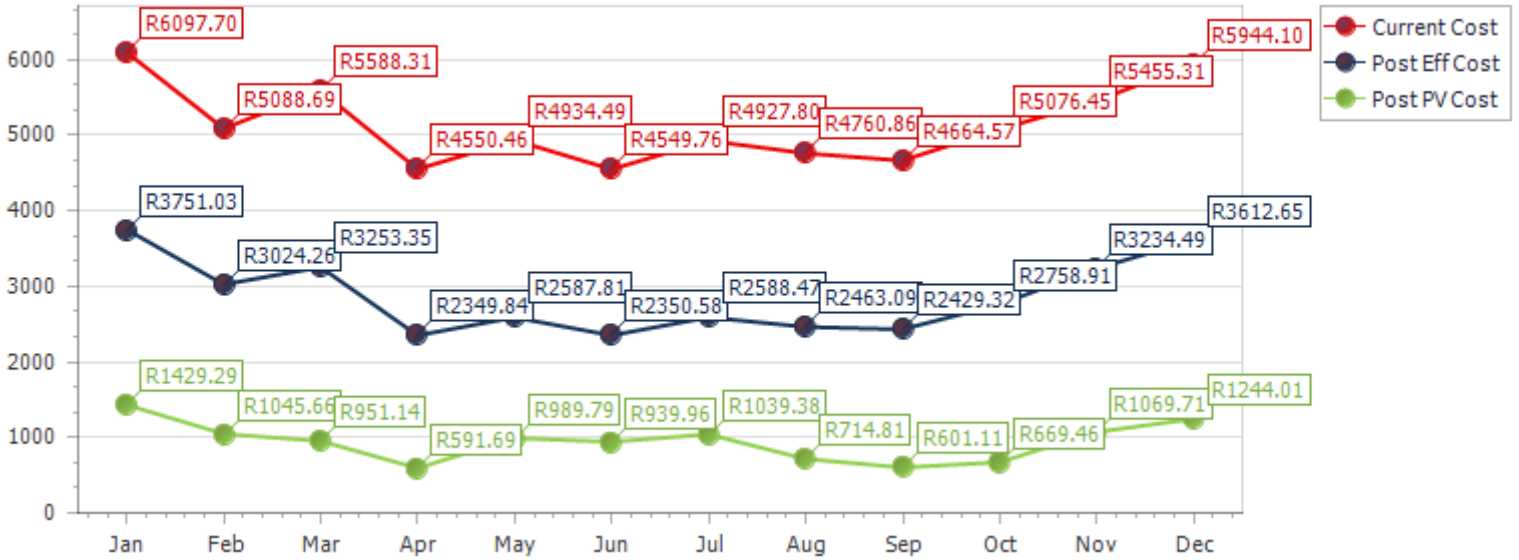
Type	Item	Quantity
PV Modules	Canadian Solar 270W	22
Grid Inverters	Fronius Primo 5.0 Web & LAN	1
Cables & Connectors	4mm Solar Cable Red and Black	30
Cables	6mm 3 Core	15
Cables & Connectors	MC4 Solar Connector Set	2
Lightning Protection	275V Class2 AC Surge Protection	1
Circuit Breakers	40A 1P 5kA CB	1
Cables	Earth Cable 6mm	25
Cables	Earth Spike	1
Accessories	Fronius Smart Meter 1Ph 63A	1
Registration	No Certificate	1
PV Mounting	Mounting System	1
Consumables	Consumables	1
Installation	Installation	1
Total Excluding VAT		R106450.38
Total Including VAT		R122417.94

