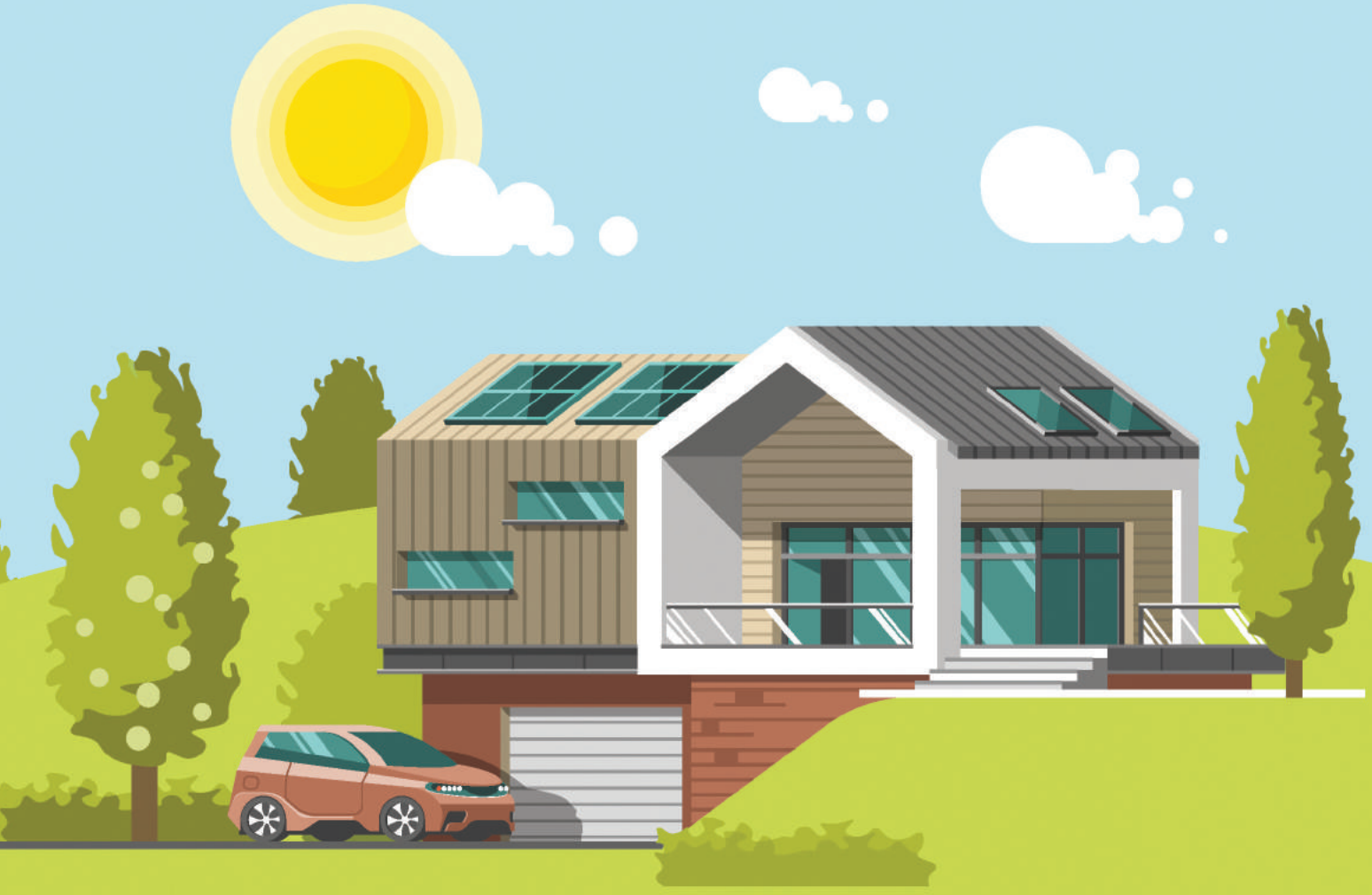
YourSolarQuotes
sustainably powering our future

