

Sunmodule®

For off-grid solutions



solarworld.com





Bringing electricity where you didn't think possible

In remote, rural areas, where there is no grid to connect to, solar electricity is the answer. Off-grid solar electric systems provide an affordable, clean and uninterrupted source of energy that allow for critical power to be supplied anywhere in the world. These off-grid systems can be used for a wide range of applications starting from powering a basic light bulb to supplying power for an entire village or even large-scale telecommunications systems.

SolarWorld Sunmodule panels, together with our global network of systems integrators and installers, provide the highest quality off-grid solar systems in the world. Our long-lasting partners are key to our success – in fact, some of our partners have been with us for 30 years.

THE SOLARWORLD OFF-GRID SUNMODULE ADVANTAGE

Not all off-grid modules are created equal. We have designed and manufactured these modules for optimal performance in off-grid applications. Since 12 V batteries are commonly used in off-grid systems we have designed our Sunmodule panels to optimize charging these batteries. When using batteries with higher voltages such as 24 V or 48 V, 2 or 4 Sunmodule panels can be connected in series to generate the optimum battery charging voltage. Higher power systems can be achieved by connecting strings in parallel to reach the required number of modules. If using a maximum power point tracking (MPPT) charge controller, you can use any of SolarWorld's Sunmodule panels in your off-grid project.





SW 80 off-grid

Remote applications

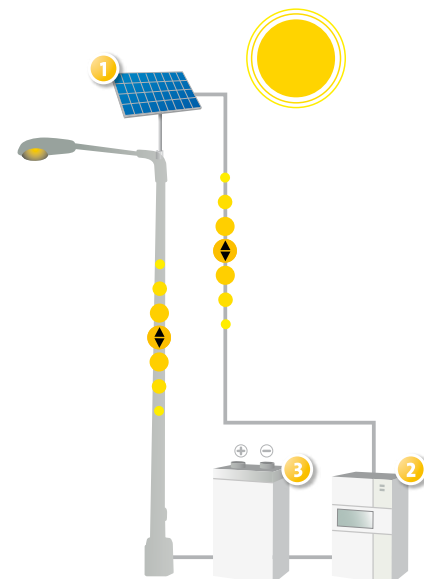
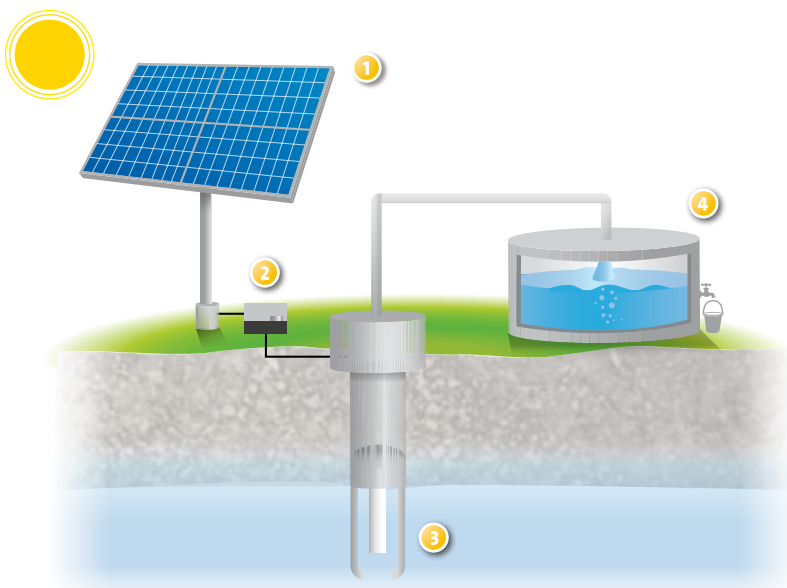
Access to clean drinking water and lighting are two of the greatest challenges for many remote villages and towns. Solar power systems can provide this access by using solar-powered water pumps and purification systems. These off-grid systems are simple to design and install and often do not require batteries for electrical storage. As seen in the diagram below, the amount of water needed on a daily basis is pumped into a tank during daylight hours where it is stored until consumed. A small system can also be used to power street lights by adding a small battery and charge controller to provide light and safety for travelers on remote roads.

