Compared with electricity generated from fossil fuels, each kilowatt of PV-produced electricity offsets up to 370 kg of oxides of nitrogen, 660 kg of sulfur dioxide, and 1,500 kg of carbon dioxide, every year.
CONTENT

2  ▶ Corporate Profile
4  ▶ Energy Facts
   ▶ Grid Connect Systems
   6  ▶ Kyocera Modules
   7  ▶ Solarworld Modules
   9  ▶ System Components
10 ▶ 1.5kW Systems
11 ▶ 2kW Systems
12 ▶ 3kW Systems
13 ▶ 4kW Systems
14 ▶ 5kW Systems
15 ▶ 6kW Systems
16 ▶ Custom Systems
17-19 ▶ Individual Components
20 ▶ Array Layouts
22 ▶ Powerfab Mounting System
24 ▶ Solar Accreditation
24 ▶ Distributors
26-28 ▶ Solar Glossary of Terms
29 ▶ Terms & Conditions
CORPORATE PROFILE

BlueSky Energy’s Solar Power products and systems supply Sustainable Energy solutions for the benefit of the planet and our children’s future. Our company can also provide expert consultation to ensure you maximise your returns on your investment in renewable energy.

The company has three major operating divisions. BlueSky Energy which offers solar power products and sustainable energy systems. Preformed Line Products which has a range of products for the power distribution, power transmission and communications markets and Rack Technologies which has a range of cabinets and enclosures for the data communication, electronics and security markets.

BlueSky Energy is Australian based and formed and backed by people who are strong in business application and engineering. We are driven to cater for the new age in sustainable energy systems that have previously been “On the Horizon” or “financially not practical”.

From supplying the base products for Solar applications or complete systems, to design and integration from start to finish in turnkey solutions, BlueSky Energy is a key component in sustaining your energy future.

Through our professional approach and consultation, we can provide ‘start to finish’ solutions using the highest quality components, making the choice for Solar Energy a key investment.

ECOLOGICAL

BlueSky Energy manufactures and partners with industry leading suppliers to bring the best possible solution to the market. Backed by support from locally qualified engineers, BlueSky Energy can bring a project together in a seamless professional manner on budget and on time. “Applications for Alternative Sustainable Power” are endless. Wherever electrical power is required, a Renewable Energy solution will always exist.

SUSTAINABLE ENERGY SOLUTIONS

BlueSky Energy provides the most up to date components and systems for the requirements of today and future energy demands. Backed by our industry experience and professional approach, BlueSky Energy can deliver off-the-shelf systems or tailor made solutions as required.

Whether it be Solar Photovoltaic systems for commercial or private power generation, BlueSky Energy can build and provide the most comprehensive system and consultation.

ENERGY EFFICIENT SOLUTIONS

- Energy auditing services
- Power system efficiency upgrades
- Consultation on energy reduction
Dedication to ongoing application and engineering of Solar technology will drive the future innovations in the power generation industry and provide the way to reduce dependence on fossil fuel economies of today.

With our manufacturing advantage, we are committed to pushing the boundaries and applying solar technology to provide renewable energy solutions at the leading edge.

BlueSky Energy is a market driven company with its resources set in the following areas;

- Residential Grid Connect Solar Systems
- Commercial Solar Power Generation Plants
- Solar technology application
- Design & Engineering for specialised PV systems
- Manufacture of structural solar mounting solutions

BlueSky Energy can provide product selection, design & application solutions via custom manufactured mounting systems, installation and maintenance. We also provide business case cost analysis for commercial and industrial systems where generated power can be used to levy system finance.
ENERGY FACTS

Energy from the sun is converted by the Photovoltaic modules located on top of the roof. The electrical energy developed by the PV modules is DC, like a battery, and therefore needs to be converted for use in the home.

A DC-AC converter, more commonly called an inverter, then transforms the power to 240 Volts to be used by normal electrical appliances.

The inverter system is intelligent and can discover if power is required in the home or, if not, then routing the excess power to the connected outside utility grid. When this happens, the bi-directional meter will record excess energy exported to the utility grid placing you in credit. Later this power can be used, typically this is what happens at night when there isn’t any sun for the system to run the home.

ENERGY PRODUCED

There is no real limitation to how much energy can be produced using the power of the sun and solar. All that is needed is enough space for solar modules and plenty of sunlight.

For most systems however, space, budget and your power requirements will provide the answer.

The table below shows Solar system sizes from 1kw to 4kw and how expected power will be generated annually located in Sydney for Low – High Energy households.

FEED IN TARIFF

Feed-in tariffs is the premium rate paid to producers of renewable energy. Feed-in tariffs are a way of subsidising renewable energy and can be implemented in conjunction with mandatory renewable energy targets.

Most Australian States have or are introducing Net feed in tariffs. Excess power produced by your Solar system will receive the feed in tariff. Gross feed in tariff systems pay on all clean energy produced from your solar system.