ESS Hybrid

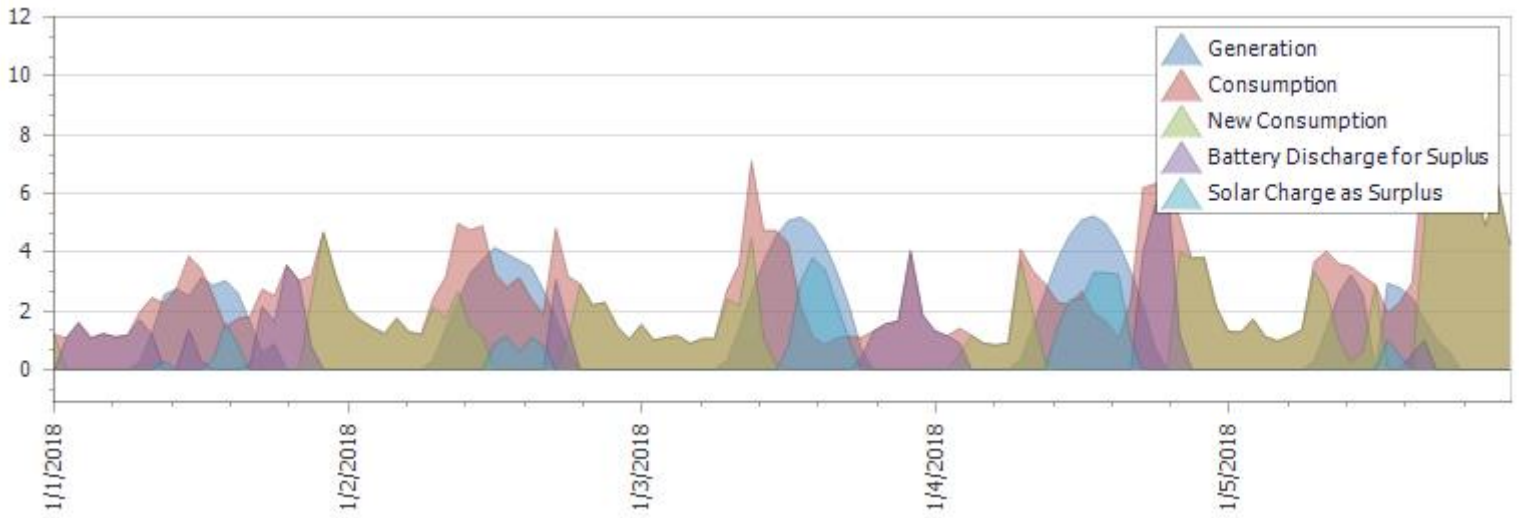
ESS Usage Projection



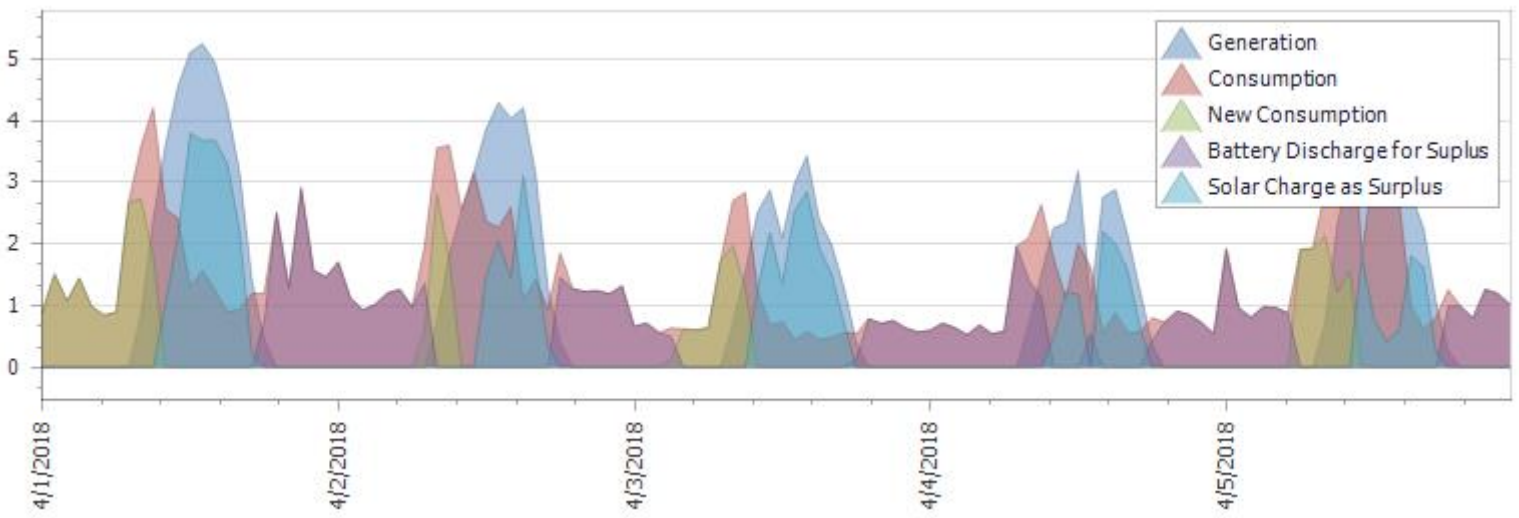
ESS Yearly Costing



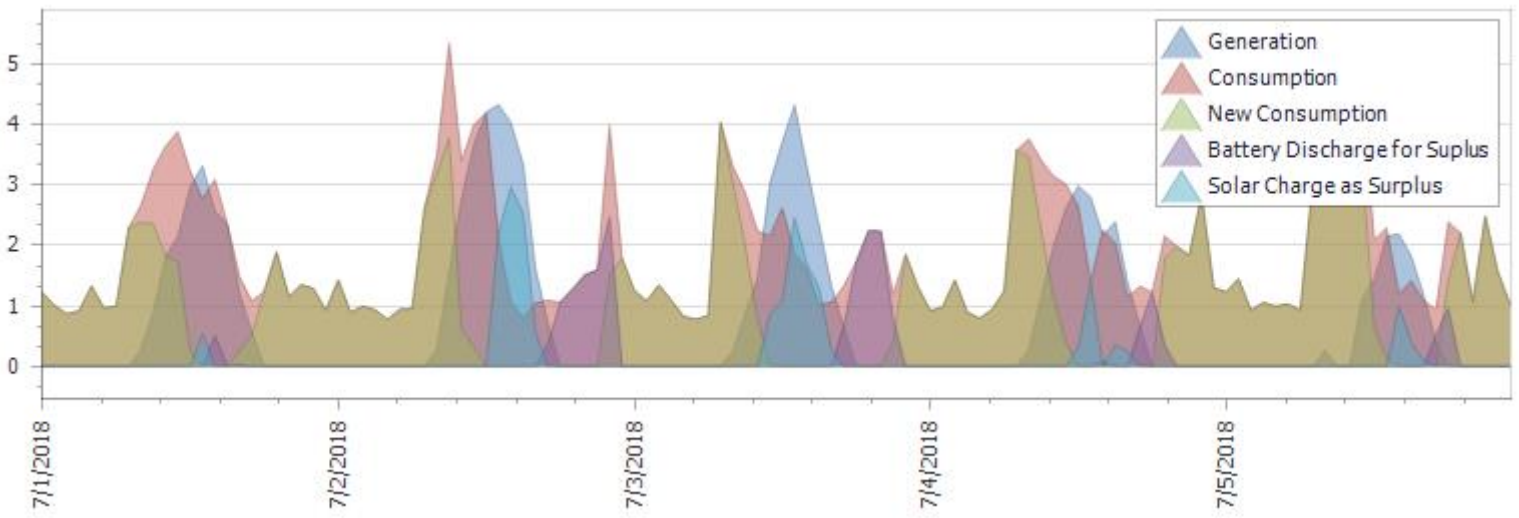
ESS Energy Profile - January



Smart Grid Energy Profile - April



Smart Grid Energy Profile - July



ESS System Specifications

Technical Specifications	
PV Array	5.94 kW.p
Invertor Size	5 kW
System Display	SMA Sunny Portal
Monitoring	SMA Sunny View
Feedback Prevention	Yes
Distribution	Single Phase
Inverter Size	8 kW
Battery Autonomy	21.3 kW.h
Charger Power	5.28 kW
System Monitor	VE CCGX
Off-Site Monitoring Capable	Yes

Calculated Site Specific Information	
Payback	7.67 Years
Average Daily Generation	29.68 kW.h
Average Daily PV Usage	28.98 kW.h
PV Utilization	97.63 %
Specific Yield	5.00 kW.h/kWp
PV Inverter Max Generation	5.50 kW.h
PV Invertor Load Factor	109.95 %
Island Inverter Max Load	4.88 kW
Island Inverter Load Factor	61.01 %
Daily Surplus Recovery	11.71 kW.h
Nocturnal Power Requirements	27.74 kW.h
Calculated Battery Years	45.00 Years
