

Sunmodule®

For off-grid solutions



www.solarworld.com

We turn sunlight into power.



Mali · Hospital electrification



Botswana · Solar home system



SW 50 poly RMA

Supplying off-grid areas with electricity

Rural areas often do not have access to an electrical grid. And even when rural and urban communities do enjoy a grid connection, they may still suffer from random black-outs or regular power cuts – particularly in the developing world. In contrast, power solutions based on SolarWorld’s Sunmodules provide an affordable, clean and uninterrupted energy supply. Together with our worldwide network of system integrators and installers we are able to design, build, operate and maintain off-grid systems around the globe. Partnerships with our system integrators reach back as far as 30 years now. Sunmodules from SolarWorld can cover all kinds of energy demands, from basic lighting with only one module to large-scale professional power projects.

SOLAR MODULES FOR OFF-GRID APPLICATIONS

The advantage of our off-grid modules is that they are perfectly matched to the other components required for off-grid systems. A 12 V battery is best charged by a solar module with 36 crystalline solar cells. This is why all our Sunmodules for off-grid applications have exactly this number of cells built inside. For higher battery voltages of 24 V or 48 V, simply connect 2 or 4 Sunmodules in series to automatically generate the optimum battery charging voltage. Higher system power can be achieved by connecting strings in parallel to reach the required number of modules. Of course, with maximum power point tracking (MPPT) charge controllers you can use any of SolarWorld’s Sunmodules in off-grid applications.



