

SOLAR PV FACT SHEET

A guide to purchasing solar power for your school

As the peak body for the renewable energy and energy efficiency industry in Australia, the Clean Energy Council is responsible for accrediting designer/installers of solar photovoltaic (solar PV) systems to ensure systems meet Australian Standards and industry best practice.

This fact sheet is designed to assist schools to make informed decisions when choosing a solar PV system. However, as incentive programs and electricity retailers vary between states and territories, you should also see the Clean Energy Council's comprehensive Consumer Guide to Buying Household Solar Panels (referred to in this document as the Consumer Guide) available to download at:

www.solaraccreditation.com.au/consumers/consumerguide

About solar power systems in Australia

- Over 1 million solar PV installations in Australian homes and schools
- 4500 Clean Energy Council accredited designers/installers
- Over 15 years of grid-connected solar PV installations on Australian rooftops
- To qualify for government incentives including the National Solar Schools Program, solar power systems must be installed by a professional accredited with the Clean Energy Council.

What does it take to be a Clean Energy Council accredited installer?

- They must be a licensed electrician
- They must complete a certified training course and pass assessments under the National Training Scheme
- They must submit case studies on an ongoing basis to retain accreditation
- They must have public liability insurance.



Clean Energy Council



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The Clean Energy Council is the peak body representing Australia's clean energy sector. It is an industry association made up of more than 600 member companies operating in the fields of renewable energy and energy efficiency.

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Installations must meet relevant Australian Standards

Every installation carried out by an accredited installer is required to meet the following Australian Standards:

- AS4777 Grid-connections of energy systems via inverters
- AS/NZS 3000 Electrical wiring rules
- AS 1768 Lightning protection
- AS/NZS 1170.2 Wind loads
- AS/NZS 5033 Installation of photovoltaic (PV) arrays.

Approved products must be used

- All accredited solar installers must use products that meet Australian Standards.
- The Clean Energy Council has compiled a list of approved products - including solar PV modules (panels) and grid-connect inverters - that meet these standards.
- In order to qualify for government incentives for the solar PV system, installers must use equipment on the Clean Energy Council list of approved products.

To view the list of approved products visit www.solaraccreditation.com.au/approvedproducts

How is the solar PV industry regulated?

- Every installation carried out by an accredited designer/installer is required to meet the relevant Australian Standards. You can confirm your designer/installer is accredited by visiting www.solaraccreditation.com.au/consumers/findaninstaller
- Designer/installers are also required to install the system in accordance with the Clean Energy Council's Installation Guidelines for Accredited Installers and Supervisors. These guidelines are updated regularly to reflect current industry best practice.
- An installation report, consisting of a checklist of works carried out and a declaration from the installer that works have been performed in accordance with relevant standards, should be provided. Schools should retain this report for their records.
- The Clean Energy Council has the ability to suspend or cancel accreditations if suitable work is not carried out.
- State and territory electrical authorities are responsible for electrical safety and may conduct an inspection of the system. To find the relevant authority in your state, see page 24 of the Consumer Guide www.solaraccreditation.com.au/consumers/consumerguide
- The Commonwealth may also inspect the system to confirm it complies with relevant Australian Standards.

FAST FACT: There are over 4500 accredited designers/installers across Australia. To find one in your area visit www.solaraccreditation.com.au/consumers/findaninstaller

How do I resolve concerns, complaints or disputes?

If you have concerns about your solar PV system, contact your installer in the first instance. The Clean Energy Council deals with complaints involving a breach of the accreditation rules, accreditation Code of Conduct or relevant Australia Standards, while consumer affairs agencies will deal with disputes of a commercial nature.

For a full list of relevant regulatory authorities in your state or territory see pages 23 -26 of the Consumer Guide www.solaraccreditation.com.au/consumers/consumerguide



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What government schemes are in place to lower the cost of purchasing a solar PV system?

