



19. Installing solar power

You can generate your own renewable electricity with solar photovoltaic (PV) panels on your roof. It may seem like a big outlay, but if designed and sized correctly a solar panel system can pay for itself in around 5–10 years through money saved on power bills.

Getting started

Solar PV should always be installed along with complementary energy efficiency measures. By reducing the amount of power your centre uses, you won't need to install such a large solar system, making the overall project economics better for you.

Every solar panel installed increases the total amount of clean, renewable electricity generated and sends a positive message to the community.

Cost-effective installations

The cost effectiveness of an installation is influenced by:

- the price of panels and inverters – which is dropping rapidly
- the cost of buying energy from the grid – which has been rising
- feed in tariffs – what you are paid for when excess solar electricity is fed into the grid.

You can also factor in the market value of the small technology certificates (STCs), which are awarded on size and system location. These factors vary from state to state, plan to plan and fluctuate with changes in government policy.

If you feel daunted by the outlay, try seeking sponsorship, check for incentive schemes or investigate low or no interest finance deals offered by suppliers.



Choosing the right system

A small to medium-sized solar system, combined with energy efficiency, can be very economic. When feed-in tariffs are low, you will get the best economic return if you use most of your electricity during the day when the panels are generating.

This might be the case if your community centre or house uses a lot of air con or has a lot of equipment on during the day. If you have a large hot water system and use the water regularly, it may be better to install a solar hot water or high efficiency heat pump system before installing solar PV.

Feed-in tariffs have been reduced in some states. In 2013, they vary from a few cents up to around 20¢/kWh – less than what you will be paying for electricity from the grid.

You will also need an inverter, which is a box mounted on the wall near your energy meter that converts the solar electricity so it can be used for mains appliances (i.e. 240 volts) or fed back into the grid. Household systems typically vary from 1–5 kW and are currently priced around \$2–3.00 per kW after STC discount.

There may be additional costs for non-standard installations such as multi-storey roofs or sub-optimal roof orientation.

Types of panels

There are different types of panels on the market. Enquire about the practicality of installing a bigger inverter than needed now, if you think you may add panels later. The life of the panels are typically in the order of 25–30 years, whilst good quality inverters should last 15 years before requiring replacement. Solar electricity is generated during daylight hours, typically between 9 am and 5 pm and even a small amount on cloudy days. More is generated in summer (longer days and stronger sun) than winter – the further south you are the greater the winter discrepancy will be.

Research your requirements

Read your bill. Get an idea of average consumption (allowing for decreases through energy efficiency improvements). Try to estimate day time electricity usage.

Choose a reliable system and supplier

Ask around and find an accredited installer with a good track record who has an established business. Ask questions. Do they select panels on quality or price? How long are their warranties for the panels, inverter and for the workmanship?

Select the best position

North facing is best, but if you use a lot of energy in the afternoon, west can work too. You may need stands to optimise the angle for maximum generation. Your installer will make recommendations, but make sure you get an accurate estimate from the installer as to how much a certain sized system will generate on your roof.

Shop around

Shop around for the best feed-in tariff. Compare the rates different suppliers offer.



CHECK POINTS

- ▶ Work out what size you need and what will be the most cost effective.
- ▶ Investigate finance offered by retailers if needed.
- ▶ Choose a reputable company and experienced/accredited installers and long warranties.
- ▶ Clean panels seasonally and keep an eye on the output.
- ▶ Tell your centre's renewable energy generation story to all building users and the wider community.

Maintain your system

Though they are low maintenance, clean the panels 2–4 times per year and ensure the panels are not shaded. Include the solar panel in your insurance policy.

Educate yourself

Learn to read the inverter display to keep track of how much is being generated.

Further resources

Check out A Greenhouse Around the Corner website:

www.agreenhouse.net.au/helpful-resources

Related fact sheets

Fact sheet 17: Shopping around for a better energy deal

For more fact sheets, go to A Greenhouse Around the Corner website:

www.agreenhouse.net.au/fact-sheets