Small Solar System

Now it is our great pleasure to present our newly designed product-----Portable Solar Generator Systems.This series of solar panel capacity is from 40Wp to 160Wp that can generate power from 100W to 500W, please refer to the product photos below :

Product Application field: Conservation areas, remote homes, solar pumps, solar fans/TVs, small house generator system, caravan parks, farm tracks, yards, car parks, industrial buildings, airfields, adaptable for other applications e.g. road sign, illumination, harbor lighting, shore-based navigation lighting, and so on.

These are the products:

40W System

80W System

Product Specifications:

Model	Solar panel with brackets	Solar Charge Controller	Converter	Solar GEL Battery with casing	Partable Trailer	Packing Size(cm)	G.W.(Kg)
SPG-01	12V 40Wp	12V 5A	200W	12V 45Ah x1	Included	115x32x54cm 30x65x10cm	60
SPG-01A	12V 40Wp	12V 5A	No	12V 45Ah x1	Included	115x32x54cm 30x65x10cm	55
SPG-02	12V 60Wp	12V 5A	300W	12V 70Ah x1	Included	115x32x54cm 55x50x10cm	70
SPG-02A	12V 60Wp	12V 5A	No	12V 70Ah x1	Included	115x32x54cm 55x50x10cm	65
SPG-03	12V 80Wp	12V 10A	400W	12V 100Ah x1	Included	130x40x60cm 70x60x15cm	100
SPG-03A	12V 80Wp	12V 10A	No	12V 100Ah x1	Included	130x40x60cm 70x60x15cm	95
SPG-04	12V 100Wp	12V 10A	500W	12V 120Ah x1	Included	130x40x60cm 80x60x15cm	130
SPG-04A	12V 100Wp	12V 10A	No	12V 120Ah x1	Included	130x40x60cm 80x60x15cm	120
SPG-05	12V 160Wp	12V 10A	1000W	12V 200Ah x1	Included	150x50x60cm 130x60x20cm	130
SPG-05A	12V 160Wp	12V 10A	No	12V 200Ah x1	Included	150x50x60cm 130x60x20cm	120

1. Solar Panel: Mono Crystalline Type, Guarantteed for 25 Year Opertation

2. Solar GEL Battery: The battery is designed for high efficency of input and output, optimized for charge and discharge, with 5 years guarantee.

3. Systerm Input: This system can work both with Solar Panel and Wind Turbine, and Wind Turbine is not included.

4. System Output: This system can supply a power of 220V/50Hz or 110V/60Hz AC Load together with 12V DC or 24V DC

5. Customer Customized Design is Welcome

6. Sample Delivery: We could only ship by air and courier the unit without Solar GEL Battery since this type of batteries is banned by air shipping company

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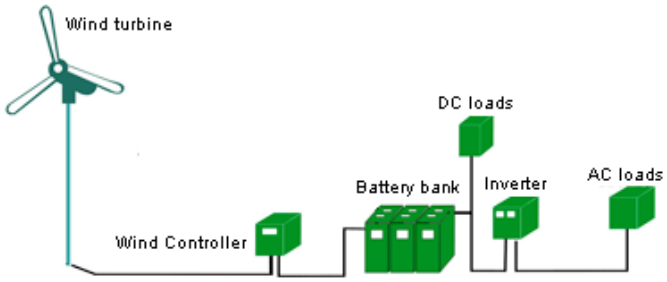
7. Shipment: 30 days after receipt of confirmed order

8. Payment Term: T/T or L/C

Small Scale Wind System

A wind turbine, which is installed on top of a tall tower, collects kinetic energy from the wind and converts it to electricity that is compatible with a home"s electrical system.
In a normal residential application, a home is served simultaneously by the wind turbine and a local utility. If the wind speeds are below cut-in speed (7-10 mph) there will be no output from the turbine and all of the needed power is purchased from the utility. As wind speeds increase, turbine output increases and the amount of power purchased from the utility is proportionately decreased. When the turbine produces more power than the house needs, the extra electricity is sold to the utility. All of this is done automatically. There are no batteries in a modern residential wind system. Small wind systems for remote applications operate somewhat differently.
Most small turbines have very few moving parts and do not require any regular maintenance. They are designed for a long life (up to 20 years) and operate completely automatically.