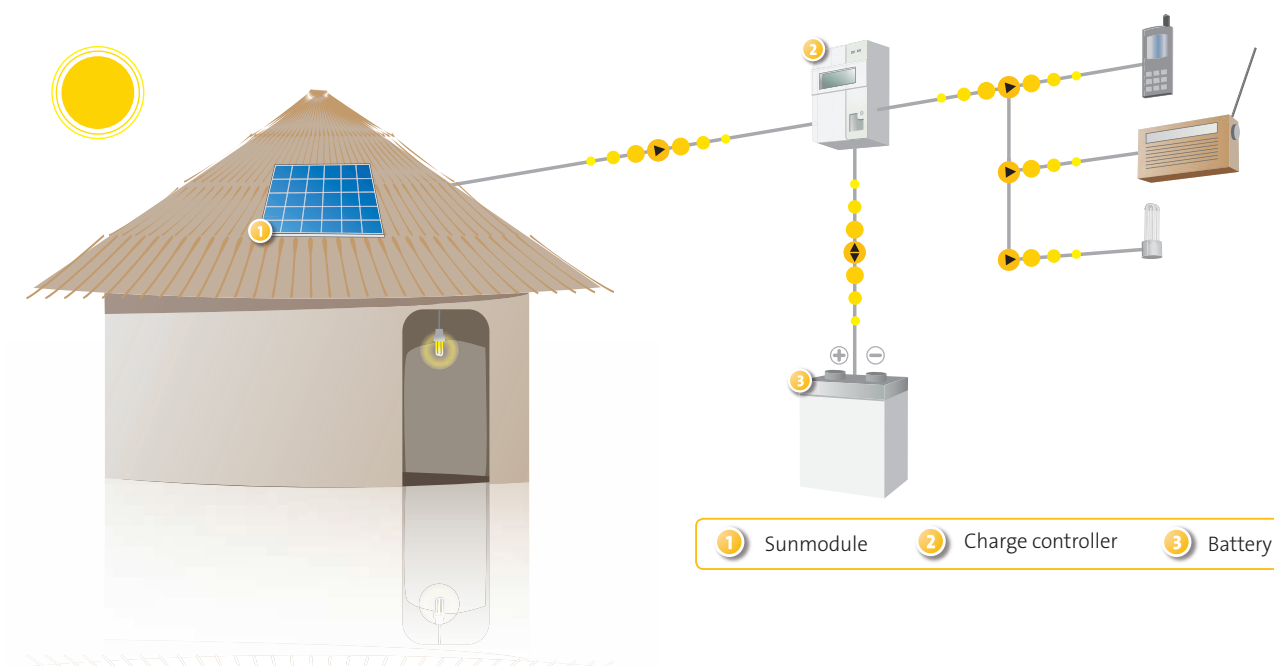
Mali · Hospital electrification

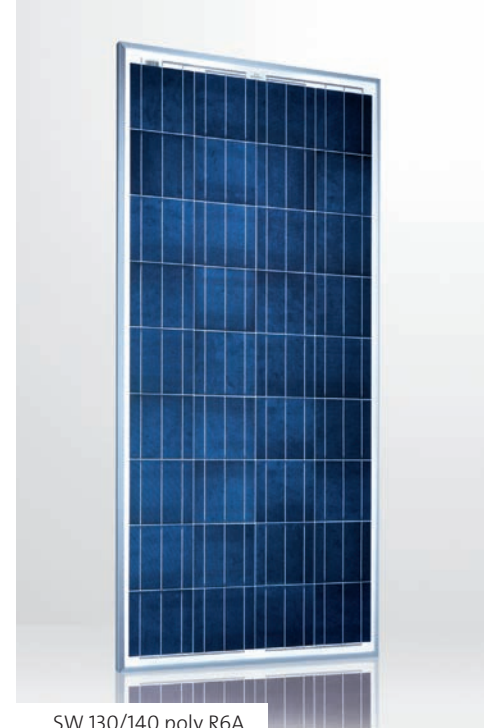
Small-scale off-grid systems

Two billion people living in rural areas lack access to the national electrical grid. These people mostly live in areas that are impossible to connect to a public grid. In many cases, a connection to the national grid is too expensive due to long transmission distances and the resulting costs. Small-scale off-grid systems are an economical alternative to a grid connection and provide people in remote locations with a reliable and continuous energy supply. The example shows a system consisting of the Sunmodule SW 50 poly RMA, a charge controller and a battery. Thousands of rural homes and shops have been equipped with such systems and the owners can now light their homes or shops and charge their cell phones, power their radios or similar appliances.

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





SW 80 poly RNA

Kenya · Water pumping project

Yunnan · Village electrification

Brazil · Telecom system

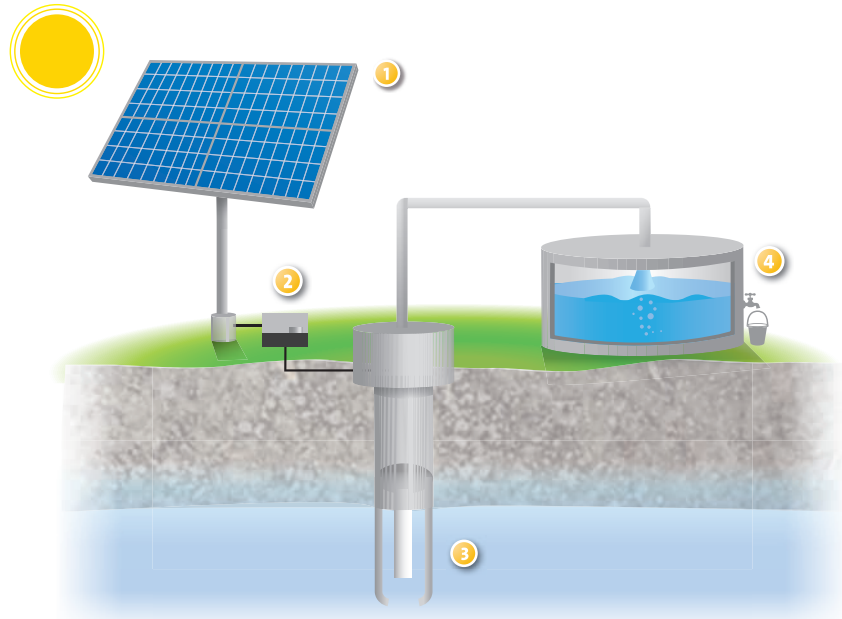
SW 130/140 poly R6A

Water pumping and purification systems

Access to clean drinking water is the most basic human need and solar-powered water pumps and purification systems can help to provide it. These are very simple off-grid systems, as they generally do not require an electrical storage device such as a battery. Instead, the daily amount of water needed is pumped into a tank, where it is available day and night. SolarWorld's Sunmodules, e.g. the SW 80 poly RNA shown above, can be connected to special solar water pumps. Such pumps are compatible with a wide range of input parameters and can therefore be connected directly to solar modules.

