



DEEPA SOLAR SYSTEMS PRIVATE LIMITED

#4,80ft ring road next to BDA complex ,Nagarabhavi,Bangalore,

WWW.deepasolar.com,Ph:08023188484

SOLAR- OFF GRID POWER PLANT

Deepa's offer of a Great Green Living which feels Great!!!



Solar power plant is based on the conversion of sunlight into electricity, either directly using photovoltaic(PV) and tracking systems to focus a large area of sunlight into a small beam. Photovoltaic converts light into electric current using the photoelectric effect.

The term **off-grid** refers to not being connected to a grid, mainly used in terms of not being connected to the main or national electrical grid. In electricity, off-grid can be stand-alone systems (SHS) or mini-grids typically to provide a smaller community with electricity. Off-grid electrification is an approach to access electricity used in countries and areas with little access to electricity, due to scattered or distant population. In situations where grid parity has been reached, it becomes cheaper to generate one's own electricity rather than purchasing it from the grid.

Check out for some of our solar PV installations. We have installed off-grid solar power generating systems ranging from 1KW to 150 KW. Our 150 KW off - grid solar power system is one of the biggest off-grid power plant in Belgaum. Deepa Solar's Off-grid Power Plants are not only green but also economical . It is the best outlay opposed to escalating fuel and grid charges.



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Features

- Single phase / Three phase pure sine wave AC output
- Hybrid System for uninterrupted power supply
- Remote Monitoring System
- Roof top / Ground Mountable

Application Areas

- Rural Hamlets
- Hospitals
- Bungalows
- Educational Institutions
- Government Offices
- Commercial Establishments
- Petrol Pumps
- Construction Companies
- Workshops
- R&D Laboratories
- Water Pumps
- Community Centers





Green & Reliable

1 KWp Off-grid Solar Power Plant can generate approximately 4-5 units in normal sunny day.

Space required for installation of 1 KWp system is approximately 100 sq ft/KWp

Off-grid Solar Power Plant can reduce CO₂ emission by tons per year.

SALIENT FEATURES OF OFF-GRID SOLAR POWER PLANTS

Optimized and Low maintenance system

Provide stable and reliable power increases overall efficiency of electronic components.

Export quality modules warranted for 25 Years

True MPPT (maximum power point tracking) charge controller to efficiently convert the power generated at module level.

Smart electronics to effectively manage usage of solar power based on load requirements. High efficiency inverters capable of supplying load directly (in the day time) without storing in the batteries all the time.

Tubular/SMF/VRLA deep discharge batteries designed for longer life

Mounting frame with seasonably adjustable tilt angle which is expected to give additional 6 % increase in power output.

DC cables and junction boxes designed to minimize power loss.

Galvanized steel structure design by professional structure consultant is utilized for longitivity and robustness.



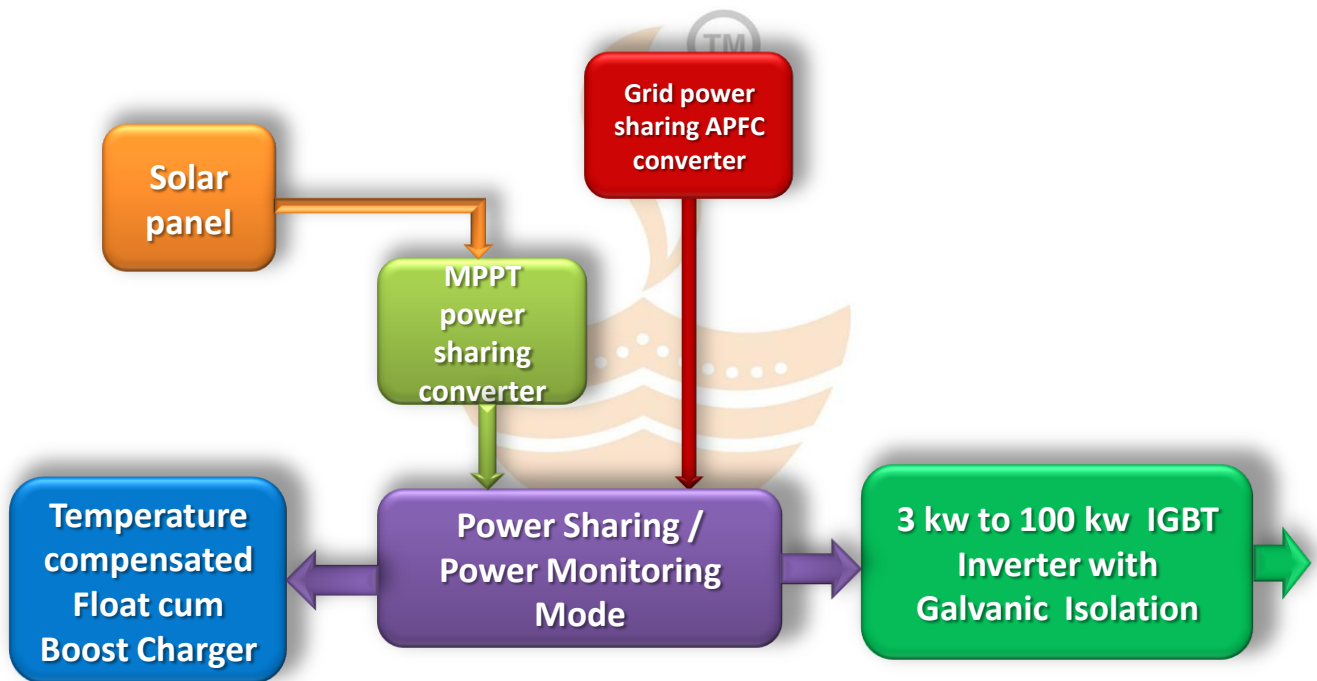
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BLOCK DIAGRAM & TECHNICAL SPECIFICATION HYBRID SOLAR PCU 3 - 100 Kw