SOLAR IN 2019
THE DEFINITIVE GUIDE



2019 MUST READ SOLAR GUIDE

CONTENTS

YourSolarQuotes
sustainably powering our future

YOUR SOLAR QUOTES
WHAT WE DO

We're an energetic team of engineers, environmental warriors and customer service professionals who are dedicated to moving Australia towards a more sustainable future. As the people's champion of the solar industry, we bring passion and innovation to the biggest problems that homeowners face when searching for solar power. We love solar, and we are the much needed independent voice that helps thousands of Australians every month make their search for solar power an educational and overwhelmingly positive experience.

OUR MISSION

We are facing an unprecedented climate emergency that is causing an immediate and direct threat to life on our planet. Our mission at Your Solar Quotes is to **reduce Australia's dependence on fossil fuels and help people harness clean, renewable energy from the sun.**

We have done the due diligence and worked hard to find the solar companies who will go above and beyond for our customers. Our business values transparency, fairness, customer service, and accountability, and we look for these same values in the solar companies that we recommend.

We believe the search for solar should be an educational and hassle-free experience. Using our customer feedback system, we champion the solar companies who are highly effective at what they do - ensuring that our customer's search for solar and our collective future is in safe hands.

WHY WE CREATED OUR FREE GUIDE?

The development of the solar industry in Australia has been quite extraordinary. In just a few short years, solar energy has established itself as a reliable and obvious way for consumers to take control of their power bills. Generous government incentives and continually falling solar panel prices have propelled the uptake of solar power and now more than 2 million households are enjoying the benefits of living under a solar roof.

Australia has the highest uptake of solar globally, with more than 21% of homes now enjoying the benefits of living under a solar roof! **As at 30 September 2019 more than 2.21 million rooftop solar power systems have been installed across the country.**

With such a huge market and an abundance of different solar solutions to serve homeowner's needs, it is necessary to have a basic understanding of some crucial factors such as:

- Benefits of solar energy
- Components of a solar system
- Brands you can trust
- Rebates and incentives available to the homeowner
- Tips on how to get solar quotes from reliable installers

We are experts in solar power and we have distilled our knowledge of these concepts into our must-read solar guide designed to help you make an informed decision on solar power.

1. BENEFITS OF SOLAR AT YOUR HOME

Before jumping into the different types of solar you can install at your home, we must first understand why it makes sense to install solar power.

SAVINGS IN ELECTRICITY

Australia has some of the highest energy prices and also the highest solar radiation of any continent in the world, putting us in a unique position to harness the sun's energy and benefit the back pocket. A well-designed system can save you up to 70% on your power bills and protect you from continually rising electricity prices, making the decision to install solar power a no-brainer.

SOLAR POWER IS A GREAT INVESTMENT

Solar systems pay for themselves with energy savings in 3-5 years if used wisely and installing solar power also increases the value of your greatest asset. We recommend optimising the time of day when you consume most of your electricity in order to achieve a return on investment of 20-30%!

SOLAR PANELS ARE BUILT TO LAST

Solar panels are extremely durable and they come with a 25 year linear efficiency warranty, which means all solar panels must perform at 80% of their efficiency by the 25th year of electricity production!

SOLAR ENERGY IS RENEWABLE

We are lucky enough to live in one of the most naturally beautiful countries in the world. Powering your home with solar power will protect our pristine natural environment for generations to come because solar power is a renewable energy source that does not produce greenhouse gas (GHG) emissions.

