



# solar power

**green at heart**  
Your one-stop shop  
for building sustainability



**Australia is blessed with an abundance of sunshine which is the ideal clean energy option for powering our homes. Producing no emissions, solar energy is free and efficient.**

## How does it work?

Solar photovoltaic (PV) panels are usually found on the roofs of homes and businesses. These panels convert photon energy into electrical energy through special crystalline cells. The light photons hit the panels (semiconductor crystals) and knock the electrons loose which then flow freely and can be directed to the inverter. The inverter converts the direct current (DC) produced by your solar array into alternating current (AC) which can be used to power your house or be fed into the grid.

Solar PV cells can only generate electricity during the day, most of this between the hours of 9am to 3pm.

There are two types of solar power systems, grid connect and stand alone. Grid connect systems are the most commonly used systems and are generally found in urban areas. They supply solar electricity directly to the household with any excess fed back into the grid. These systems cannot be used when there is a power cut on the electricity grid. Standalone systems are used in remote locations in areas where there is unreliable power or no power supply lines and store energy in a battery bank.

## Where should my panels be installed?

Solar panels should ideally point towards true north and should also be inclined at an angle as close to the area's latitude (Cairns 16 degrees) as possible to absorb the maximum amount of energy year-round although variations on the direction of the panels and angle of the panels can still produce excellent results. Shady areas should be avoided as they can significantly reduce power production.

## BENEFITS

### How much money will I save?

This depends on your power consumption in an average year. You can add up the number of kilowatt hours (kWh) from your bills for one year (16kWh per day is average) and then divide the expected annual output of the PV system by your annual consumption. Eg. A 1kW system produces on average 1800kWh per year so if your annual power consumption was 6000kWh this would represent a 30% saving.

In addition to these savings there is a feed in tariff which can save you more money, especially if you do not use much of the power produced during the day. This can be sold back to your electricity supplier (see Solar Bonus Scheme overleaf for more information).

**Imagine switching on your TV knowing that it has absolutely no impact on the environment or your bills!**

## PANELS, INVERTERS AND WARRANTIES

### Solar Panels

We use Trina and Sungrid panels for all our PV systems. Trina panels are produced by a US owned company and were ranked 2nd best average output against leading brands from Japan, USA and Europe in a recent Australian test [www.trinasolar.com](http://www.trinasolar.com). Sungrid panels are excellent quality and have the best warranties on the market. Trina panels have a 5 year product warranty and 25 year performance warranty (10 year 90%, 25 year 80%) and Sungrid have a 10 year product warranty and 25 year performance warranty (12 year 90%, 25 years 85%).

The Trina panels are our most popular panels as they offer the best cost to performance ratio.

### Inverters

#### Future-proofing your solar power system.

Most of our systems allow for inverters that can run a larger number of panels than installed, so you are able to upgrade your system in future.

With prices of electricity on the rise, if you think that you may want to greatly increase the capacity of your system in future, please make sure that the inverter that you select has the capacity to do so. Spending a few extra hundred dollars now you could save thousands in purchasing a larger inverter in the future.

We use only Sunny Boy, Orion and Enerdrive Xantrex inverters due to their superior quality. All our inverters carry a standard 5 year manufacturer's warranty which can be extended if required.

All Green at Heart PV Installations carry a 5 year installation warranty. We use BCSE (Clean Energy Council) registered installers and offer excellent quality workmanship.

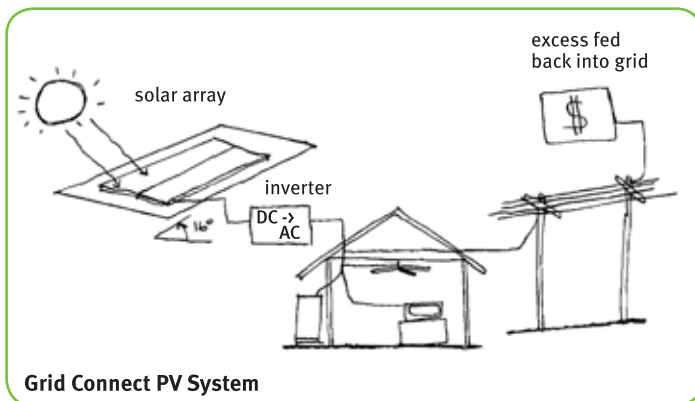


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continued...



Grid Connect PV System

## REBATES & FURTHER COST SAVINGS

The Federal Government has committed to a Renewable Energy Target (RET) to ensure 20 percent of Australia's electricity supply comes from renewable energy sources by 2020.

To help make solar power more affordable there is the Solar Credits Scheme to help reduce the initial cost of installation and an ongoing Feed in Tariff to promote further savings.

### Solar Credits Scheme

The Solar Credits scheme is the new subsidy system that reduces the up-front costs of installing grid connected solar power systems. The scheme replaced the Solar Homes and Communities Plan (SHCP) on Wednesday 10th June 2009.

This scheme is available to home owners, small businesses and community groups for on and off grid installations and is not means tested. It is based on RECs (renewable energy certificates) which can be traded for cash to help discount the cost of the system.

The main financial benefit under the Solar Credits scheme is an increase in the number of Renewable Energy Certificates (RECs) that a solar system produces. A solar system installed under the Solar Credits scheme will receive five times the number of RECs

for the first 1.5 kW of the system capacity. For systems above 1.5kW there is no multiplier for the extra kW's and rebates are 1:1. You have 12 months from the date of installation to claim your RECs.

You have the choice whether to register with the office of the Renewable Energy Regulator and apply to create and negotiate the sale and transfer of your RECs or you can assign your rights to this process to Green at Heart for a discount at point of sale.

### Solar Bonus Scheme – Feed in tariff

The Feed in Tariffs is a mechanism by which owners of grid connect photovoltaic solar power systems are paid MORE than the retail price for any excess electricity production that is fed back into the grid. Under the Solar Bonus Scheme, your electricity bill will be credited 44c for every excess kilowatt hour (kWh) that you put in above your demand. At night you buy back electricity at roughly 18c per kWh. The largest benefit is obtained by those who use little power during the day as most of this can convert to credit, meaning that your systems pays itself back sooner.

## additional savings

To make the most of savings with your solar power system we recommend that you also make changes to your use and lifestyle. See our green living tips and energy savings fact sheets for ways in which you can further reduce your bills. Installing insulation in your ceiling, changing to a solar or heat pump hot water system or changing pool pumps and hot water systems to an off peak tariff are just a few ways that you can achieve further savings.

Free Federal Government sustainability assessments are available with our expert sustainability consultants and are the best place to start to find out about how you can best reduce your bills and add value to your home. Please feel free to contact us for more information or to book your assessment.

**Call Green at Heart to get a quote on the best system for your power consumption needs.**

For more information contact Green at Heart on 4038 3558 or [info@greenatheart.com.au](mailto:info@greenatheart.com.au)