The cost of solar panels has continued to decline over the past decade with support from different government incentive programs, increased diversity in the market and reduced technology costs. There are a range of government programs and schemes designed to reduce the purchase cost of solar PV systems or pay you for the electricity your system generates (known as feed-in tariffs). These vary between states and territories. See 'What government schemes are in place to lower the cost of purchasing a solar PV system?', Consumer Guide, pages 6-11 for more detail www.solaraccreditation.com.au/consumers/consumerguide

How do I install a solar PV system?

1. Conduct your own research into the benefits of having a solar PV system installed. In particular, you should ensure that you understand what will happen to your meter, your electricity tariff and your electricity bill before you agree to have a PV system installed
2. **Contact several Clean Energy Council accredited designer/installers for a quote. A list of accredited designer/installers in your area can be found at www.solaraccreditation.com.au**
3. Ask informed questions (see Questions to ask your Designer/installer, Consumer Guide, page 18) then select an accredited designer/installer
4. **The accredited designer/installer designs a PV system to meet your requirements**
5. You, or your accredited designer/installer, apply for any applicable rebates (see What government schemes are in place to lower the cost of purchasing a solar PV system?, Consumer Guide, pages 6-11)
6. **You, or your designer/installer, complete the connection and approval process for your electricity retailer and electricity distributor. This process varies between states and territories (see Flowcharts for the Connection Procedures of each State and Territory at www.cleanenergycouncil.org.au/cec/resourcecentre/Consumer-Info/connecting-to-the-grid)**
7. The CEC accredited designer/installer completes the installation of your solar PV system
8. **The designer/installer contacts your electricity retailer or electricity distributor to arrange for your new meter to be installed (see 'Questions to ask your Electricity Retailer' or 'Questions to ask your Electricity Distributor', Consumer Guide, pages 21- 22)**
9. An appropriate qualified professional installs your new meter
10. **Your solar PV system is now ready to produce electricity**
11. You enter a Feed-in Tariff Agreement with your electricity retailer (see 'Questions to ask your Electricity Retailer', Consumer Guide, page 21)
12. **Depending on which state you live in, your local electrical authority may conduct a safety inspection of your solar PV system**
13. Schools are advised to view the electricity generated by the solar PV system to confirm the output is as expected
14. **Talk to your installer about how to maintain your solar PV system to ensure the optimum level of performance.**

NOTE: This process may vary slightly between the states and territories.



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How do grid-connected solar PV systems work?

Most homes and schools in Australia are connected to the electricity grid, which uses alternating current electricity (AC). But the electricity generated by solar panels is direct current (DC). That means grid-connected solar PV systems need an inverter to transform the DC electricity into AC electricity.

When the panels are not producing electricity at night, electricity is supplied from the grid. For systems with a battery backup (optional), the inverter regulates the charge of batteries. The electricity stored in the batteries can be used at night or during blackouts.

How much power do they generate?

The output of a solar PV system depends on its size. The most common systems in Australian schools are over 5 kilowatts. Your accredited designer/installer can help you choose a system based on your school's needs.

What size solar PV system should I install?

The size of your solar PV system will depend on:

- the physical area available for the installation of your panels (it must be unshaded)
- how much you are prepared to spend
- what portion of your electricity you wish to generate

To work out what size solar PV system you require, you should assess your school's daily electricity consumption. Your monthly or quarterly electricity bill measures your school's electricity consumption in kilowatt hours. From this figure, you can calculate your average daily electricity consumption, and the average amount of electricity your solar PV system needs to produce to offset your electricity needs.

FAST FACT: Your accredited designer can assess which size system will best meet your needs.

What is a fair price to pay for a solar PV system?

Buying a solar PV system is no different to any other major equipment purchase. The cheapest option might be fine for some purposes, but not for others. You should shop around for the best deal but remember that the system price shouldn't be the only factor in your decision. The quality of panels and inverters can make a big difference to the performance of the system.



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