2. COMPONENTS OF A SOLAR POWER SYSTEM

YourSolarQuotes
sustainably powering our future

THE PANELS

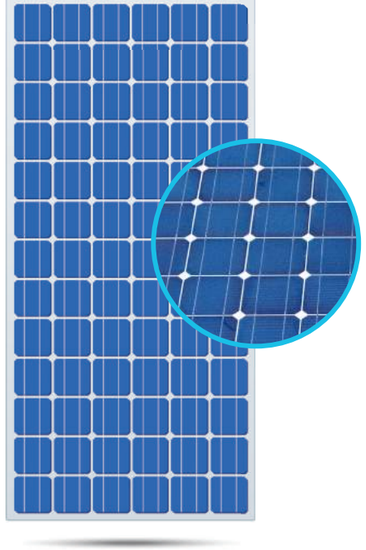
Solar panels are usually mounted on your roof and they transform the incoming sunlight into electricity. There are 2 main types of solar panels to choose from, mono-crystalline and polycrystalline and both come with a 25-year efficiency warranty. Some salespeople will try and tell you that one type (the one they are selling) is far superior to the other - however, they are both great in the Australian climate.

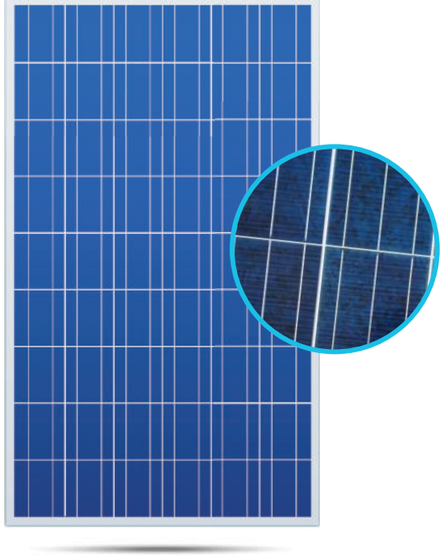
MONOCRYSTALLINE

These solar panels are made from a single silicon crystal and have a black appearance

POLYCRYSTALLINE

These solar panels are made up of multiple silicon crystals and have a dark blue appearance.





Monocrystalline and polycrystalline panels are both great in Australian conditions. The key thing you need to consider when buying solar panels is choosing a good brand that will last.

THE INVERTER

The inverter is the brain of your solar system. It converts electricity from the solar panels into electricity that can be used in the home. There are 3 types of inverters - string inverters, micro-inverters and power optimisers.

STRING INVERTER

A string inverter is installed on a wall and each 'string' of panels connects to this central unit. The efficiency of each 'string' of panels is determined by the efficiency of the lowest-performing panel so if one panel isn't performing well (due to shading or a faulty connection) then the output of that entire 'string' of panels will be brought down. This style of an inverter is great for roofs that don't have shading issues.

MICRO-INVERTERS

Micro-inverters are a relatively new concept whereby instead of having one big central inverter, there is a small inverter installed on the back of every solar panel in the system. Having many small panel-level inverters means that the power output of every panel is independent of each other at all times. This avoids power losses from shading issues and provides a higher level of reliability because if one solar panel fails, the rest of the panels in the system won't be affected. Due to this, the efficiency of each individual panel is optimised, resulting in more power output from your system. Micro-inverters also provide an added level of safety, as there is no high DC voltage by design and they automatically shut down the entire system if there is a major fault. These added benefits come at a price and you can expect to pay an additional 20-30% on the system cost for micro-inverters.

POWER OPTIMISERS

A power optimiser system is a string inverter on the wall, and also DC power optimisers on each individual panel. Power optimisers work in a similar way to micro-inverters because they optimise each panel individually, resulting in more energy production. Power optimisers also provide an added level of safety due because they automatically shut down the entire system if there is a major fault. You can expect to pay an additional 25% on the system cost for power-optimisers.

'BATTERY-READY' INVERTERS

All grid-connected inverters are battery ready. If you'd like to connect batteries to your system at a later date you can do this using an AC coupling to a battery inverter.

Which type of inverter will best suit your needs?