Contact Bluesky Energy to determine the most suitable system for your home. We can design a system to meet your budget and determine the cut in your power bill and your systems carbon savings.

GREENHOUSE GAS REDUCTION

Based on comparison to energy production by fossil fuel source such as coal with 1kW of coal fired electricity producing between 0.92 - 1.3kg CO₂.
GRID
CONNECT
SOLAR
SYSTEMS

KYOCERA SOLAR MODULES

Kyocera solar modules are a reliable, virtually maintenance free power supply designed to convert sunlight into electricity at the highest possible efficiency. Kyocera began researching photovoltaics in 1975 and has installed thousands of systems throughout the world since 1978.

Kyocera’s advanced cell-processing technology and automated production facilities produce highly efficient multi-crystal photovoltaic modules. To protect the cells from the most severe environmental conditions, they are encapsulated between a tempered glass cover and an EVA pottant with a PVF back sheet. The entire laminate is installed in an anodized aluminium frame for structural strength and ease of installation.

KD SERIES

These new, safer and more stringent safety qualified modules will roll out over the course of the year featuring heavy-duty anodised aluminium frames with box-style walls. Modules in the KD series are suitable for high voltage arrays with multi-contact output cables for ease of installation, typically for grid connect situations.

<table>
<thead>
<tr>
<th>Module</th>
<th>Power in Watts (Pmax)</th>
<th>Voltage in Volts (Vmp)</th>
<th>Current in Amps (Imp)</th>
<th>Weight (kg)</th>
<th>Dim. (LxWxD) (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>KD135</td>
<td>135</td>
<td>17.7</td>
<td>7.63</td>
<td>12.5</td>
<td>1500 x 668 x 46</td>
</tr>
<tr>
<td>KD185</td>
<td>180</td>
<td>23.6</td>
<td>7.63</td>
<td>16.5</td>
<td>1338 x 990 x 46</td>
</tr>
<tr>
<td>KD210</td>
<td>210</td>
<td>26.6</td>
<td>7.71</td>
<td>18.5</td>
<td>1500 x 990 x 46</td>
</tr>
<tr>
<td>KD235</td>
<td>235</td>
<td>29.8</td>
<td>7.89</td>
<td>21</td>
<td>1662 x 990 x 46</td>
</tr>
</tbody>
</table>

The depth dimension relates to the module frame. For total depth refer to the individual specification sheet for exact dimension.
As a leading global specialist in solar power technology and components, SolarWorld offer you a complete series of products which are manufactured to the highest quality control standards.

The Sunmodule heralds an innovative new module concept from SolarWorld. The fully automated production process at the SolarWorld factories creates a module quality that is consistently high, which in turn will ensure high yields for the long term.

Under the Sunmodule brand, we offer superior quality, high performance solar modules designed in a wide variety of applications. All products have an industry leading power tolerance of +/- 3%, backed by a 25 year performance warranty. The high performance poly crystalline cells used in the Sunmodule are sealed in transparent EVA (ethylene-vinyl-acetate) between impact resistant tempered glass and a durable TPT (tedlar-polyester-tedlar) backsheet. The innovative module design incorporates new audible locking, IP65 protection rated, quick connectors for fast, reliable installation wiring. New double-insulated cables approved for use in ungrounded source circuit systems.

This guarantees exceptional rigidity for the entire module and stops any possible loosening of the frame as a result of strong outward forces in cases such as sliding of heavy snow. Tests carried out in accordance with IEC 61215, applying loads up to 5.4 kN/m², confirm that the module can withstand high loads such as heavy accumulations of snow and ice.

<table>
<thead>
<tr>
<th>Module</th>
<th>Dimension L x W x D (mm)</th>
<th>Weight (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SW185</td>
<td>1605 x 805 x 34</td>
<td>13.5</td>
</tr>
<tr>
<td>SW220</td>
<td>1675 x 1001 x 34</td>
<td>22</td>
</tr>
</tbody>
</table>

The glass is set deep into the module frame and they are firmly attached to each other by silicone that is applied with continuous precision.
Kyocera is a world leader in polycrystalline silicon photovoltaic (PV) cells and modules, with a comprehensive product line ranging from modules and components to fully integrated, turn-key systems.

SolarWorld Asia Pacific is part of the SolarWorld Group, one of the largest solar companies worldwide. Active at all levels of the solar industry’s value chain from silicon as a raw material to complete solar power plants, the SolarWorld Group is solely focused on the successful commercialisation of solar as a viable alternative source of energy.

SYSTEM GUARANTEE

QUALITY ASSURANCE
- Thermal cycling test
- Thermal shock test
- Electrical isolation test
- Hail impact test
- Mechanical and wind test
- Thermal/freezing and high humidity cycling test

INSTALLATION
- Frames are installed independently of the solar modules
- All electrical connections on the roof are made via multi-contact connectors
- Easily installed on all common roof types; includes tile, tin and cliplok.

