



Solar Panel Energy

PV CALCULATOR

084 44 24235 / 083 544 2484 / 074 305 2967

www.solarpanelenergy.co.za

sales@solarpanelenergy.co.za

EXPECTED POWER GENERATION ON A CLEAR SUNNY DAY.

Total Eskom Units Uer Day	3.60
Total AC Power Per Day	3 600W
Add 20% Losses	720W
Total load Per Day With Losses	4 320W

Solar Panels Required	4 x 325 Watt	
Solar Panel Watts Required	781 Watts	
Actual Solar Watts	1 300 Watts	
Batteries Required	2 x 50Ah	
Battery Power Available @ 80% DOD	3 840W	

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	781Wp
Actual Solar Array Wp	1 300Wp
Solar Panels in Series	
Solar Panels in Parallel	2

Battery sizing	
Days Autonomy (Days of Storage)*	1.00
Max Depth of Discharge (%DOD) *	80%
% Capacity left in battery *	20%
Min Battery Capacity Required (Ah@C24)	98Ah
Battery Nominal Voltage per Block	48V
Input Capacity of Battery (Ah@C24)	50Ah
Actual (Selected) Battery Capacity	100Ah
Batteries Bank	2
Quantity Batteries Needed	2

Country: Location:

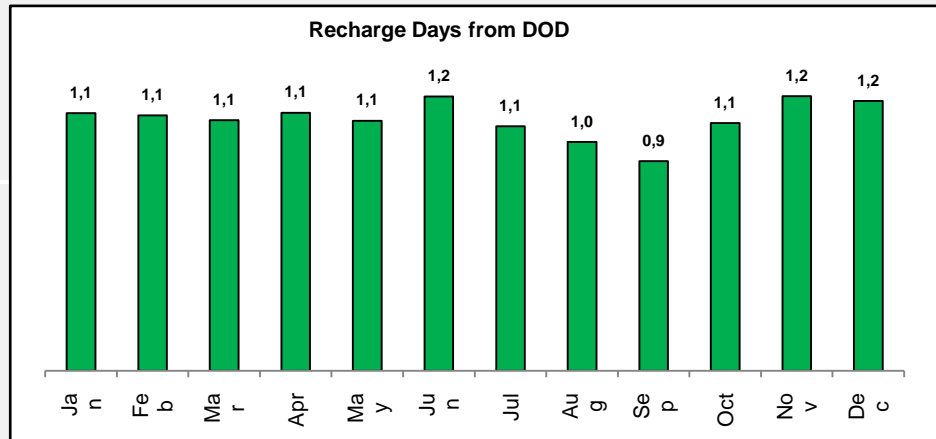
Location	
Latitude	-26
Longitude	28
Elevation (m)	1 742

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

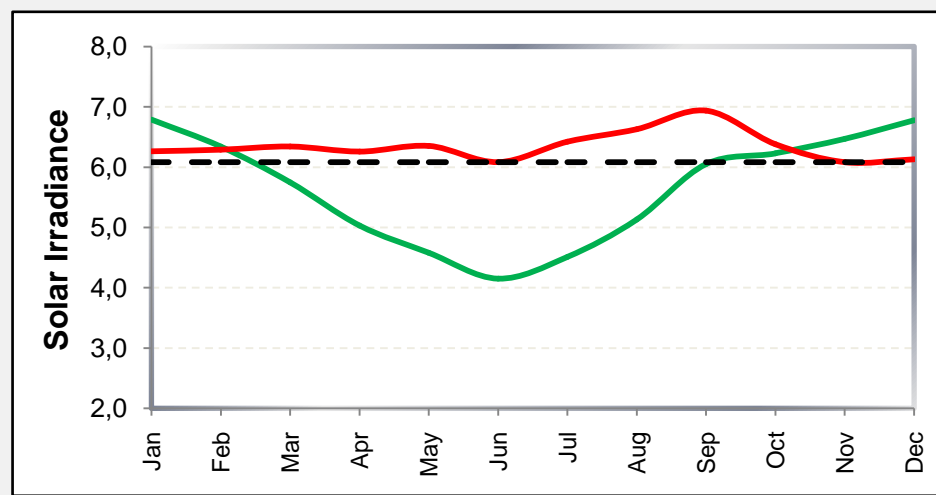
Irradiance		
Max	Min	Selected
6.94	6.08	6.08

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

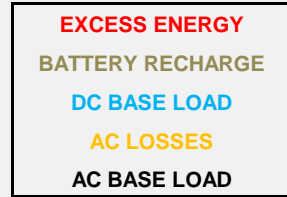
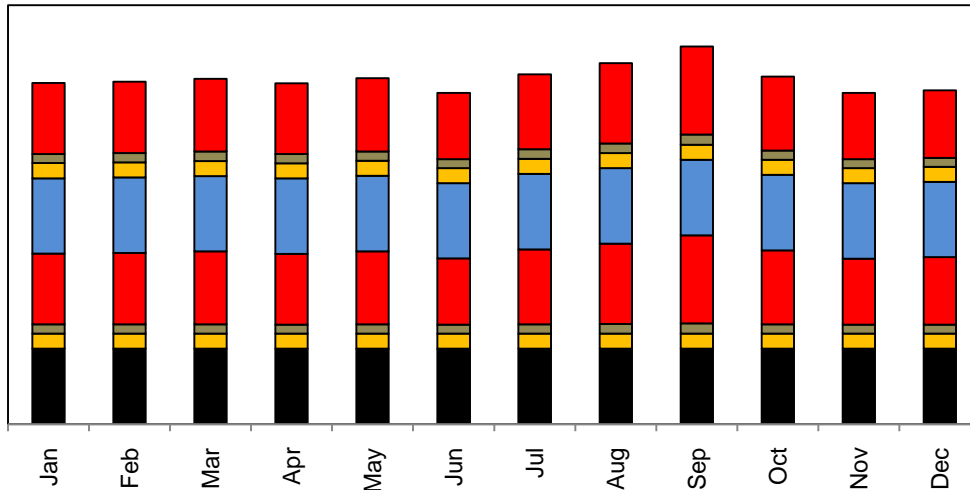


Excess Energy Per Annum	
Without Batt Recharge	1 273KWp
With Battery Recharge	1 343KWp



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:

- 04 X 325Wp Solar Panels
- 01 X Axpert MKS 5KW 80A MPPT 48V Solar Inverter
- 02 X Pylon US2000B Plus 2.4kWh Li-Ion Battery (excl. brackets)
- 01 X Cable Pack for US2000B Batteries
- 04 X Brackets - Pylon US2000B (2 sets)
- 01 X Fuse-switch-disconnector KETO size 00 body (battery isolator)
- 03 X MC4 Single Cable Connector (Male + Female)
- 02 X 80A Jean Muller Fuse
- 01 X 4 String Combiner Box
- 02 X MC4 T Branch Connector (Male + Female)
- 25m X 6.0mm Red Solar wire
- 25m X 6.0mm Black Solar wire
- 02 X 6m Galvanized Rail
- 24 X PowAR Snap 90* Clips for rails



6000 cycles @ 80% DOD