Nocturnal Autonomy	.77 Days
Calculated Monthly Battery Costs	R 7.12

ESS Hybrid

Type	Item	Quantity
PV Modules	Canadian Solar 270W	22
Grid Inverters	Fronius Primo 5.0 Web & LAN	1
Cables & Connectors	4mm Solar Cable Red and Black	30
Cables	6mm 3 Core	15
Cables & Connectors	MC4 Solar Connector Set	2
Lightning Protection	275V Class2 AC Surge Protection	1
Circuit Breakers	40A 1P 5kA CB	1
Cables	Earth Cable 6mm	25
Cables	Earth Spike	1
Accessories	Fronius Smart Meter 1Ph 63A	1
Registration	No Certificate	1
AC Current Sensor	VE AC Meter 1Ph 65A	1

Type	Item	Quantity
Island Inverters	Victron Quattro 48/8000	1
Batteries	Sirius 7.1 kW.h 48V	3
Cables	75mm Inverter Cable	2
Cables	10mm 5 Core	15
Fuses	300A 58V Mega Fuse	1
Fuses	MEGA Fuse Holder	1
DB Boards & Boxes	12Way DB + EL and NB(AC)	1
Circuit Breakers	63A 1P 5kA CB	2
Batteries Accessories	Anti-Slip Mat	3
Accessories	VE CCGX	1
Accessories	VE Wi-fi Dongle	0
Consumables	Consumables	1
Installation	Installation	1
Total Excluding VAT		R464976.14
Total Includin VAT		R534722.56