WARRANTY
- 25 years limited warranty on solar module output
- Up to 10 years on all other major components
SYSTEM COMPONENTS

Bluesky Energy’s Solar Power Systems generate mains compatible, 240V AC electricity for the home. Quality PV solar modules are used from Kyocera and Solar World. These solar modules are the most efficient of their type in the world and renowned for their quality and reliability.

Systems include all the components required to power the home or office with clean solar energy.

Power-Fab Mounting System
Anodised aluminium and marine grade stainless steel to prevent corrosion. Allows quick and easy installation to reduce labour costs. Designed and engineered in Australia by BlueSky Energy.

Isolation & Enclosures
Weather protected enclosure to house DC isolation and switch gear. Rated to IP65 will house double pole 500 volt certified circuit breakers.
(Optional for kits)

Multi-Contact Lead
Fly lead interconnects for patching and extending module leads.

Warning Labels
Australian standard label set for solar installation.

Grid Connect Inverter
Converts DC power from the solar modules to grid compatible 240V AC power. Automatically connects and disconnects to the grid approved to AS4777.
### 1.5kW Kit Inclusions

**SMA 1700 Watt Inverter**
- IP65 Rated
- Made In Germany
- 5 Year Replacement Warranty
  (Additional 5 year warranty optional)

**Power-Fab Universal Mounting**
- 4300mm Aluminium Anodised Mounting Rails
- End Clamps
- Mid Clamps

**AC/DC Isolation & Enclosures**
(Optional Extra)

**Warning Labels**
Set of Australian Standards Labels

---

**BS1500SW**
- 8 x Sunmodule 185 watt Mono Crystalline PV Panels
- Total system wattage: 1485w
- System surface area: 12sqm
- Panel dimensions: 1605 x 805 x 34mm
- Panel weight: 13.5kg
- Includes SMA 1.7kW inverter
- Power-Fab aluminium anodised mounting system
- 2m & 8m cables
- Warning label kit

**BS1500KY**
- 11 x Kyocera 135 watt Poly Crystalline PV Panels
- Total system wattage: 1480w
- System surface area: 12.5sqm
- Panel dimensions: 1500 x 668 x 46mm
- Panel weight: 13kg
- Includes SMA 1.7kW inverter
- Power-Fab aluminium anodised mounting system
- 2m & 8m cables
- Warning label kit
2kW KIT INCLUSIONS

**Aurora 2000 Watt Inverter or Outdoor**
- Attractive Appearance Suits any Indoor Location
- Easy to Understand Graphics Energy Display
- Built in Communications Port for PC Connection
- Built in 365 Day Data Logger

**AC/DC Isolation & Enclosures**
(Optional Extra)

**Power-Fab Universal Mounting**
- 4300mm Aluminium Anodised Mounting Rails
- End Clamps
- Mid Clamps

**Warning Labels**
Set of Australian Standards Labels

---

**BS2000SW**

- 11 x Sunmodule 185 watt Mono Crystalline PV Panels
- Total system wattage: 2035w
- System surface area: 16sqm
- Panel dimensions: 1605 x 805 x 34mm
- Panel weight: 13.5kg
- Includes Aurora 2kW inverter
- Power-Fab aluminium anodised mounting system
- 2m & 12m cables
- Warning label kit

**BS2000KY**

- 15 x Kyocera 135 watt Poly Crystalline PV Panels.
- Total system wattage: 2025w
- System surface area: 15.5sqm
- Panel dimensions: 1500 x 668 x 46mm
- Panel weight: 13kg
- Includes Aurora 2kW inverter
- Power-Fab aluminium anodised mounting system
- 3m & 2m cables
- Warning label kit
3 kW

3kW KIT INCLUSIONS

**SAM 3000 Watt Inverter**
- IP65 Rated
- Made in Germany
- 5 Year Replacement Warranty
  (additional 5 year warranty optional)

**Power-Fab Universal Mounting**
- 4300mm Aluminium anodised mounting rails
- End Clamps
- Mid Clamps

**AC/DC Isolation & Enclosures**
(Optional Extra)

**Warning Labels**
- Set of Australian Standards Labels

---

16 x Sunmodule 185 watt Mono Crystalline PV Panels
- Total system wattage: 2960w
- System surface area: 24sqm
- Panel dimensions: 1605 x 805 x 34mm
- Panel weight: 13.5kg
- Includes SMA 3kW inverter
- Power-Fab aluminium anodised mounting system
- 3m & 2m cables
- Warning label kit

Includes 14 x Kyocera 210 watt Poly Crystalline PV Panels
- Total system wattage: 2940w
- System surface area: 23sqm
- Panel dimensions: 1500 x 990 x 46mm
- Panel weight: 18.6kg
- Includes SMA 3kW inverter
- Power FAB aluminium anodised mounting system
- 3m & 2m cables
- Warning label kit
4kW KIT INCLUSIONS

SMA 4000 Watt Inverter
- IP65 Rated
- Made In Germany
- 5 Year Replacement Warranty
  (Additional 5 year warranty optional)