WATER PUMPING SYSTEM EXAMPLE

Daily water consumption	Well head	Total pumping height
5 m ³ (177 ft ³)	40 m (131 ft)	45 m (148 ft)

LIGHTING SYSTEM EXAMPLE

Power consumption	Daily
30 W	12 hrs



1 Sunmodule 2 Control unit 3 Solar water pump 4 Water reservoir

1 Sunmodule 2 Charge controller 3 Battery



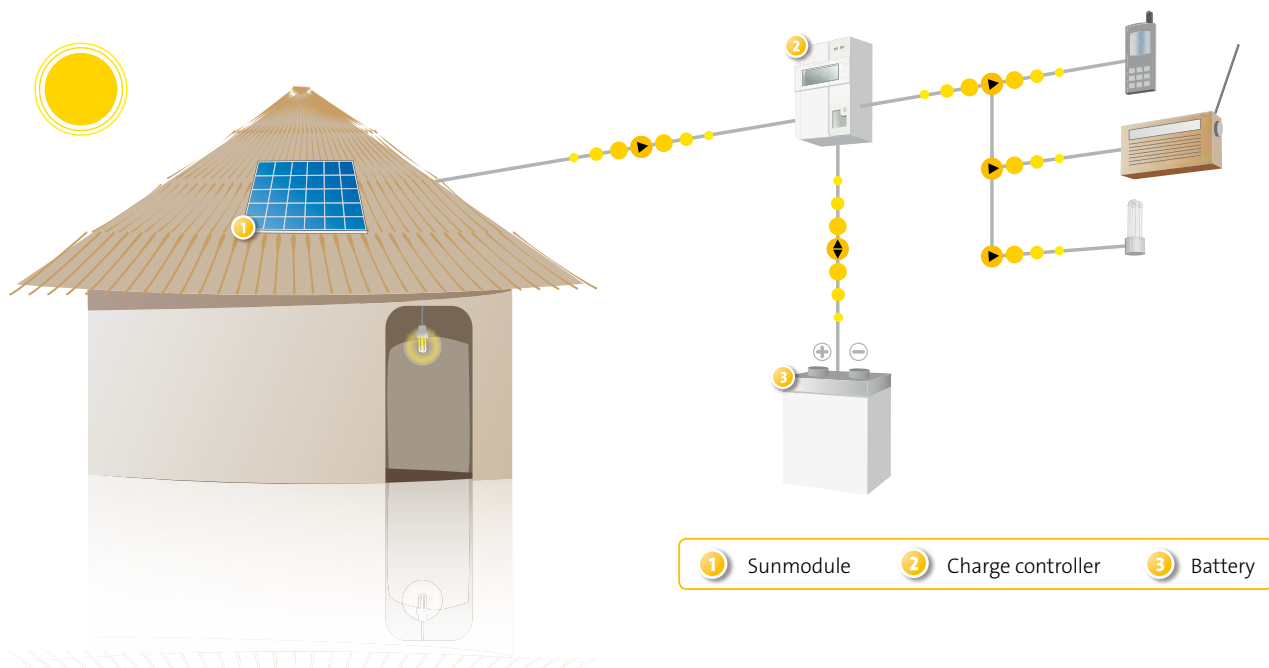
SW 50 off-grid

Small off-grid homes

Small homes in remote locations can now be equipped with some modern conveniences. A small-scale off-grid solar system can provide a reliable and continuous energy supply that can be more economical than a grid connection if it is available. The example below shows a system using a Sunmodule SW 50 panel, a charge controller and a battery. Thousands of these types of systems have been installed around the world and provide critical power for safety, lighting and communications.

