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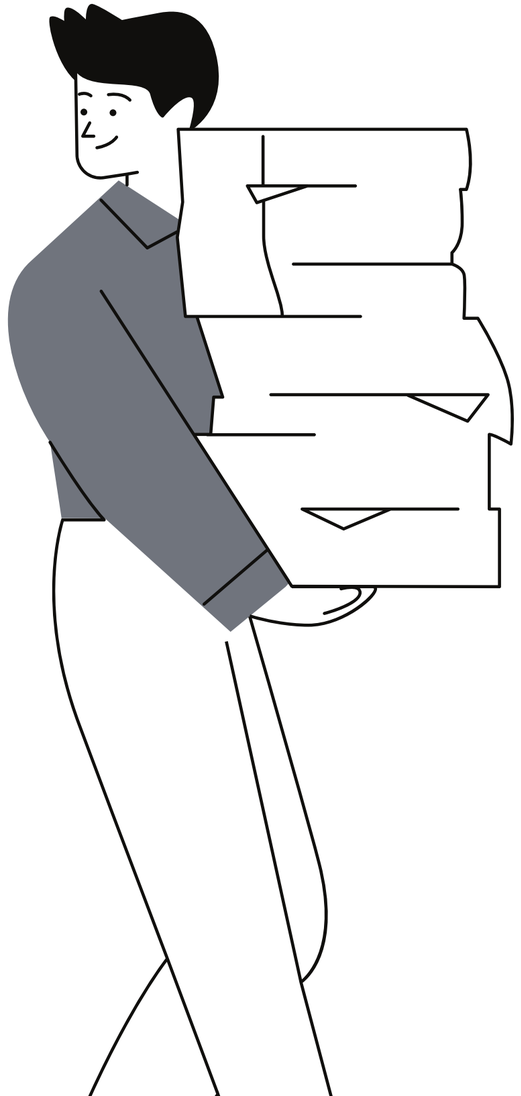
Solar Basics

A Beginners Guide to Rooftop Solar



Introduction

Interest in rooftop solar is growing at a fast pace in Australia because of the ways it can save money and reduce emissions.

We've put together this guide to demystify some of the jargon, and help you decide if it's right for you.

Let's Start!

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1. How Does A Solar PV System Work?

Solar panels are designed to generate electricity from sunlight through photovoltaic (PV) cells.

The electricity generated by PV cells gets transported to an inverter, which changes it from DC (direct current) into AC (alternating current). This makes it suitable for our appliances and compatible with the electricity grid.

Any unused solar electricity can be fed back into the electricity grid / network, or else stored in a battery so you can use it later.

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SYSTEM TYPES:

Solar power systems can be either standalone or grid-connected. Standalone systems are usually installed in regions where grid supply is limited, which means they need to be backed up by storage batteries or a generator. With a grid-connected system, you can draw on network power when the sun isn't shining (or use power from your battery if you have one).

SOLAR PANEL TYPES:

The most common types are monocrystalline and polycrystalline. Monocrystalline panels are slightly more efficient and also more expensive. Click Here There are also other types, but the important thing here is to get good quality solar panels with long warranties.

INVERTER TYPES:

There are two types - string and micro inverters. Click Here
String inverters operate as a central device in that all the panels connect up to it. Micro-inverters on the other hand are fitted onto the back of each solar panel, which makes it more expensive. Inverters work hard and this means they are the component most likely to wear out first. So, it's important to get high quality inverters.

→ 2. Types Of Systems And Components.

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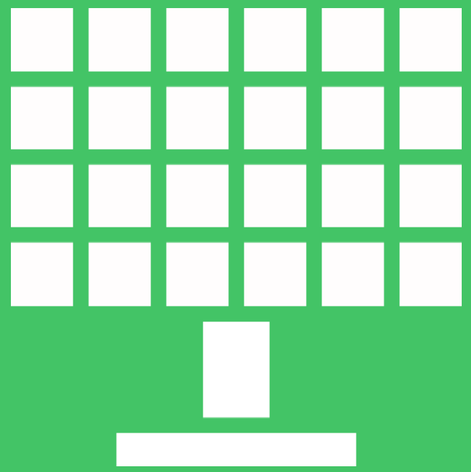

3. HOW MANY SOLAR PANELS SHOULD YOU BUY?

With solar installations it's not so much the number of panels that matters but the kilowatt (kW) capacity of the system. Factors affecting this include your household's electricity use, your location, and how your roof is oriented. This means there is no one-size solution for every building. However, 6.6 kW systems are currently a popular size, paired with a 5kW inverter. This amounts to approximately 18 to 20 solar panels.