AC/DC Isolation & Enclosures
(Optional Extra)

Power-Fab Universal Mounting
- 4300mm Aluminium anodised mounting rails
- Stainless Steel Cable Clips
- End Clamps
- Mid Clamps

Warning Labels
Set of Australian Standards Labels
5kW KIT INCLUSIONS

SMA 5000 Watt Inverter
IP65 Rated
Made In Germany
5 Year Replacement Warranty
(Additional 5 year warranty optional)

AC/DC Isolation & Enclosures
(Optional Extra)

Power-Fab Universal Mounting
4300mm Aluminium anodised mounting rails
End Clamps
Mid Clamps

Warning Labels
Set of Australian Standards Labels
**6kW KIT INCLUSIONS**

**Aurora 6000 Watt Inverter**  
Grid-Connected Operation Certified to Intl Standards  
Models Available with 90 to 530 Volt Operating Windows  
Rugged Designs Provide a 25-year MTBF  
Unmatched Applications Flexibility

- 33 x Sun Module 185 watt Mono Crystalline PV Panels  
- Total system wattage: 6105w  
- System surface area: 45sqm  
- Panel dimensions: 1605 x 805 x 34mm  
- Panel weight: 13.5kg  
- Includes Aurora 6kW inverter  
- Power FAB aluminium anodised mounting system  
- 3m x 12m & 3m x 2m cables  
- Warning label kit

**Power-Fab Universal Mounting**  
4300mm Aluminium anodised mounting rails  
End Clamps  
Mid Clamps

**AC/DC Isolation & Enclosures**  
(Optional Extra)

**Kyocera 210 watt Poly Crystalline PV Panels**  
- 30 x Kyocera 210 watt Poly Crystalline PV Panels  
- Total system wattage: 6300w  
- System surface area: 46sqm  
- Panel dimensions: 1500 x 990 x 46mm  
- Panel weight: 18.5kg  
- Includes SMA 6kW inverter  
- Power FAB aluminium anodised mounting system  
- 3m x 12m & 3m x 2m cables  
- Warning label kit

**Warning Labels**  
Set of Australian Standards Labels

**AC/DC Isolation & Enclosures**  
(Optional Extra)
For any systems required above 6kW in size, please contact the Bluesky Energy Sales Office on 02 8805-0100 or email to sales@blueskyenergy.com.au

Bluesky Energy can evaluate your requirements on an individual basis, and design and install a system to meet your energy needs. Through our Accredited team of Engineers and Installers, you can be assured your project will be completed in a smooth and professional manner, on time and within your budget requirements.

www.preformed.asia
All Blue Sky Energy kits are supplied with enough mounting hardware for a standard array layout. The mounting rails are supplied in 4.3 metre lengths with end clamps and mid clamps to set out the array. In some difficult installation circumstances, it may be necessary to cut the rails into shorter lengths to avoid skylights or shading issues. In these circumstances it would be necessary to order extra end clamps and rail joiners to cater for the array layout change.

For further information, please contact Blue Sky Energy on 02 8805 0100.

<table>
<thead>
<tr>
<th>SOLARWORLD LAYOUT</th>
<th>KYOCERA LAYOUT</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.5kW</td>
<td></td>
</tr>
<tr>
<td>2kW</td>
<td></td>
</tr>
<tr>
<td>3kW</td>
<td></td>
</tr>
<tr>
<td>4kW</td>
<td></td>
</tr>
<tr>
<td>5kW</td>
<td></td>
</tr>
<tr>
<td>6kW</td>
<td></td>
</tr>
</tbody>
</table>

Further mounting hardware may be required for non standard array layout.
INDIVIDUAL COMPONENTS

**SOLAR MODULES**

**Kyocera**
- Highly reliable and efficient
- Virtually maintenance free
- Heavy-duty anodised aluminium frames
- KD Series suitable for high voltage arrays, typically for grid connect situations.

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Panel</th>
<th>Multi Crystalline</th>
</tr>
</thead>
<tbody>
<tr>
<td>KD135</td>
<td>Kyocera</td>
<td>135W</td>
</tr>
<tr>
<td>KD185</td>
<td>Kyocera</td>
<td>180W</td>
</tr>
<tr>
<td>KD210</td>
<td>Kyocera</td>
<td>210W</td>
</tr>
<tr>
<td>KD235</td>
<td>Kyocera</td>
<td>235W</td>
</tr>
</tbody>
</table>

**Solarworld**
- Superior quality and high performance
- Designed for a wide variety of applications
- Impact resistant tempered glass
- Audible locking, IP65 protection rated, quick connectors for fast and reliable installation wiring.