WATER PUMPING SYSTEM EXAMPLE

Daily water consumption	Well head	Total pumping height
5 m ³	40 m	45 m



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

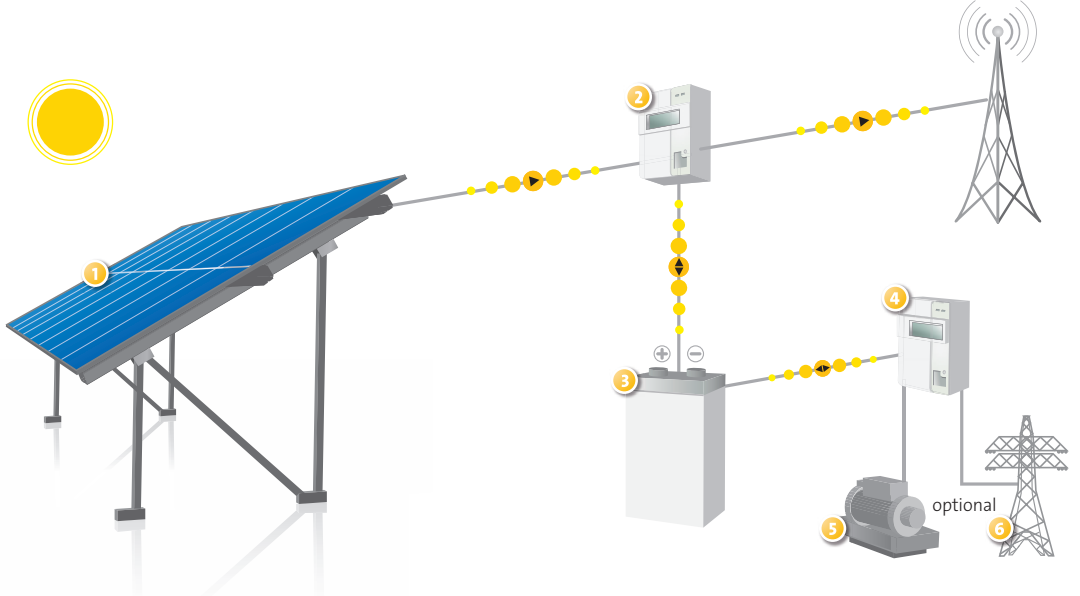
Medium to large-scale off-grid systems

Imagine being able to power an entire rural village with clean solar energy. The technology to make it happen has not only arrived – it has been around for years. Industrial applications can also benefit from this kind of solar technology. The example shows our Sunmodule SW 130/140 poly R6A supplying energy to a telecom company's remote cell phone transmitter station. In providing energy to telecom applications highest standards regarding quality and reliability are required. People need to be able to make phone calls 24 hours a day, 365 days a year. Solar-powered energy supply systems have been proving their reliability in meeting these demands for around 30 years now.

TELECOM SYSTEM EXAMPLE

Consumer	Power consumption	Qty.	Daily running hours
Transmitter station	1000 W	1	24

A hybrid system, for example with a genset or the public grid could be integrated at locations with distinctive seasonal irradiation changes.



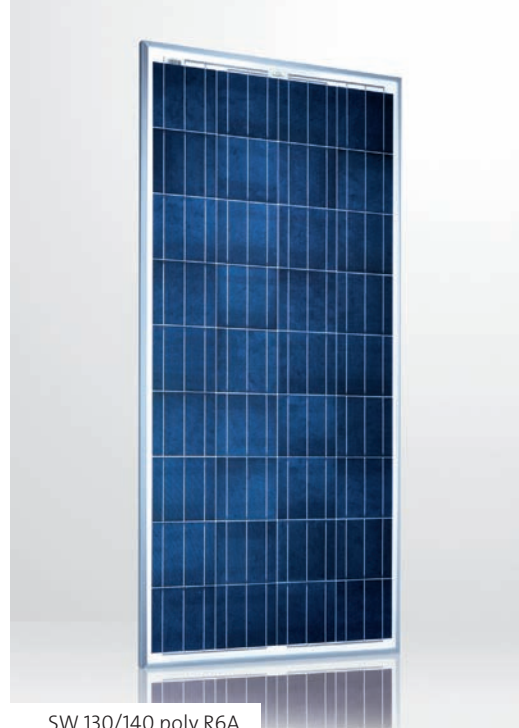
- 1 Sunmodule
- 2 Charge controller
- 3 Battery bank
- 4 Inverter/Charger
- 5 Genset
- 6 Public grid



SW 50 poly RMA



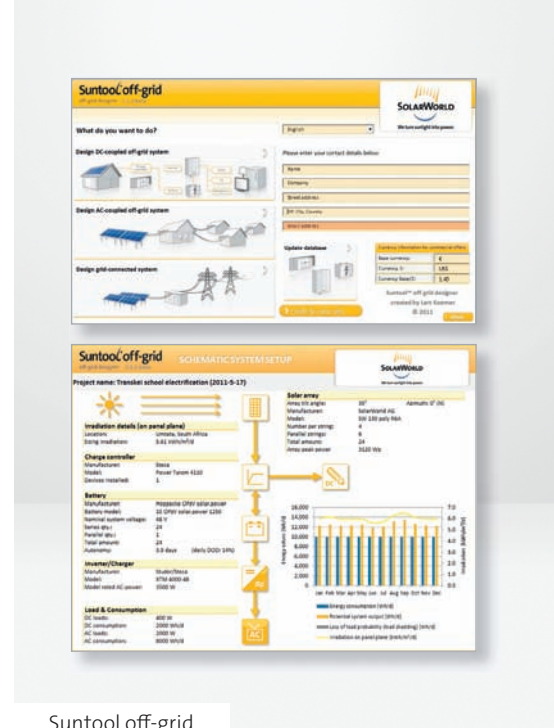
SW 80 poly RNA



SW 130/140 poly R6A



South Africa - School electrification



Suntool off-grid

Sunmodule[®] for off-grid applications

TECHNICAL DATA SW 50 POLY RMA

Pmax	50 Wp		
Voc	22,1 V	Isc	2,95 A
Vmpp	18,2 V	Impp	2,75 A
Length	680 mm	Cells per module	36
Width	680 mm	Cell type	Poly crystalline
Height	34 mm	Cell dimensions	62 mm x 156 mm
Frame	Aluminum	Power tolerance	+/-10%
Weight	5,6 kg		