- If you have a relatively simple roof with no shading we would recommend installing a string inverter.
- If you have a complicated roof with many faces or multiple items that could cause shading throughout the day - we would recommend installing micro-inverters or power-optimisers.If your roof space is limited and you'd like to maximise the amount of power output of your system (up to an additional 10% more energy production) we'd recommend installing micro-inverters or power-optimisers.

> ***Micro-inverters and power optimisers will give you approx 10% more energy production than string inverter systems but micro-inverters and power optimiser systems are 20-30% more expensive. After you've decided which type of inverter you require, the key thing you need to consider when buying an inverter is choosing a good brand that will last.***

SOLAR BATTERIES

Solar batteries are becoming increasingly popular due to powerful marketing by the biggest brands in the energy storage market. There are some incredible solar battery technologies from brands like Tesla, LG, Enphase and Redflow; however, battery storage for your home is still quite expensive and will add an additional $8,000 to $12,000 to the total system cost.

> ***The payback period for a hybrid solar system (with batteries) is 10+ years. For this reason, we recommend installing a 'battery ready' system that will pay for itself in 3-5 years and install batteries to your system at a later date once they become cheaper.***

3. DIFFERENT TYPES OF SOLAR PV SYSTEMS

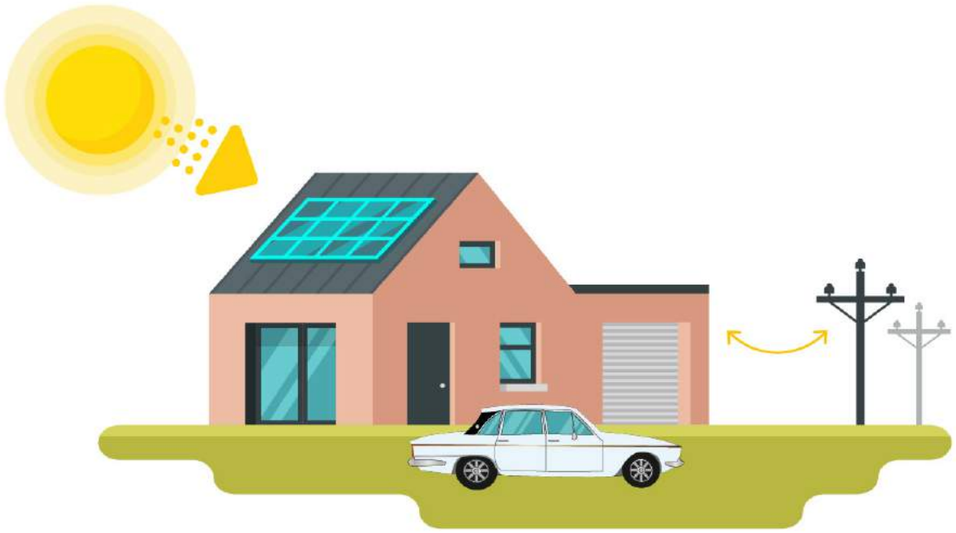
There are 3 principal types of PV systems available in the market. Each one of them serves a different purpose and are designed to be used for different situations. Let's analyze them.

GRID-CONNECTED SOLAR PV SYSTEM

The first and most common type of solar power system is the grid-connected solar system.

Grid-connected systems consist of solar panels, an inverter and an energy meter. With this type of system, the power produced by the solar panels instantaneously supplies the household's energy needs and any excess solar energy will pass through the bidirectional meter and get fed back into the electricity grid.

Your electricity retailer will pay you a small rate or 'feed-in tariff' for the electricity that you feed back into the grid - more on this later.