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Panel</th>
<th>Poly Crystalline</th>
</tr>
</thead>
<tbody>
<tr>
<td>SW185</td>
<td>Solarworld Mono</td>
<td>185W</td>
</tr>
<tr>
<td>SW220</td>
<td>Solarworld Poly</td>
<td>220W</td>
</tr>
</tbody>
</table>

**GRID CONNECT INVERTERS**

**Sunny Boy**
The Sunny Boy inverters are used in the most diverse AC grids thanks to their galvanic isolation. In addition, the devices are suitable for the simple grounding of the generator. Their integrated ESS DC load-disconnection switch simplifies installation and reduces its cost at the same time. Equipped with the OptiTrac MPP tracking process, it will always find the optimal working point, even under dynamic weather conditions. In this way, it reliably converts solar energy into solar earnings.

- Galvanic isolation
- Extended temperature range
- For outdoor and indoor installation
- Worldwide SMA Service including Service Line
- Comprehensive SMA warranty program
- Efficiency up to 95.6 %

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
<th>Max. AC Power</th>
</tr>
</thead>
<tbody>
<tr>
<td>SMA SB1200</td>
<td></td>
<td>1200w</td>
</tr>
<tr>
<td>SMA SB1700</td>
<td></td>
<td>1700w</td>
</tr>
<tr>
<td>SMA SB2500</td>
<td></td>
<td>2500w</td>
</tr>
<tr>
<td>SMA SB3000TL</td>
<td></td>
<td>3000w</td>
</tr>
<tr>
<td>SMA SB4000TL</td>
<td></td>
<td>3800w</td>
</tr>
<tr>
<td>SMA SMC5000A</td>
<td></td>
<td>5000w</td>
</tr>
<tr>
<td>SMA SMC6000A</td>
<td></td>
<td>6000w</td>
</tr>
<tr>
<td>SMA SMC10000TL</td>
<td></td>
<td>10000w</td>
</tr>
</tbody>
</table>
**MULTI CONTACT LEADS**

Our Multi Contact leads are manufactured with 4mm high UV stabilised cable that is made to last the lifetime of a solar system.

Available in MC3 & MC4 varieties in lengths from 2 to 15 metres.

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Part No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>MC3-2M</td>
<td>MC4-2M</td>
<td>2m Male/Female</td>
</tr>
<tr>
<td>MC3-8M</td>
<td>MC4-8M</td>
<td>8m Male/Female</td>
</tr>
<tr>
<td>MC3-12M</td>
<td>MC4-12M</td>
<td>12m Male/Female</td>
</tr>
<tr>
<td>MC3-15M</td>
<td>MC4-15M</td>
<td>15m Male/Female</td>
</tr>
</tbody>
</table>

- High UV stabilization ~ 25 years
- 110 degree C rated
- Oxygen Free Tinned Copper conductor.
- 0.9/1.5 kV DC rated
- Low Smoke Halogen Free
- Australian Made.

**WARNING LABELS**

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>BSLABELKIT</td>
<td>Set of Warning Labels to Australian Standard</td>
</tr>
</tbody>
</table>

**ACCESSORIES**

<table>
<thead>
<tr>
<th>Y Adaptors</th>
<th>Pigtails</th>
</tr>
</thead>
<tbody>
<tr>
<td>2F - 1M</td>
<td>F 400mm</td>
</tr>
<tr>
<td>2M - 1F</td>
<td>M 400mm</td>
</tr>
</tbody>
</table>

**DATA LOGGER**

**Sunny Webbox**

System monitoring, remote diagnostics, data storage and visualization, the Sunny WebBox is the communication center for your solar power station. Continuously gathering all data from the inverters and thereby allows you to remain constantly informed of your system’s status at any given time. It also offers a wide range of possibilities for displaying, archiving and further processing the system data.

- 24-hour monitoring of the PV system
- Radio-based plant monitoring with Bluetooth
- Early detection of operational failures
- Logging of energy yields
- Diagnosis and system configuration using any PC (Windows, Linux & Mac OS)

**Part Number**

| WEBBOX |
BATTERIES

Sungel
Designed to survive conditions which spelt early failure by previous standards providing long, reliable service without the need for frequent attention. An Ideal solution for all sites including remote regions which are difficult to access.

Energel
Provides an economical ‘whole of life’ solutions to the need for long term, low maintenance reliability. When the unexpected happens and you need dependable support, Energel range of batteries will be working for you.