TECHNICAL DATA SW 80 POLY RNA

Pmax	80 Wp		
Voc	21,9 V	Isc	4,78 A
Vmpp	17,9 V	Impp	4,49 A
Length	958 mm	Cells per module	36
Width	680 mm	Cell type	Poly crystalline
Height	34 mm	Cell dimensions	94 mm x 156 mm
Frame	Aluminum	Power tolerance	-5/+10%
Weight	7,6 kg		

TECHNICAL DATA SW 130/140 POLY R6A

Pmax	130 Wp / 140 Wp		
Voc	21,5 V / 22,1 V	Isc	7,99 A / 8,35 A
Vmpp	17,4 V / 18,0 V	Impp	7,49 A / 7,85 A
Length	1.508 mm	Cells per module	36
Width	680 mm	Cell type	Poly crystalline
Height	34 mm	Cell dimensions	156 mm x 156 mm
Frame	Aluminum	Power tolerance	+/-5%
Weight	11,8 kg		

Suntool[®] off-grid Professional off-grid system design software

Suntool off-grid makes designing off-grid systems a breeze. In fact, the application can help you create complex designs in a few minutes. You can choose between the recommended default settings or manually configure the design to best suit your needs. System designs range from one-module solar home systems to multi-cluster village electrification projects with several hundred kWp of installed module power. Suntool off-grid has everything covered, from built-in worldwide climatic data at the push of a button, to shading analysis and cable dimensioning. The unique, integrated energy efficiency evaluation tool even allows you to optimize the size and cost of your system by showing you the effects of energy demand saving measures. Suntool off-grid is available exclusively for our off-grid partners.

Suntool[®] off-grid product features

- » Automatic download of long-term, worldwide weather data
- » Automatic determination of the optimum tilt angle
- » Sizing of most common off-grid system types, including PV-genset-hybrid systems and Sunny Island systems
- » Basic sizing and yield estimation of grid-connected PV systems
- » Modifiable component database
- » Energy efficiency evaluation for optimizing system size and cost
- » Automatic generation of clearly arranged customer documents



Benefits at-a-glance

> World class quality

SolarWorld produces the best products with the highest quality, manufactured according to German and US quality standards in fully-automated ISO 9001 and 14001 certified factories.

> Award-winning products

SolarWorld's modules were rated by the ÖKO-TEST consumer magazine as "excellent".

> An experienced industry leader

With over 30 years of experience in off-grid solar applications – 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.

> Certification



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



SOLARWORLD AG

Martin-Luther-King-Str. 24
53175 Bonn
Phone: +49 228 559 20-0
Fax: +49 228 559 20-99
service@solarworld.de
www.solarworld.de



SOLARWORLD IBÉRICA

C/La Granja 15-Edif. B-1ºB
28108 Alcobendas, Madrid, Spain
Telefon: +34 91 490 5999
Telefax: +34 91 657 4968
info@solarworld.es
www.solarworld.es



SOLARWORLD FRANCE

ZI Bouchayer-Viallet
Hôtel d'entreprise
31, rue Gustave Eiffel
38000 Grenoble
Telefon: +33 43 821 00 54
Telefax: +33 43 821 00 59
service@solarworld.fr
www.solarworld.fr



SOLARWORLD AMERICAS

4650 Adohr Lane
93012 Camarillo
California
Phone: +1 805 388 6590
Fax: +1 805 388 6395
customerservice@solarworld-usa.com
www.solarworld-usa.com



SOLARWORLD AFRICA (PTY) LTD.

24th Floor, 1 Thibault Square
cnr. Lower Long Street /
Hans Strijdom Street
8001 Cape Town
South Africa
Phone: +27 21 421 8001
Fax: +27 21 421 8002
service@solarworld-africa.co.za
www.solarworld-africa.co.za



SOLARWORLD ASIA PACIFIC PTE LTD.

70 Bendemeer Road
Luzerne, #06-01
339940 Singapore
Phone: +65 6842 3886
Fax: +65 6842 3887
service@solarworld.sg
www.solarworld.sg

