Solar PV Going Deeper

energy efficiency

This FAQ covers common topics of discussion for homeowners that have done some investigation and are ready to install solar.

How much energy will a solar PV system provide?

The industry rule of thumb is that 1000 watts of panels in a "full sun" location will provide – on average – 4 kilowatt-hours of electricity per day. More will be generated in summer, and less in winter. Contractors can use instruments during a site inspection to calculate these figures specific to your home. It is important to note the energy production peak is in the middle of the day, and your solar installer can work with you to see which appliances can make best use of solar power at different times of the day.

What warranties are available with solar panels?

Solar panels have a two tiered warranty arrangement (in general) with 10 years product warranty and 25 years energy production warranty. This means for 10 years the product is covered like any other warranty in Australia (like that of your fridge) whereas from 11 years - 25 years the output energy is guaranteed at an agreed level, assuming other components remain intact. Things like labour are not normally covered in the second stage of the output warranty.

You should consider the financial position of the provider when evaluating the value of extraordinarily long 30 year warranties – the time period is so long that it would be hard to guarantee companies would still be around at that time to assist.

What warranties are available with grid connect solar inverters?

The inverter is typically offered with a 5 year parts and labour warranty, with many offering an upgrade to 10 years. With solar panels lasting 20+ years, this means inverter replacement at the midpoint of the system's life is probable. If the inverter brand is a strong, recognised global company investing in a 10 year warranty is recommended.

What should I look for in a solar contractor?

Retailers of solar energy systems should be licenced electrical contractors, and there should be an accredited installer and electrician onsite at your job during erection of the system. For national retailers, the industry body operates scheme known as the Clean Energy Council Approved Retailer program. It is recommended home owners get three quotes from licenced providers and also make enquiries with friends, family and forums to identify contractors that have a good track record. You can find accredited installers using the "Find an Installer" function of the website www.solaraccreditation.com.au

What should I consider when planning the layout of the solar panels?

You should discuss the layout of your panels with your provider and ideally signoff on a diagram or mud-map showing the rough position of solar panels. Future possible chimney, flue or skylight locations should be considered and the design should allow access to panels in the middle of the layout if future maintenance is required. This may mean reducing the number of panels to ensure practical maintenance can be completed.

A good question to ask is: How would you as the installer conduct any maintenance or replacements in the future?

What should I consider when planning a location for the solar inverter?

Solar inverters are like computers that convert energy; for this reason it is best to keep out of direct sun. Although inverters are "outdoor rated", manufacturers normally specify being installed in shady locations with good clearance to provide ventilation. Sometimes, contractors will suggest installing near to the meterbox to avoid voltage drop. Voltage drop can also be overcome with thicker cable.

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So, if the inverter will be located on a shady southern wall, and the meterbox is elsewhere, normally a thicker cable can be run from that location to the meterbox. Stand your ground on this issue as cool inverters last longer.

What considerations should apply for other items?

Water ingress is a common issue for all types of outdoor equipment, including switches for solar equipment. The industry installation guidelines specify that any conduit entries to switch enclosures should come from the bottom of the switch enclosure.

So, if any switches are outside and conduit exposed to rain will be entering junction boxes and switchgear, request that the pipework enters the bottom to avoid water tracking the pipes into the top of the enclosures.

Also, request the installer to use switchgear from established multinational groups that have a good track record in this category. Many cheaper options in breakers and isolators have only been available for a few years.

What can I do to be ready for future battery systems?

It is expected that most future battery systems will operate like appliances; this is referred to as AC coupling. In basic terms, this means the battery could operate independently of the solar generator. Therefore, it is not necessary to purchase a battery inverter now if you will be installing batteries in 5 years time.

If you are building a new home, it will be helpful to allow room in the meterbox or install a larger meterbox – this is because battery systems typically require more circuit breaker spaces.

You could consider installing a private energy meter at the same time as your solar generation system; this will provide you with accurate information about how your solar system generation is used in the house (is there any surplus?) and how you use power at night. Such information could then help you choose the right battery in the future.

What financial incentives are available?

When you use solar energy instead of grid power, you save at the rate you otherwise would have paid for the electricity (this is typically 25c/kWh - 50c/kWh depending on your plan). If there is surplus power sold to the grid you are normally paid between 6c/kWh and 12c/kWh. There are also upfront incentives when you buy the system, known as STCs. The STCs have a value per STC and the quantity of STCs you receive is in proportion to the system size. In general terms, you can expect to receive approximately $700 per kilowatt of system power; ask your installer for precise details.

Is there any change to the electricity company metering?

Yes. Normally a meter change is required. As changes to these arrangements are occurring in 2018, please discuss the exact requirements for your home with an installer.

Please note that for meterboxes with asbestos or very high placement (eg above doors) it may be necessary to move or replace the meterbox, in order to provide a safe working environment going forward.

FAQ's

from the Alternative Technology Association

www.ata.org.au/news/solar-frequently-asked-questions