REGULATORS

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>BS34931</td>
<td>Sunguard SG4 - 4Amp 12Volt Regulator</td>
</tr>
<tr>
<td>BS34963</td>
<td>SS6/12L - Sunsaver 6Amp 12Volt Regulator with LVD</td>
</tr>
<tr>
<td>BS34966</td>
<td>SS10/12L - Sunsaver 10Amp 12Volt Regulator with LVD</td>
</tr>
<tr>
<td>BS34942</td>
<td>SS10/24L - Sunsaver 10Amp 24Volt Regulator with LVD</td>
</tr>
<tr>
<td>BS34935</td>
<td>SS20/12L - Sunsaver 20Amp 12Volt Regulator with LVD</td>
</tr>
<tr>
<td>BS34936</td>
<td>SS20/24L - Sunsaver 20Amp 24Volt Regulator with LVD</td>
</tr>
<tr>
<td>BS35013</td>
<td>SSD-25/12 - Sunsaver Duo 25Amp 12 Volt with Remote Meter</td>
</tr>
<tr>
<td>BS35015</td>
<td>Sunsaver MPPT Trakstar - 12Volt 200Watt / 24Volt 400Watt</td>
</tr>
<tr>
<td>BS35002</td>
<td>Suresine Inverter - SI-300-220VAC - Input 12VDC</td>
</tr>
<tr>
<td>BSPL20</td>
<td>Plasmatronics Controller, 20AMP 12/24/48 Volt Programmable</td>
</tr>
<tr>
<td>BSPL40</td>
<td>Plasmatronics Controller, 40AMP 12/24/48 Volt Programmable</td>
</tr>
<tr>
<td>BSPL60</td>
<td>Plasmatronics Controller, 60AMP 12/24/48 Volt Programmable</td>
</tr>
</tbody>
</table>

Blue Sky Energy has a variety of regulators available to suit your stand-alone application. With brands including Plasmatronics and Morningstar, we can offer a device to suit most applications.

STAND ALONE INVERTERS

Sunny Island
The Sunny Island battery inverters are particularly suited for use in small-scale and medium-sized stand-alone systems. The devices guarantee a reliable, high quality power supply, with extremely quiet operation. Due to their excellent overload characteristics and their design for high ambient temperatures, they are suitable for use under extreme climatic conditions.

- For systems from 2 to 5 kW
- AC and DC coupling
- Easy installation
- High efficiency
- Extreme overload capability
- 5 year warranty

BATTERIES

Sungel
Designed to survive conditions which spelt early failure by previous standards providing long, reliable service without the need for frequent attention. An Ideal solution for all sites including remote regions which are difficult to access.

Energel
Provides an economical ‘whole of life’ solutions to the need for long term, low maintenance reliability. When the unexpected happens and you need dependable support, Energel range of batteries will be working for you.

Highest quality standards - ISO 9001 acc.
Corrosion resistant alloys
High performance and long life
Excellent recovery from deep discharge
100% cell testing to ensure reliable performance

STAND ALONE INVERTERS

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
<th>Max. AC Power</th>
</tr>
</thead>
<tbody>
<tr>
<td>SI2012</td>
<td>Sunny Island Inverter</td>
<td>2000w</td>
</tr>
<tr>
<td>SI2224</td>
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<td>2200w</td>
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<td>SI3324</td>
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<td>SI4248</td>
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<td>4200w</td>
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<tr>
<td>SI5048</td>
<td>Sunny Island Inverter</td>
<td>5000w</td>
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</table>

Sunny Island
The Sunny Island battery inverters are particularly suited for use in small-scale and medium-sized stand-alone systems. The devices guarantee a reliable, high quality power supply, with extremely quiet operation. Due to their excellent overload characteristics and their design for high ambient temperatures, they are suitable for use under extreme climatic conditions.

For systems from 2 to 5 kW
AC and DC coupling
Easy installation
High efficiency
Extreme overload capability
5 year warranty
POWER-FAB MOUNTING SYSTEM

The rails are engineered to allow greater spans between supports, thus minimising roof penetrations, reducing installation time and lowering overall cost.
The Power-Fab Rail top-clamping PV mounting system is designed with the professional PV solar installer in mind. The rails are engineered to allow greater spans between supports, thus minimizing roof penetrations, reducing installation time, and lowering overall costs.

Power-Fab Rail is available in lengths up to 4.3m allowing for fewer field splices and longer span lengths. The end result is fewer hardware components and reduced assembly thus saving the installer both valuable time and money.

**KIT COMPONENTS**

**Power-Fab Rail Extrusion**
Power Rail is an engineered profile extrusion made from Series 6000 structural aluminium.

**L Bracket**
L Bracket are fabricated from high strength 3/16" aluminium and include a vertical slot for adjusting to irregular surfaces.

**Mid Clamp**
Aluminium for strength and durability with 304 stainless steel fastening hardware. The low profile design and slim 3/8” gap between modules provide a professional appearance and higher density.

**End Clamp**
Aluminium for strength and durability with 304 stainless steel fastening hardware. Universal patent pending design allows any solar module to be mounted securely. This allows a single kit component list to cater for any project. End locking bolt provides installation preset positioning of module alignment and can handle panels from 34mm to 52mm in thickness.
PowerFAB fixed tilt legs are designed for raking of the array to the optimal angle to ensure maximum yield.

The tilt legs are manufactured from the same aluminium anodised rail used on the PowerFAB PV panel mounting system, therefore ensuring a uniform installation.
SOLAR ACCREDITATION

For more information on solar accreditation, please call the Clean Energy Council.