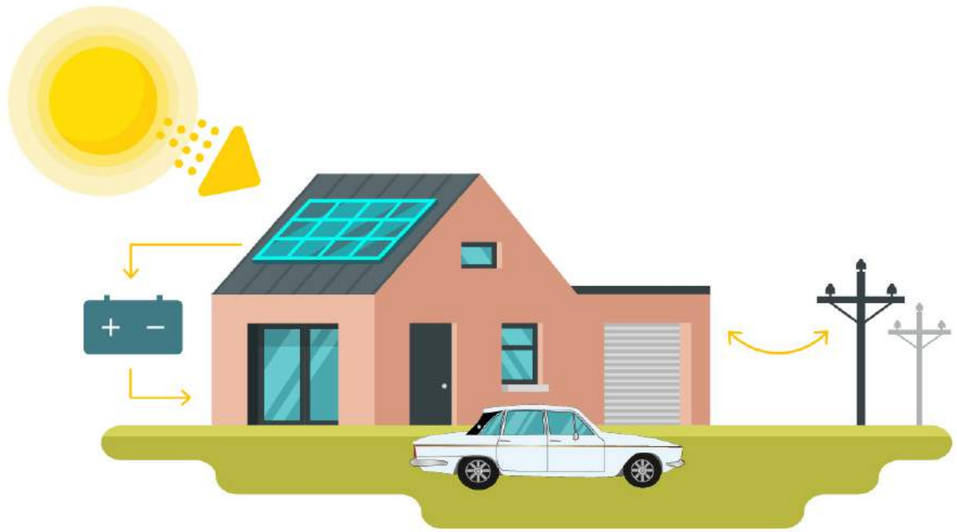


GRID-CONNECTED SOLAR PV SYSTEM WITH BATTERY BACK-UP

The second type of solar power system is the hybrid solar system (or grid-connected system with battery storage).

Hybrid solar systems consist of solar panels, an inverter, an energy meter and a solar battery (generally lithium-ion technology). With a hybrid system, the power produced by the solar panels instantaneously supplies the household's energy needs and any excess solar energy will be stored in the solar battery instead of being sent back into the grid. The energy stored inside the battery is then used to power the household's energy needs during the evening.

If for any reason you require more power then you have stored in the battery, you can draw power from the grid. Hybrid solar systems currently cost at least twice as much as a standard grid-connected system so a lot of homeowners are installing a 'battery ready' system and waiting for the price of batteries to come down.

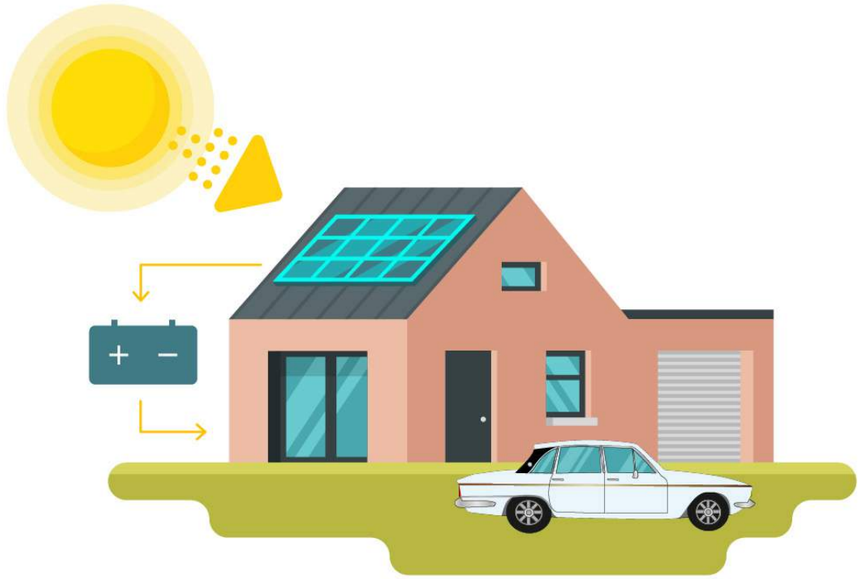


OFF-GRID SOLAR PV SYSTEM

The third type of solar power system is the off-grid solar system (or stand-alone system).

