

FAQs

Solar Power



How much energy will our solar power installation generate?

The amount of solar power your system will generate depends on a number of factors; your location, the size of your solar array and inverter, the pitch and orientation of your array, the amount of shading on the array if any (any shading is bad, so the less the better), how clean your panels are, the efficiency of your inverter, the cable size and length of cable runs, cloud cover, time of the year, ambient temperature and panel and inverter quality. But don't worry, even though there are many factors that will affect your output, once Infinity understands more about your individual situation they can provide an estimation of your generation.

Will our system work at night?

No. Once the sun is down your system will shut down for the night. If you watch your inverter at dawn and dusk you will see and hear it performing a series of tests before it either goes to sleep for the night or starts up ready for another day of generation. At night your business will be consuming power off the mains grid. This transition happens seamlessly without you having to worry about any input from you.

Will our system work on cloudy dates?

Yes, however your power generation will be reduced. Shading from a tree or building will also give you reduced generation.

Will our solar power system working during a blackout?

The answer to this really depends on what type of solar power system you have. A standard grid-connect system will shut down as soon as the mains grid goes down (as it does during a blackout). There are two reasons for this. Firstly, the solar inverter requires the grid power as a reference point, so with no grid power present the inverter will shut down. Secondly, and most importantly, if a grid-connect system was to export power during a blackout there is a real risk that this exported solar power could create a deadly situation for the linesmen that are repairing the cause of the power outage.

During a power outage a battery back-up system will immediately switch over from grid power to the battery bank. A correctly sized battery back-up system will allow you to operate a number of pre-determined electrical appliances for a chosen amount of time. If a system is not designed correctly you could be left with a system that will not supply enough back-up power for your requirements so the correct sizing of a battery back-up system is extremely important.

Who will buy our excess power?

This will all depend on which state you're in. In Queensland, you get 8cents per kW if your system is less than 5 kilowatts. New South Wales does not currently have a feed-in tariff and in the Northern Territory you are paid at the same rate that you draw power from the grid. However, in Queensland different retailers i.e. Origin, AGL, offer different internal feed-in rates so it is well worth talking to Infinity before making any changes to your regular retailer.

Do the panels need to be mounted on our roof?

No, however most solar power systems are. Over the years Infinity has installed panels on to all sorts of structures across Australia. Infinity offers the German made Sonnen Systeme dual axis trackers that can increase your generation by up to 40%. They also offer the German made Schletter ground mounted system that is the perfect large ground mounted system. In recent years Infinity has also seen a large number of farmers build new sheds not just for space but to provide an area for installing their solar panel array on to.

Why are there so many different solar panels on the market?

Infinity has been getting asked this question for the last few years only, as previous to this there were only a handful of panel manufacturers represented in Australia. This has now all changed and the number of grid-connect systems being installed has increased dramatically, with many of these using substandard products and installation practices. The massive growth in grid-connect systems is no different to what happened with the roof



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insulation scheme. As soon as the Federal Government introduced an incentive to install roof insulation the market was literally flooded overnight with cheap, poor-quality insulation. Unfortunately, this is very similar to the current grid-connect market. Australia has quickly become the dumping ground for poor-quality solar panels. In general the Australian market is still happy to accept poor quality, under-performing panels. When you're researching your solar system, please spend some time investigating the history and R&D budget of the solar manufacturers on your short list. Just because a panel is listed on the CEC approved panel list DOES NOT mean that it is a quality panel.

How does a solar power PV system work?

Put simply, solar power installations use solar panels, some wiring and electronics to convert energy from the sun into electrical energy. The solar modules create DC power (similar to batteries) and the inverter is used to convert this DC power into AC power, identical to the existing mains power supply connected to your house. During the sunlight hours your solar power system will be at its optimum production level; if your solar power system produces more electricity than your home or business is currently using, your electricity retailer may allow this excess power to be fed into the main grid network. If you are consuming more electricity than your system can produce you will simply be substituting your solar power for the power you would have consumed from your retailer. In many cases, the cost of the solar power is cheaper than the cost of power from the grid so it can save you money immediately. During all other times when the solar power system is not operating (i.e. at night) you will continue to consume the mains power as supplied by your retailer as per normal.

What do the terms 'grid-connect' and 'off-grid' mean?

The term grid-connect refers to a power installation that is connected to the main utility power grid, which is the power system that all homes and businesses are connected to. Our solar power systems are designed as on-grid systems, meaning that they interconnect with your existing power utility provider. Off-grid or stand alone refers to systems that are not connected to the utility electrical grid and are commonly used in remote areas.

Does the solar system require maintenance?

Once the system has been installed there is little ongoing maintenance that is required. The only item that may need attention, depending on the installation, is to clean the solar panels. An angle of about 15 degrees should aid some amount of self-cleaning. Infinity personnel can be arranged for periodical maintenance if desired.

Can we monitor our solar system or power consumption remotely?

Yes, there are wireless displays available, which are very cost effective. With a monitoring system from Infinity, it will allow you the ability to accurately monitor your system, regardless of whether you want to monitor the yield of a home roof system or of an open-field solar power station. Live output data and past outputs are available on the monitor. This will clearly indicate the performance and benefits of your system.

Infinity's products for system monitoring offer you the widest range of possibilities: wireless or internet based, compact or complex, concise or elaborate.

How much roof space does the system need?

A 1kW solar array will require around 8 square metres of roof area, and a 1.5kW solar array requires around 12 square metres, but this does depend on the solar panel wattage that can be installed on your roof.

Can we have a solar PV system on our company's roof and still be connected to the grid?

Yes, most solar PV systems are designed as grid-connectable systems. This means the solar power systems are designed to interconnect with the main electricity grid.

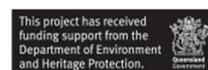
Can we be totally independent from the main power grid?

Infinity can design a solar PV system that is off-grid or hybrid. Off-grid and Hybrid systems must be custom designed and are normally suited to remote locations where no electricity grid is available. These systems will require power storage capabilities such as batteries to supply the power when the sun is not shining, wind is not blowing or a generator not running.



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What does PV stand for?

PV is the short term for photovoltaic, which is the technology used to capture the sunlight and converting sunlight photon energy into electrical current.

Will bad weather such as hail damage my solar panels?

No. Infinity only partners with high quality solar panel manufacturers whose panels are tested in tough conditions and are guaranteed to withstand hail. In cyclone affected regions such as the Top End, only a few solar panels are allowed to be installed, therefore, our supplier Q CELLS has the cyclone rating so you don't have to miss out on the savings when you live in Darwin.

How can we reduce the demand charges on our bill?

For many larger businesses on negotiated power tariffs, the demand and network charges are a large portion of the bill. Infinity works with businesses across all industries to develop a solution that can reduce these expense charges. Each solution is tailored to the business being reviewed, but generally it will include a number of technologies that ensure you can reduce your maximum demand in a period without affecting how you do business.

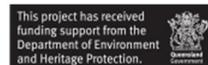
What size solar power system do we need to power the business?

Every business is different; everyone's needs are different, so it all depends on how your business uses its power and what sort of impact you expect from the system. Infinity Power can work with you to customise each system to fit your needs and budget. A good starting place is to analyse your power bills. Furthermore, Infinity is able to professionally audit your power consumption in advance to advise on your requirements.



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