DISTRIBUTORS

Available From Leading Electrical Wholesalers And Solar Distributors

www.preformed.asia
SOLAR GLOSSARY OF TERMS

 TERMS AND CONDITIONS

Committed to expanding the application of Solar Power Systems into everyday use, by keeping abreast of the latest technologies in renewable energy.
**SOLAR GLOSSARY OF TERMS**

**(AC) Alternating Current:** Current flow is reversed at various intervals.

**(AMP) Ampere:** A unit of electrical current.

**Battery:** The device used to store the electricity coming from the PV arrays. Grouped together with each other in order to produce the desired voltage or current level.

**Battery Capacity:** The total electrical charge available to use from a fully charged battery, expressed in ampere hours (Ah).

**Charge Controller:** Controls the flow of the current to and from the batteries. It also protects the batteries from over charging and from over discharging.

**(DC) Direct Current:** Current flowing in one direction.

**Fixed Tilt Array:** A photovoltaic array set at a fixed angle with respect to horizontal.

**(GW) Gigawatt:** A unit of power equal to 1 billion watts, 1 million kilowatts or 1000 megawatts.

**Grid Connected System:** A solar electric or photovoltaic (PV) system in which the PV array acts like a central generating plant, supplying power to the grid. Also referred to as “On-Grid.”

**Grid Lines:** Metallic contacts fused to the surface of the solar cell to provide a low resistance path for electrons to flow out to the cell interconnect wires.

**High Voltage Disconnect:** The voltage at which a charge controller will disconnect the photovoltaic array from the batteries to prevent overcharging.

**Hybrid System:** A solar electric or photovoltaic system that includes other sources of electricity generation, such as wind or diesel generators.

**Input Voltage:** This is determined by the total power required by the alternating current loads and the voltage of any direct current loads. Generally, the larger the load, the higher the inverter input voltage. This keeps the current at levels where switches and other components are readily available.

**Insolation:** The solar power density incident on a surface of stated area and orientation, usually expressed as Watts per square meter or Btu per square foot per hour.

**Junction Box:** A photovoltaic (PV) generator junction box is an enclosure on the module where PV strings are electrically connected and where protection devices can be located, if necessary.

**Inverter:** DC to AC Inverter: Converts DC power to AC power.

**(Kw) Kilowatt:** A standard unit of electrical power equal to 1000 watts, or to the energy consumption at a rate of 1000 joules per second.

**(Kwh) Kilowatt-Hour:** 1,000 thousand watts acting over a period of 1 hour. The kwh is a unit of energy. 1 kwh = 3600 kJ.

**Life-Cycle Cost:** The estimated cost of owning and operating a photovoltaic system for the period of its useful life.

**Load:** The demand on an energy producing system; the energy consumption or requirement of a piece or group of equipment. Usually expressed in terms of amperes or watts in reference to electricity.

**Load Current (A):** The current required by the electrical device.

**Low Voltage Cutoff (LVC):** The voltage level at which a charge controller will disconnect the load from the battery.

**Low Voltage Disconnect:** The voltage at which a charge controller will disconnect the load from the batteries to prevent over-discharging.

**(MW) Megawatt:** 1,000 kilowatts, or 1 million watts is standard measure of electric power plant generating capacity.

**Megawatt-Hour:** 1,000 kilowatt-hours or 1 million watt-hours.

**Monocrystalline Silicon Cells:** Solar cells made from very pure monocrystalline silicon. The silicon has a single and continuous crystal lattice structure with almost no defects or impurities. The principle advantage of monocrystalline cells are their high efficiencies, typically around 15%, although the manufacturing process required to produce monocrystalline silicon is complicated, resulting in slightly higher costs than other technologies.
Polycrystalline Silicon: A material used to make photovoltaic cells, which consist of many crystals unlike single-crystal silicon.

Power Conditioning: The process of modifying the characteristics of electrical power (for e.g., inverting direct current to alternating current).

Power Conditioning Equipment: Electrical equipment, or power electronics, used to convert power from a photovoltaic array into a form suitable for subsequent use. A collective term for inverter, converter, battery charge regulator and blocking diode.

Power Conversion Efficiency: The ratio of output power to input power of the inverter.

(PV) Photovoltaics: Solar energy technology that converts light into electricity utilising solar cells and arrays.

PV Array: Groups of PV solar panels grouped together into one frame to produce a desired amount of electricity.

PV Efficiency: The ratio of output power to input power of a PV solar cell.

PV Solar Cells: Wafers of silicon cells that convert sunlight into (DC) Direct Current electricity.

PV Solar Panel: Groups of PV modules connected together into one single frame.

Rated Power: Rated power of the inverter. However, some units can not produce rated power continuously.

REC's: Renewable Energy Certificate.

Rectifier: A device that converts alternating current to direct current. See inverter.

Regulator: Prevents overcharging of batteries by controlling charge cycle-usually adjustable to conform to specific battery needs.

Series Connection: A way of joining photovoltaic cells by connecting positive leads to negative leads; such a configuration increases the voltage.