SOLAR HOME SYSTEM EXAMPLE

Consumer	Power consumption	Qty.	Daily running hours
Lighting	9 W	2	4
Radio	15 W	1	4
Cell phone charger	8 W	1	2



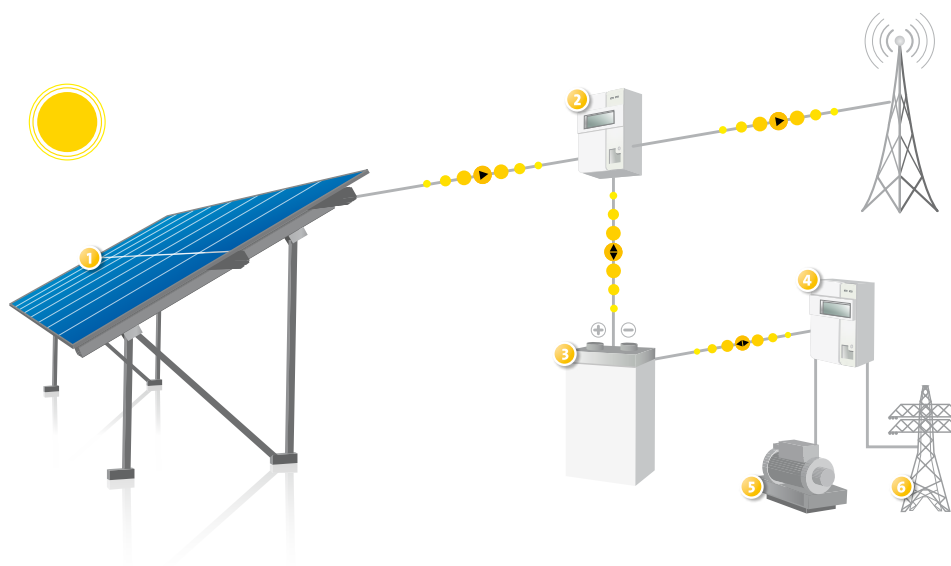


Telecommunications

Telecommunication companies often run into challenges when trying to provide coverage to remote and rural locations where no grid is available to connect to for powering their transmitters. With a medium to large-scale off-grid system, telecom providers can deliver reliable, continuous service to any remote area. These systems can be designed to operate completely off-grid or as a reliable hybrid system tied to the grid as shown below. SolarWorld has been supplying reliable off-grid solar systems to telecom providers for 35 years.

TELECOM SYSTEM EXAMPLE

Consumer	Power consumption	Daily running hours
Transmitter station	1000 W	24



- | | | |
|--------------------|---------------------|----------------|
| 1 Sunmodule | 2 Charge controller | 3 Battery bank |
| 4 Inverter/Charger | 5 Genset | 6 Public grid |