This type of solar system is completely isolated from the grid. The purpose of off-grid systems is to provide power and energy where there is no access to the electricity grid (remote areas) or when the cost of the energy retailer providing power lines to the property is prohibitive. Off-grid systems consist of solar panels, a charge controller, a battery bank and an inverter.

Off-grid systems are far more expensive than grid-connected systems so it is important that your solar needs fit the purpose of this type of system.



STC'S (FEDERAL GOVERNMENT)

You are entitled to the Federal Government's hugely popular 'solar rebate' when you install solar power at your home! The 'rebate' or Small-Scale Technology Certificate (STC) Scheme is extremely generous and you can claim $4000+ on a 6.6kW system depending on where you live! Your chosen solar company will handle the application for the rebate on your behalf and apply the value of your rebate as a discount at the point of sale.

Things to know about the rebate:

- The more power your solar system generates, the greater the size of your rebate. So if you are located in sunny Queensland, you'll receive a larger rebate than your Tasmanian counterparts.
- The more solar panels you install, the greater the size of your rebate.
- The rebate is being phased out over the next 12 years, by December 2030 this rebate will no longer exist!
- The advertised prices you see and quotes you receive will already have the rebate factored in.

To be eligible for this rebate:

- Your system must be designed and installed by a Clean Energy Council (CEC) accredited professional (we have done the due diligence and every solar company we recommend is CEC accredited).
- Your system must use CEC approved panels and inverters

> ***The CEC Design Guidelines allow you to install one third more panels than your inverter is rated at. For this reason, we recommend 'overclocking' your inverter to allow you to claim 33% more solar rebate and this will also help you produce to more power during low light conditions. The common system size of 6.6kW of panels installed on a 5kW inverter is a classic example of overclocking.***

STATE LEVEL SOLAR REBATES & GRANTS

The following State Government solar rebates and grants are offered on top of the Federal Government's 'Solar Rebate'.

AUSTRALIAN CAPITAL TERRITORIES (ACT)

Solar for Low Income Program - eligible participants are able to access a subsidy of up to 50% of the total cost of a solar system (capped at $2500) along with a three-year interest-free loan to pay off the difference.

Next Generation Energy Storage Program - this program offers $825 per kW (up to 30kW max) for 5000 ACT homes and businesses to install solar battery storage.

NEW SOUTH WALES (NSW)

Empowering Homes Program - this program offers interest-free loans of up to $9,000 per battery system and up to $14,000 per solar + battery system for 300,000 NSW homes in a scheme to be rolled out over the next 10 years.

Solar for Low-Income Households (trial) - this program offers a free 3kW solar system to 3,000 NSW households that opt for a free solar system instead of the low-income household rebate. This scheme is currently in a trial phase and will only be available for people that live in the Central Coast, North Coast, Sydney-South, Illawarra-Shoalhaven and in the South Coast of NSW.

SOUTH AUSTRALIA (SA)

Home Battery Scheme - this program offers SA residents a subsidy of $500 per kWh or $600 per kWh (energy concession holders) up to a maximum of $6,000 on the cost of solar battery storage with a low-interest loan if needed. Up to 40,000 homes will be eligible to take part in this scheme.

Virtual Power Plant Scheme - this program is open for SA residents to register their interest. By creating a network of solar PV and battery systems working together to generate, store and feed energy back into the grid, a virtual power plant will be created. If the trial is successful on the 1,100 SA Housing Trust Households expected to be installed by October, 2019, the program could be rolled out to a further 49,000 properties.

QUEENSLAND (QLD)

Solar for Renters (trial) - rebates of up to $3500 are available to landlords that install a solar system on their rental property. During the trial phase, the rental property must be located in the Bundaberg, Gladstone or Townsville local government areas. There are 1000 rebates available during the trial of this scheme.

VICTORIA (VIC)

Solar Panel Rebate - households that have not had solar power installed previously will have access to a 50 per cent rebate for a home solar power system up to a maximum rebate value of $2225. This rebate was hugely popular during 2018-2019 and there are 63,416 rebates available in 2019-2020.