Hybrid PCU input active power factor correction as per ieee-519 standard, solar power input & wind power Input – hybrid PCU with single phase output and three phase output & load reactive power compensation .





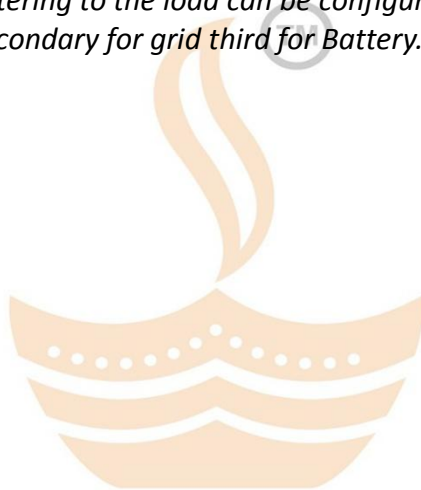
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Main Features

- *Load sharing between solar, Battery, Grid, Wind & DG.*
- *100 % Utilization of solar power using Power sharing MPPT Converter and solar PCU.*
- *Industrial Grade IGBT inverter with complete Galvanic Isolation (Three phase output – Three phase single Delta Star Transformer)*
- *High Efficiency Temperature compensated flat cum boost charger for extended battery life.*
- *Parallel operation for Solar, Battery and Grid.*
- *Load side Reactive power compensation Ensures Additional output load can be used.*
- *Solar PCU module utilizes the entire power available from solar and in the event of short-fall in power availability from solar the mains power is drawn to compensate the deficit of power.*
- *Power sharing in PCU for catering to the load can be configured as per our requirement. Example Solar primary source and secondary for grid third for Battery.*





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TECHNICAL SPECIFICATION HYBRID SOLAR PCU 1 - 100KW

Description	Specification
Hybrid PCU Rating (kw)	3kW-100kW
MPPT Power sharing Converter	IGBT Based Active Double Boost Maximum power Tracking Converter Panel DC 120 VDC to 800VDC.
Input (Rectifier)	Active power factor correction > 0.99 with IGBT Based with power sharing configuration.
1. Nominal AC Input Voltage	3 Phase 400 V AC + Neutral + Earth
2. Line Low / High Range	320 V AC – 480 V AC
3. Frequency Range	45 Hz to 55 Hz
4. Power factor	>0.99 @ Full load
5. Efficiency (AC- DC)	>97% @ full load
Solar power / Solar Panel	IEC 61215 Edition-1-2, IEC 61730-1 part-2, & UL 1703 Approved panels
1. Solar panel voltage@ max -Vmp (V)	250w/36vdc. 280w/36vdc. 300w/36vdc. 350w/36vdc
2. Solar panel current @max-Imp (I)	7.22A / 7.77A / 8.33A / 9.72A
3. Solar panel power	250 w / 280 w / 300 w /350w any one series parallel combination
Wind power (optional)	With power sharing mode
1.Wind Turbine DC Current	240 VDC to 480 VDC
2. Wind Turbine DC Current	20A to 32A
3. Wind DC Power	5kw to 7.5kw
Output (PCU)	PWM Technology with IGBT Based / H bridge. open delta/ star transformer.
1.Voltage	3 Phase 380 -400-415 VAC + Neutral
2. Frequency (Free running)	50 Hz ± 0.1 %
3. Output Waveform	Pure Sine Wave
Communication Interface	
Standard	RS232 Port for Software Interface Optional
SNMP interface	Optional



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GSM Communication with PCU	Optional
General	
1.Operating Temperature	0 Deg to 40 Deg. C
2.Humidity	20 % to 95 %
3.Noise Level	< 55 dB @ 1 Meter
4.Indication –LED	Mains On, PCU On, PCU On Battery, Load On PCU, Load On Battery, Faulty Condition, Over Temperature
5.LCD Display	Input voltage R, Y, B. Input Frequency, Output voltage R,Y,B. Output current R, Y,B. Output frequency, Battery Voltage, Solar Panel Voltage Solar panel current ,Battery charging discharging,
6.Audible Alarm	Mains Failure Alarm, Low Battery pre Alarm , Over Load, PCU Over
7.PCU Protection	Current Advanced Electronic Protection for Input over Voltage, Under Voltage, Device Safety backed with MCBs, Semiconductor Fuse, Soft Start Feature for Rectifier and PCU converter , Battery Current Limiting Protection, built in over load protection, IGBT Short Circuit Protection for Rectifier and Inverter
8.Standards	IEC 61215 Edition-1-2, IEC 61730-1 part-2, & UL 1703. IEEE-519.



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