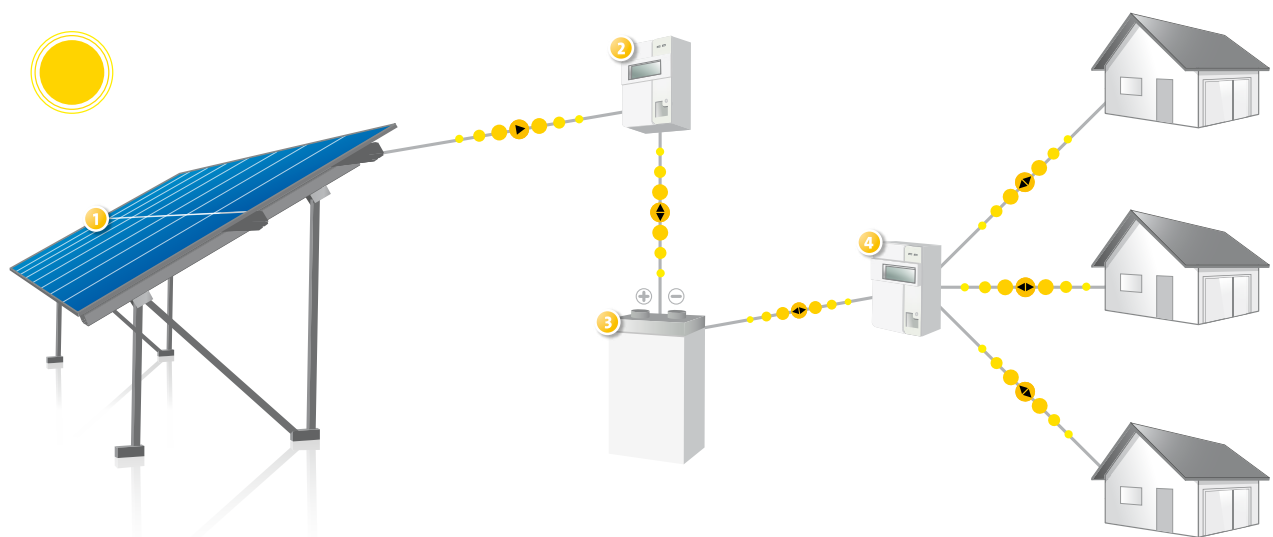


Power for the entire community

The sun shines brightly on many rural communities, however, they can't get access to electricity because there is no grid nearby. Those communities can turn that sunlight into electricity by using a central off-grid system to provide power that can be shared by everyone. The example below shows the Sunmodule SW 135 panels supplying energy to a small village.

RURAL POWER SUPPLY SYSTEM EXAMPLE

Consumer	Power consumption	Daily running hours
Rural Community	1000 W	24



- 1 Sunmodule
- 2 Charge controller
- 3 Battery bank
- 4 Inverter/Charger (optional)



TECHNICAL DATA SW 50 OFF-GRID

Model	50 Wp	P _{max}	SW 50 Poly RMA
V _{oc}	22.1 V	I _{sc}	2.95 A
V _{mpp}	18.2 V	I _{mpp}	2.75 A
Length	680 mm (26.8 in)	Cells per module	36
Width	680 mm (26.8 in)	Cell type	Poly crystalline
Height	34 mm (1.34 in)	Cell dimensions	62 mm x 156 mm (2.44 in x 6.14 in)
Frame	Aluminum	Power tolerance	+/-10%
Weight	5.6 kg (12.3 lb)		

TECHNICAL DATA SW 80 OFF-GRID

Model	80 Wp	P _{max}	SW 80 Poly RNA
V _{oc}	21.9 V	I _{sc}	4.78 A
V _{mpp}	17.9 V	I _{mpp}	4.49 A
Length	958 mm (37.7 in)	Cells per module	36
Width	680 mm (26.8 in)	Cell type	Poly crystalline
Height	34 mm (1.34 in)	Cell dimensions	94 mm x 156 mm (3.7 in x x 6.14 in)
Frame	Aluminum	Power tolerance	-5/+10%
Weight	7.6 kg (16.76 lb)		

TECHNICAL DATA SW 135 OFF-GRID (also available in 130 and 140 Wp)

Model	135 Wp	P _{max}	SW 135 Poly R6A
V _{oc}	21.9 V	I _{sc}	8.16 A
V _{mpp}	17.7 V	I _{mpp}	7.69 A
Length	1508 mm (59.4 in)	Cells per module	36
Width	680 mm (26.8 in)	Cell type	Poly crystalline
Height	34 mm (1.34 in)	Cell dimensions	156 mm x 156 mm (6.14 in x 6.14 in)
Frame	Aluminum	Power tolerance	+/-5%
Weight	11.8 kg (26.01 lb)		





Benefits at-a-glance

» World class quality

SolarWorld produces the best products with the highest quality, manufactured according to US quality standards in fully-automated ISO 9001 and 14001 certified factories. SolarWorld manufacturing is fully vertically integrated, turning raw silicon into finished panels.

» An experienced industry leader

With over 35 years of experience in off-grid solar applications – 30 years in Latin America – SolarWorld delivers top products and technical experience at the highest levels. Our modules are installed in over 100,000 Telecom/Industrial systems worldwide. Nobody else comes close.

» World's greenest solar manufacturer

The Silicon Valley Toxics Coalition named SolarWorld the greenest manufacturer in 2011. SolarWorld manufactures to the highest environmental and employment standards.

» Certification



- Qualified, IEC 61215
- Safety tested, IEC 61730
- Periodic Inspection



Pending

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