



EXPECTED POWER GENERATION ON A CLEAR SUNNY DAY.

Total Eskom Units Uer Day	3.41	Solar Panels Required	3 x 325 Watt
Total AC Power Per Day	3 408W	Solar Panel Watts Required	738 Watts
Add 20% Losses	682W	Actual Solar Watts	975 Watts
Total load Per Day With Losses	4 090W	Batteries Required	4 x 150Ah
		Battery Power Available @ 50% DOD	3 600W

Solar module sizing	
Days per week system is used	7
Systems Losses *	20%
Nominal Voltage	48V
Battery Recharge Days *	10.00
Solar Panel Size Selected	325Wp
Solar Panels Required	738Wp
Actual Solar Array Wp	975Wp
Solar Panels in Series	3
Solar Panels in Parallel	1

Battery sizing	
Days Autonomy (Days of Storage)*	1.00
Max Depth of Discharge (%DOD) *	50%
% Capacity left in battery *	50%
Min Battery Capacity Required (Ah@C24)	149Ah
Battery Nominal Voltage per Block	12V
Input Capacity of Battery (Ah@C24)	150Ah
Actual (Selected) Battery Capacity	150Ah
Batteries Bank	1
Quantity Batteries Needed	4

Country: South-Africa Location: Johannesburg

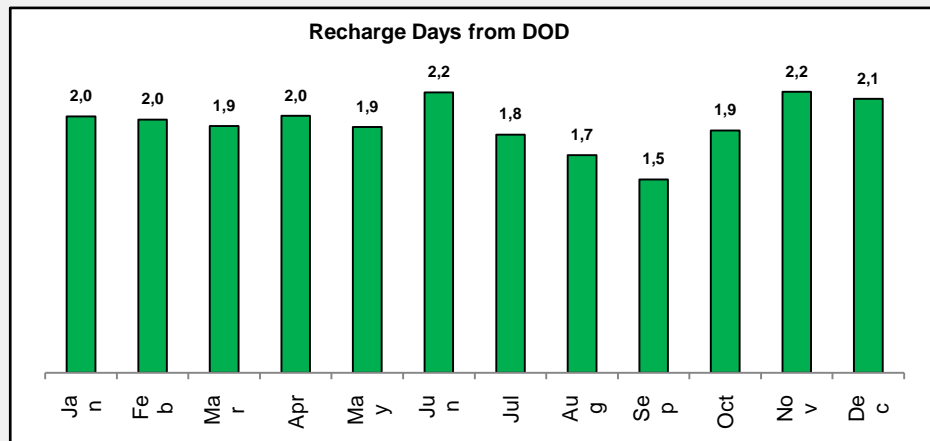
Location	
Latitude	-26
Longitude	28
Elevation (m)	1 742

Tilt Angle		
Selected	Optimum Annual	Optimum Worst Month
30°	30°	30°

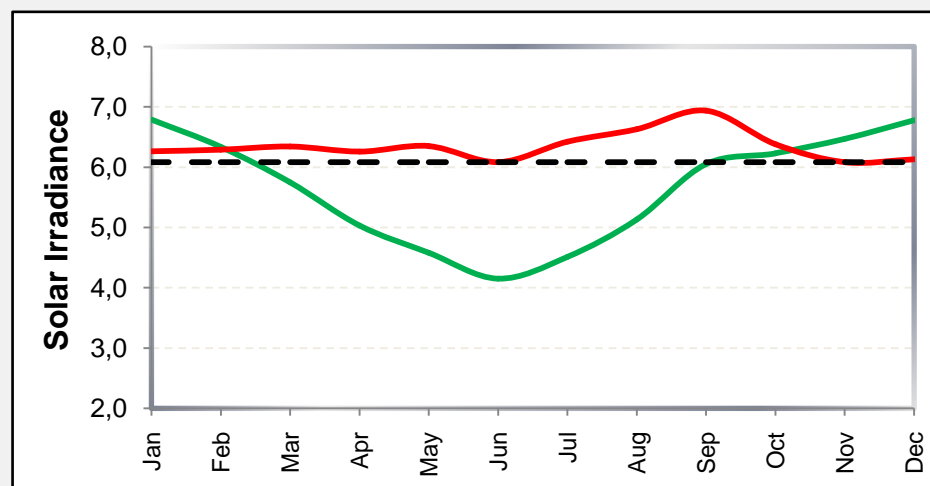
Irradiance		
Max	Min	Selected
6.94	6.08	6.08

