

## SunSaver Grid-Tie FAQ



**Q.**

**How does it work?**

**A.**

This system consists of a “string” of Solar PV modules installed in series to a highly efficient SMA Inverter. The inverter converts the DC power made by the solar modules and converts this to grid quality AC 240V power. This power is then injected into your house and any excess power is then sent back to the grid via an “export” meter. When the meters are read the “export” meter amount is deducted from your usage meter. This is called “net metering”.

**Q.**

**How do I sell my power back?**

**A.**

What Power Crisis will advise you on your options with various power retailers, who will offer you a net metering contract. In many cases you can retain your existing retailer. With Net Metering, you build up a credit of surplus energy unit but do not get paid.

**Q.**

**What does the price include?**

**A.**

The published price is a fully installed turnkey price with a reasonable, straightforward wiring installation. Additional or custom wiring situations may incur further installation costs. This price excludes any regulatory consents, but we do provide producer statements for products when required. We would also inspect the site for suitability and confirm the installed price at that stage.

<b>Q.</b>	<b>How long do these systems last?</b>
<b>A.</b>	The WPC Solar modules have a 25 year performance warranty, that warrants the modules will perform to 80% of their rated capacity in 25 years, The SMA Inverter is made in Germany and has a long service life.

<b>Q.</b>	<b>What is the system warranty?</b>
<b>A.</b>	What Power Crisis warrants the installation and hardware for three years. All work is carried out by a registered electrician to all relevant New Zealand standards. What Power Crisis Limited is a member of SEANZ and operates under its guidelines.

<b>Q.</b>	<b>How fast does the system pay back?</b>
<b>A.</b>	When we do an onsite inspection we will run your site data through the simulation software and produce a report similar to the one on the following page. Multiplying the annual product by your kWh rate will give you an estimation of annual savings. As the annual cost of power increases the payback time will reduce. Many customers also consider the non-financial benefits of reducing their carbon footprint as a factor when considering a grid tie system.

### System overview (New Zealand / Auckland)



#### PV-module

Mitsubishi;  
PV-TD180MF5 (180W)  
Angle of inclination: 25°  
Azimuth angle: 180°  
Module x String: 7 x 1

#### Inverter

Sunny Boy SB 1100  
Number: 1  
Max. efficiency: 93 %; EU-efficiency: 91.6 %  
Max. DC power: 1.21 kW; Max. AC power: 1.1 kW  
Grid voltage/frequency: 230 V / 50 Hz

#### Technical data

PV peak power :	1.26 kW
Total number of modules :	7
Area of PV-generator :	9.9 m <sup>2</sup>
Number of inverters :	1
Max. DC power of inverter :	1.21 kW
Max. AC power of inverter :	1.10 kW
Inverter effectiveness :	91.9 %

Nominal power ratio :	96 %
Yearly en. yield * :	1619 kWh
Energy usability factor :	99.9 %
Performance Ratio * :	80 %
Spec. energy yield * :	1285 kWh/kWp
Cable losses (% in PV-Energy) :	Not considered

### System overview (New Zealand / Auckland)



#### PV-module

Mitsubishi;  
PV-TD180MF5 (180W)  
Angle of inclination: 25°  
Azimuth angle: 180°  
Module x String: 10 x 1

#### Inverter

Sunny Boy SB 1700  
Number: 1  
Max. efficiency: 93.5 %; EU-efficiency: 91.8 %  
Max. DC power: 1.85 kW; Max. AC power: 1.7 kW  
Grid voltage/frequency: 230 V / 50 Hz

#### Technical data

PV peak power :	1.80 kW
Total number of modules :	10
Area of PV-generator :	14.1 m <sup>2</sup>
Number of inverters :	1
Max. DC power of inverter :	1.85 kW
Max. AC power of inverter :	1.70 kW
Inverter effectiveness :	91.6 %

Nominal power ratio :	103 %
Yearly en. yield * :	2307 kWh
Energy usability factor :	100.0 %
Performance Ratio * :	79 %
Spec. energy yield * :	1282 kWh/kWp
Cable losses (% in PV-Energy) :	Not considered



## Technical Data

### Safe

- Integrated ESS DC load disconnecting unit
- Electric separation

### Suitable for outdoors

- For inside and outside installation
- Extended temperature range

### Reliable

- Worldwide SMA service and SMA Service Line
- Attractive SMA warranty program

#### Input data

Max. DC power ( $P_{DC, max}$ )  
 Max. DC voltage ( $U_{DC, max}$ )  
 PV voltage range, MPPT ( $U_{MPP}$ )  
 Max. input current ( $I_{PV, max}$ )  
 DC voltage ripple ( $U_{pp}$ )  
 Max. number of strings (parallel)  
 DC isolator  
 Thermally monitored varistors  
 Ground fault monitoring  
 Reverse polarity protection

#### Output data

Max. AC power ( $P_{AC, max}$ )  
 Nominal AC output ( $P_{AC, nom}$ )  
 THD of AC current  
 Nominal AC voltage ( $U_{AC, nom}$ )  
 Nominal AC frequency ( $f_{AC, nom}$ )  
 Power factor ( $\cos \varphi$ )  
 Short-circuit proofing  
 Grid connection

#### Efficiency

Max. efficiency  
 Euro ETA

#### Protection rating

in accordance with DIN EN 60529

#### Mechanical data

Width/height/depth (mm)  
 Weight

#### Sunny Boy 1100

1210 W  
 400 V  
 139 V - 320 V  
 10 A  
 < 10 %  
 2  
 plug connector, ESS  
 yes  
 yes  
 short-circuit diode

1100 W  
 1000 W  
 < 4 %  
 220 V - 240 V  
 50 Hz / 60 Hz  
 1  
 yes, current control  
 AC plug connector

93 %  
 91.6 %

IP65

434 / 295 / 214  
 22 kg

#### Sunny Boy 1700

1850 W  
 400 V  
 139 V - 320 V  
 12.6 A  
 < 10 %  
 2  
 plug connector, ESS  
 yes  
 yes  
 short-circuit diode

1700 W  
 1550 W  
 < 4 %  
 220 V - 240 V  
 50 Hz / 60 Hz  
 1  
 yes, current control  
 AC plug connector

93.5 %  
 91.8 %

IP65

434 / 295 / 214  
 25 kg