4. ROOF ORIENTATION AND PANEL ANGLE

The ideal roof orientation for solar is north-facing, as then the panels will reach peak power at midday. Solar can still be very suitable for other roof orientations though. For example, it might suit you to have east-facing panels if your power needs are highest in the mornings. Panel angle can also make a difference for capturing sunlight, with the ideal angle being close to your location's latitude. In most cases, the roof's slope should be enough. However, if your roof is flat, you may need to use tilt-frames.

5. WHAT ARE FEED-IN TARIFFS AND HOW DO THEY WORK?

Feed-in tariffs are the amount you can earn per kWh (kilowatt hour) of electricity you export to the network. This varies between retailers, states, and time periods (e.g. peak vs off-peak). It can range from zero to about 18 cents per kWh. The tariff scheme means you can earn some money from any excess unused power you generate from your solar panels and reduce your bills.

6. The Solar Rebate: It’s Still Here And Very Worthwhile!

To qualify for the federal government solar subsidy, you must use Clean Energy Council (CEC) approved installer and CEC-approved panels.

How it works is that with a solar installation you are entitled to a certain number of STCs (small-scale technology certificates). Your Solar PV retailer trades your certificates for cash and deducts the value from the cost of your system, providing a substantial discount. This can amount to about a third of the cost of a 6 kW system.

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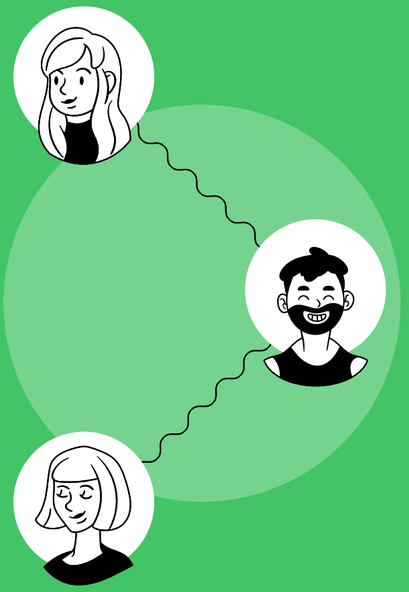

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7. Payback Period And Savings From Solar.

Since you get to generate your own electricity for free with solar, it means you can save a lot on your energy bills.

Your payback from solar depends on several factors, including region, electricity usage and costs, feed-in tariffs, and system size. The average payback period for solar in Australia is four to seven years, but it can be lower than four years in some cases.

8. Batteries: Are They Worth It?

A solar battery can give you more independence from the grid and save you a lot on energy costs.

Batteries are expensive though and can take years to pay for themselves. For example, it can currently cost as much as $11,000 for an 8kWh battery (not allowing for state government rebates).

The price of solar batteries is expected to fall in the coming years, so it could be worth waiting, depending on your goals and needs.

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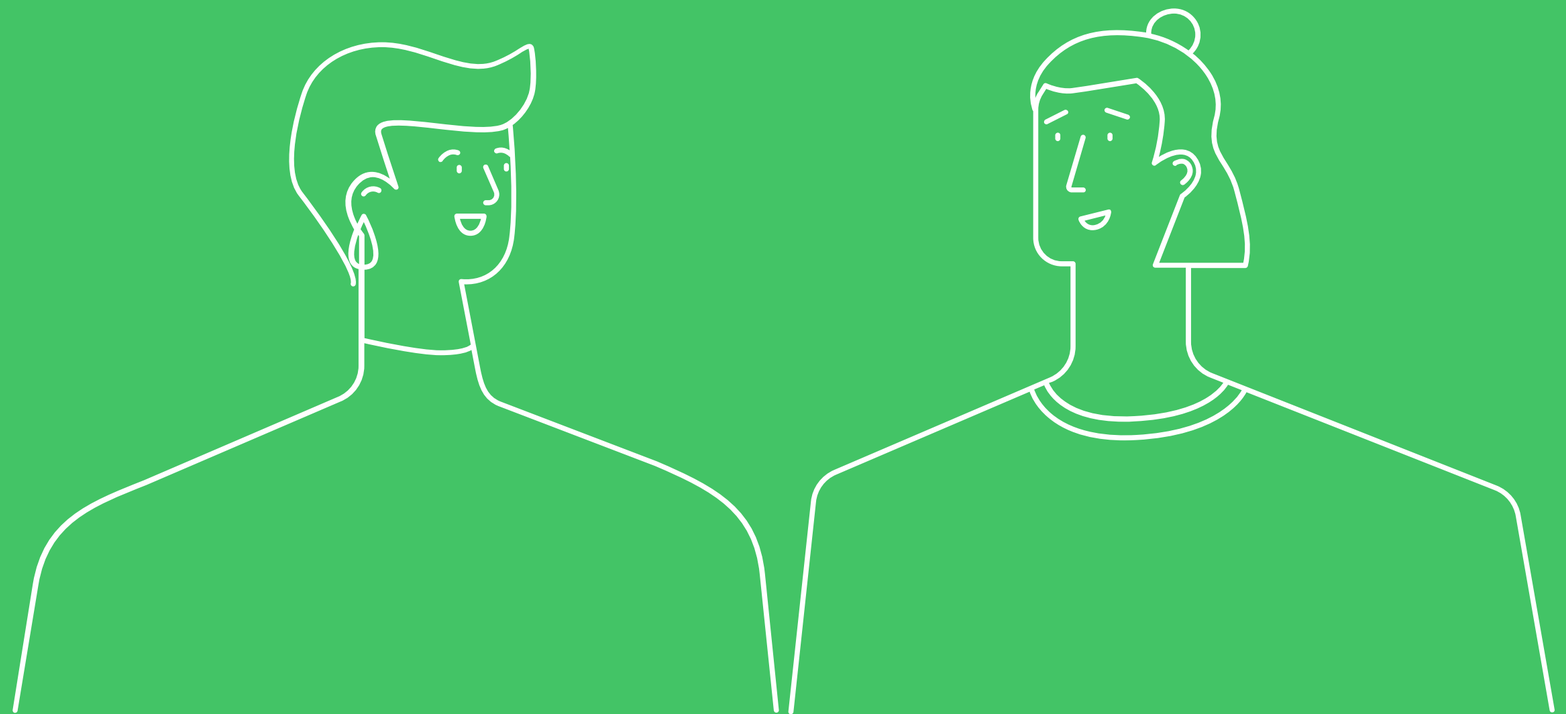