Days per week system is used
7

This solar system can store Units of electricity in the batteries @ DOD
 Panels produce in 5 full "sun hours" up to units of electricity

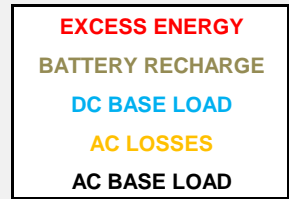
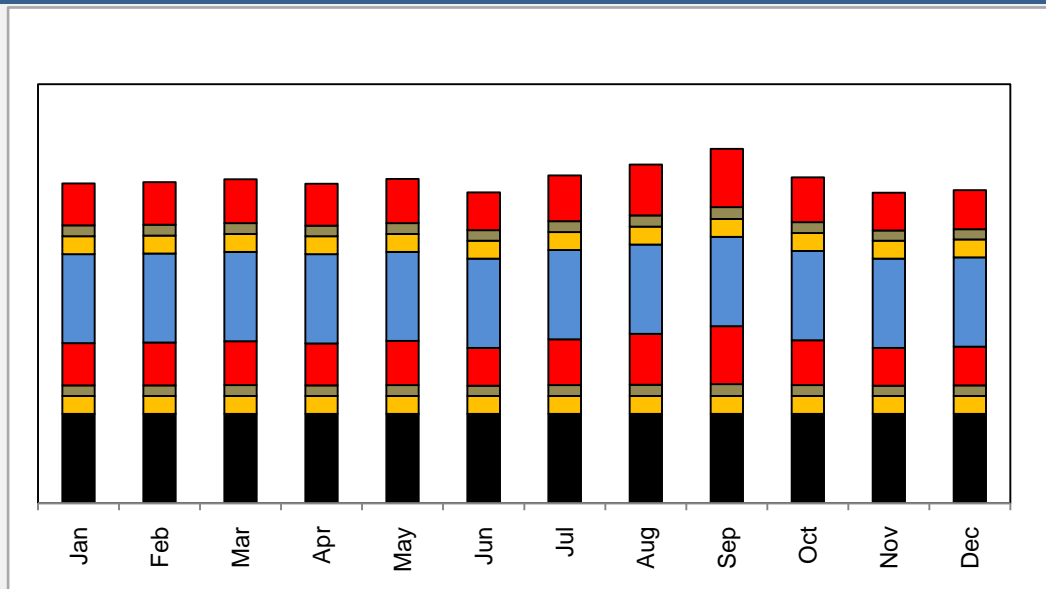


Excess Energy Per Annum	
Without Batt Recharge	614KWp
With Battery Recharge	724KWp



Irradiance at Selected Tilt angle
 Irradiance on Horizontal surface
 Selected Irradiance

Energy distribution from solar array



%DOD - Depth of Discharge, is used to describe how deeply the battery is discharged. If we say a battery is 100% fully charged, it means the DOD of this battery is 0%. If we say the battery have delivered 30% of its energy, here are 70% energy reserved, we say the DOD of this battery is 30%.

Higher values imply deeper discharge and shorter battery life.

DAYS AUTONOMY (DAYS OF STORAGE) - This is the number of days that the batteries must be able to supply the load without any power from the solar array.

SYSTEMS LOSSES - These losses include dust and dirt tolerances, wire losses, losses through controller, temperature losses, battery inefficiencies and losses through the inverter (AC loads).

BATTERY RECHARGE DAYS - (Default 10 days) In order to supply both the load and recharge the batteries after inclement weather, the solar array must produce additional power. The 'Battery Recharge Days' specified will be the maximum number of days that it will take for the solar array to, in addition to supplying the load, completely recharge the batteries after they were complete discharged.

This solar panel kit is made up of the following components:.

- 03 X 325Wp Solar Panel
- 01 X Synapse 2.4kW 24V Pure Sine Wave Inverter
- 01 X Epsolar Tracer 4210AN 40A MPPT Charge Controller
- 04 X 150Ah GEL-VRLA Deep cycle Battery
- 03 X MC4 Single Cable Connector (Male + Female)
- 02 X MC4 T Branch Connector (Male + Female)
- 15m X 6.0mm Red Solar wire
- 15m X 6.0mm Black Solar wire
- 02 X 3m Galvanized Rail
- 12 X PowAR Snap 90* Clips for rails

EXPECTED POWER GENERATION ON A CLEAR SUNNY DAY.