The system diagram as follow:



System includes:

1. Wind turbine: which is installed on top of a tall tower,collects kinetic energy from the wind and converts it to electricity that is compatible with a home"s electrical system.

2. Wind controller:

3. Battery bank: can be a single battery or multiple batteries connected together to create essentially one large battery of the required voltage and amp-hour capacity.In some ways the battery configuration and capacity are the most important electrical power decision to make, and a wise choice can help guarantee a steady supply of electrical power as well as a system that is simple to operate and maintain.

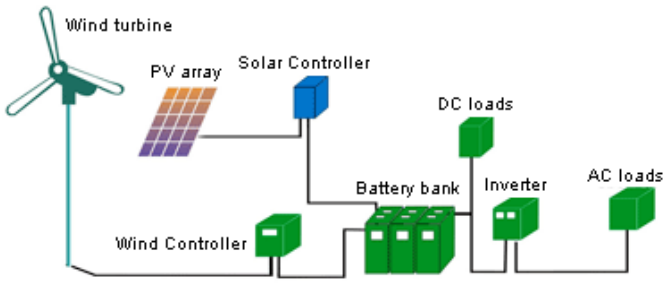
4. Inverter: A power converter that "inverts" the DC power from the panels into AC power.The characteristics of the output signal should match the voltage, frequency and power quality limits in the supply network.

5. loads: Stands for the network connected appliances in the building that are fed from the inverter(AC loads),or from the battery bank(DC loads).

Wind/Solar hybrid System

Hybrid Systems - Utility Connected with Battery Backup:??A combination of the above systems, these applications have the advantages of both.They are connected to the utility grid in case the weather is insufficient for the solar or wind system, but they also have batteries to store electricity in case the utility grid goes down as well.The design and installation of these systems is more complicated and expensive,but they are the most effective in providing constant,reliable electricity.

The system diagram as follow:



System include:

1. PV Array: A number of PV panels connected in series and/or in parallel giving a DC output out of the incident irradiance. Orientation and tilt of these panels are important design parameters, as well as shading from surrounding obstructions.

2. Wind turbine: which is installed on top of a tall tower, collects kinetic energy from the wind and converts it to electricity that is compatible with a home"s electrical system.

3. Solar controller: control battery bank charge and discharge reasonable and safety.

4. Wind controller:

5. Battery bank: can be a single battery or multiple batteries connected together to create essentially one large battery of the required voltage and amp-hour capacity. In some ways the battery configuration and capacity are the most important electrical power decision to make, and a wise choice can help guarantee a steady supply of electrical power as well as a system that is simple to operate and maintain.

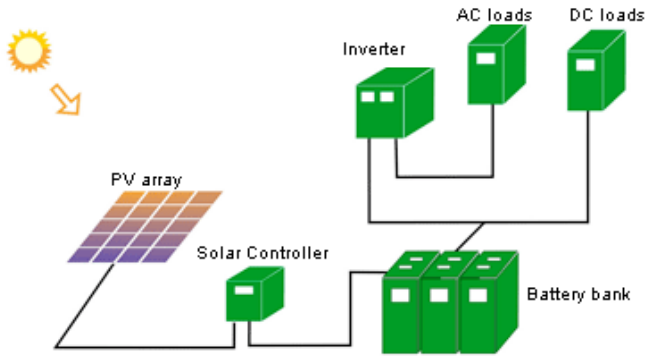
6. Inverter: A power converter that "inverts" the DC power from the panels into AC power.

7. loads: Stands for the network connected appliances in the building that are fed from the inverter(AC loads), or from the battery bank(DC loads).

STAND ALONE PV SYSTEM

Stand-alone systems are independent from the utility grid,avoiding the possibility of losing power when the grid goes down.Electricity from stand-alone systems are used on site,such as an RV or cabin.Power that is generated can be stored in batteries and used at night or on sunless days. A generator may also be used for back-up.For PV applications,the size of a stand-alone system is usually up to 50kW.

The system diagram as follow



System includes:

1. PV Array: A number of PV panels connected in series and/or in parallel giving a DC output out of the incident irradiance. Orientation and tilt of these panels are important design parameters, as well as shading from surrounding obstructions.