Series Controller: A charge controller that interrupts the charging current by open-circuiting the photovoltaic (PV) array. The control element is in series with the PV array and battery.
SOLAR GLOSSARY OF TERMS

**Series Regulator**: Type of battery charge regulator where the charging current is controlled by a switch connected in series with the photovoltaic module or array.

**Silicon**: A semi-metallic element used in solar cells as a semiconductor.

**Single-Stage Controller**: A charge controller that redirects all charging current as the battery nears full state-of-charge.

**SGU’s**: Small Generation Units

**Stand-Alone System**: An autonomous or hybrid photovoltaic system not connected to a grid. May or may not have storage, but most stand-alone systems require batteries or some other form of storage.

**Stand-Off Mounting**: Technique for mounting a photovoltaic array on a sloped roof, which involves mounting the modules a short distance above the pitched roof and tilting them to the optimum angle.

**String**: A number of photovoltaic modules or panels interconnected electrically in series to produce the operating voltage required by the load.

**Thin Film Photovoltaic**: A photovoltaic module constructed with sequential layers of thin film semiconductor materials. A number of other promising materials such as cadmium telluride (CdTe) and copper indium diselenide (CIS) are now being used for PV modules. The attraction of these technologies is that they can be manufactured by relatively inexpensive industrial processes, certainly in comparison to crystalline silicon technologies yet they typically offer higher module efficiencies than amorphous silicon.

**Total AC Load Demand**: The sum of the alternating current loads. This value is important when selecting an inverter.

**Utility-Interactive Inverter**: An inverter that can function only when tied to the utility grid, and uses the prevailing line-voltage frequency on the utility line as a control parameter to ensure that the photovoltaic system’s output is fully synchronized with the utility power.

**Volt (V)**: A unit of electrical force equal to that amount of electromotive force that will cause a steady current of one ampere to flow through a resistance of one ohm.

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**SOLAR GLOSSARY OF TERMS**

**Voltage at Maximum Power (Vmp)**: The voltage at which maximum power is available from a photovoltaic module.

**Voltage Protection**: Many inverters have sensing circuits that will disconnect the unit from the battery if input voltage limits are exceeded.

**Wafer**: A thin sheet of semiconductor (photovoltaic material) made by cutting it from a single crystal or ingot.

**Watt**: The rate of energy transfer equivalent to one ampere under an electrical pressure of one volt. One watt equals 1/746 horsepower, or one joule per second. It is the product of voltage and current (amperage).
APPLICATION
The Terms and Conditions of Sale (“Terms”) apply to all goods sold by Bidulfs Energy Pty Limited (“the Company”). Goods means all goods and/or delivered by the Company to the Customer from time to time. No goods are to be delivered or collected or be accepted in good order and condition. The Company reserves the right in its discretion to accept or refuse to deliver any item. No item is to be made direct to the Company, strictly net, without any deduction or discount other than as stated herein or in the relevant invoice or statement. Removal from the Company’s premises is at the Customer’s sole discretion, if: - the original invoice number and date has been quoted by the Customer;
- no other statement or acknowledgement is received from the Customer, or if the goods marked are “AS SOLD” cannot be returned.
- Goods which cannot be returned are:
- Goods returning or being returned for the supply of equivalent goods, or payment of the cost of replacing or repairing or the Goods or of acquiring equivalent goods, and in either case, the Company will not be liable for any consequential or other direct or indirect loss or damage.
- WARRANTY
The Company warrants to the Customer that the Goods will be supplied in an undamaged condition. On discovery of any defect in the Goods, the Customer must notify the Company in writing within three days of the date of delivery. The Customer must not carry out any remedial work to alleviate defects Goods without first obtaining the written consent of the Company to do so. The Customer’s failure to provide written notice to the Company within the required time of any alleged breach of the above warranty will result in the Company being released from any liability for failure to deliver the Goods. The Customer acknowledges that the Company is not responsible for the Goods not complying with any applicable safety standard(s), or similar regulations, if the Company is not liable for the Goods. The Company will not be liable for any consequential or other direct or indirect loss or damage.
- CANCELLATION OF ORDER AND RETURN OF GOODS
- The Company reserves the right to cancel or modify an order in whole or in part or refuse to accept order or delivery of the Goods, if the Goods being supplied at any time are damaged, or if the Company being reimbursed all losses, including loss of profits, and paid a cancellation and restocking fee (being not less than 15% of the invoice value of the Goods).
- The Company reserves the right to cancel or modify an order in whole or in part or refuse to accept order or delivery of the Goods, if the Goods being supplied at any time are damaged, or if the Company being reimbursed all losses, including loss of profits, and paid a cancellation and restocking fee (being not less than 15% of the invoice value of the Goods).
- The Company will not accept an return of any Goods after such sixty (60) days from the date of delivery to the Customer.
- The Company will not accept an return of any Goods after such sixty (60) days from the date of delivery to the Customer.
- No Goods marked on the Company’s invoices as “AS SOLD” cannot be returned.
- Goods which cannot be returned include:
- Anywhere in the circumstances referred to in the preceding clause, the Customer:.............
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