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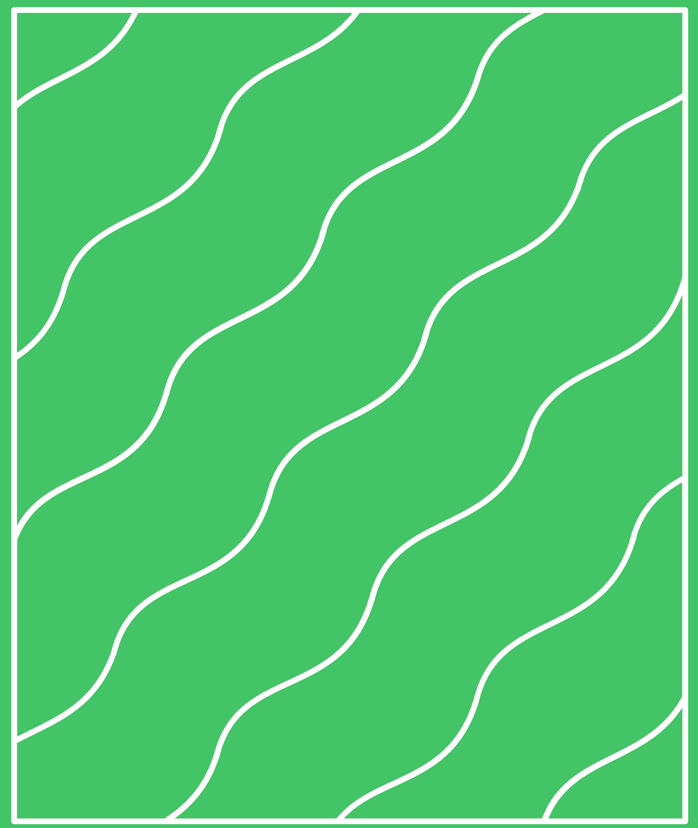

9. System Maintenance: What Is Required?

Maintenance should include panel cleaning, inspection of components and wiring, and checking for defects, corrosion, detachments and more.

Your retailer or installer should provide you with documentation on how your system should be maintained to keep it safe and efficient.

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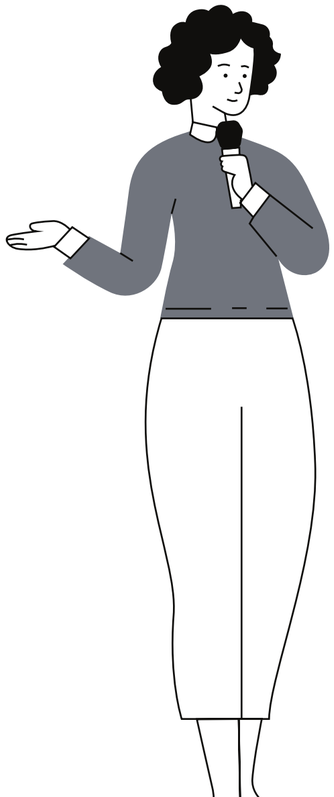
10. What Warranties Are Available?

There are several types of warranty.

For example, quality panels have product warranties of up to 12 years, and performance warranties up to 25 years. Quality inverters come with warranties of 5 -10 years. You should discuss installation warranties with your retailer or installer.

Would you like to find out more about solar installations? Complete our contact form.



We're done!

Thank you for participating. Have a great day ahead.