2. PV controller:control battery bank charge and discharge reasonable and safety.

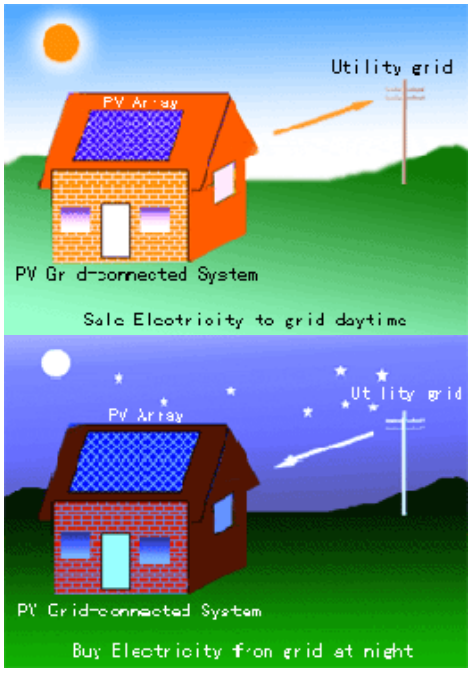
3. Inverter: A power converter that "inverts" the DC power from the panels into AC power.The characteristics of the output signal should match the voltage,frequency and power quality limits in the supply network.

4. Battery bank: can be a single battery or multiple batteries connected together to create essentially one large battery of the required voltage and amp-hour capacity.In some ways the battery configuration and capacity are the most important electrical power decision to make, and a wise choice can help guarantee a steady supply of electrical power as well as a system that is simple to operate and maintain.

5. Loads: Stands for the network connected appliances in the building that are fed from the inverter, or, alternatively, from the grid.

Grid-connected PV system

In photovoltaic solar energy systems, light is converted into electrical energy that is used immediately or stored. In a grid connected photovoltaic system, the generated direct current is transformed into an alternating current that can be used in the house immediately. In case of a??remainder of energy, it can be delivered into the grid.



Grid connected system avoid the need for electricity storage in batteries by essentially using the utility as a battery system. When your solar or wind system produces more electricity than you need, the excess is sold back to the utility.When your system doesn"t

produce enough electricity,you can draw power from the grid.All this is done automatically through a net metering or net billing program.In most cases,a special or second utility meter will be added to keep track of how much electricity has been sold to the utility.??

Advantages of utility interconnection include having access to standard AC power all of the time,not just when your system produces electricity,and avoiding the cost of a battery back-up system.A disadvantage is the utility interconnection fee,which varies with each utility.The size of a utility connected project depends on how much of your electric consumption you want to displace and how much money you are able to invest.

Grid Connected PV system design has the following components:

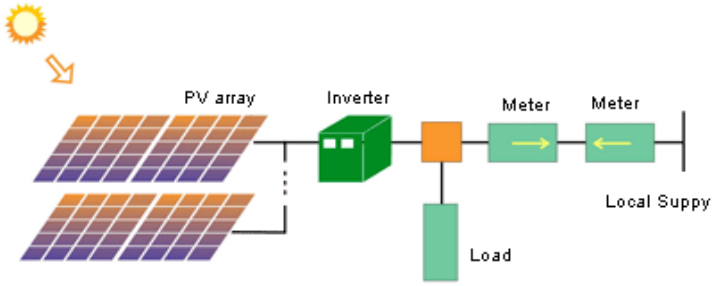


Fig.1. Single inverter Grid Connected System.

1. PV Array or Generator: A number of PV panels connected in series and/or in parallel giving a DC output out of the incident irradiance. Orientation and tilt of these panels are important design parameters, as well as shading from surrounding obstructions.

2. Inverter: A power converter that ?°inverts?± the DC power from the panels into AC power. The characteristics of the output signal should match the voltage, frequency and power quality limits in the supply network.

3. Loads: Stands for the network connected appliances in the building that are fed from the inverter, or, alternatively, from the grid.

4. Meters: They account for the energy being drawn from or fed into then local supply network.

5. Local Supply Network: A single or three-phase network managed by a Public Electricity Supplier. The supply network acts both as a sink for energy surplus in the building or as a backup for low local generation periods.