Interest-free Loans for Solar PV - interest-free loans for solar PV systems will be available for owner-occupiers. This will allow Victorians to access the benefits of renewable energy at potentially no up-front cost depending on the choice of the solar system installed. Households will be required to pay the amount of the loan over four years.

Solar Hot Water Rebate - rebates of $1000 are available for homeowners to replace an existing hot water system that is at least 3 years old with a solar hot water system. Homeowners can only access only one rebate under the solar homes package so the solar hot water rebate is a great option where solar panels might not be suitable or for households that already have solar panels installed.

Solar Battery Rebate - households will have access to a 50 per cent rebate for a solar home battery system up to a maximum rebate value of $4,838 in 2019-2020, which is expected to be the price of a typical 11 kWh solar home battery system. This rebate will be open to 10,000 households.

Solar for Rental Properties - a solar panel rebate up to $2,225 is available for rental properties, subject to program eligibility and a Solar Homes Landlord Rebate Agreement.

OTHER STATES

Tasmania (TAS), Northern Territory (NT) and Western Australia (WA) have no current additional state-level rebates or grants for solar power.

5. SOLAR FEED-IN TARIFFS

YourSolarQuotes sustainably powering our future

WHAT ARE FEED-IN TARIFFS?

Solar feed-in tariffs (FITs) are the amount you get paid by your energy retailer for the excess energy your solar system exports back into the grid.

During the day, it's typical for your solar power system to generate more power than is being used in your home. This means that if you have a grid-connected solar system, the energy is fed back into the grid and your energy retailer will pay you a fixed amount per kWh of energy that you send to them.

> ***Feed-in tariff rates are typically lower than the rate you pay for your electricity (unless you are lucky enough to live in the Northern Territory). Therefore, we recommend consuming as much of your solar energy as possible in order to maximise the value from your solar investment. Electricity retailers offer different FIT's and we recommend comparing FIT rates to ensure you are getting the best deal.***

STATE LEVEL FEED-IN TARIFFS

FITs also vary depending on the state that you live in. The table below shows you the minimum and maximum FIT rates offered by energy retailers in each state.

STATE	FEED IN TARIFF RANGE
Victoria	0-20c/kWh
South Australia	0-23c/kWh
Australian Capital Territory	0-16c/kWh
Tasmania	8.5-13.5c/kWh
Northern Territory	23.7c/kWh (1 for 1 FIT)
Western Australia	7.1c/kWh
Queensland	0-20/kWh
New South Wales	0-21c/kWh

6. THINGS TO CONSIDER WHEN SWITCHING TO SOLAR

ROOF ORIENTATION

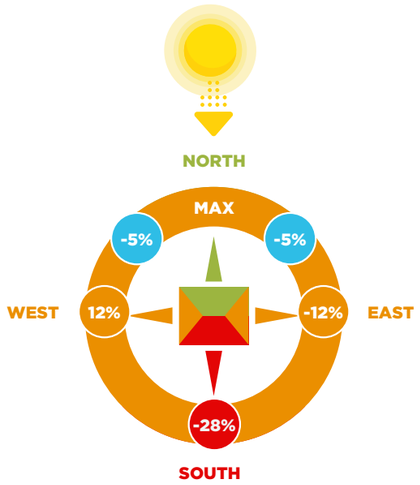
The direction that your solar panels face can have a huge impact on the overall amount of energy produced by your system. In Australia, a north-facing solar system will produce the most energy - with peak production during the middle of the day when the sun is at its highest point.

However, solar systems installed on the North-East or North-West aspects of the roof will produce only slightly less power than North facing installations (see image below for the difference in energy production).

As solar panel prices and feed-in tariff rates have fallen, East-West facing installations are becoming increasingly popular because they start generating power earlier in the day and finish later in the afternoon - which follows most families' energy usage patterns more closely. This means that even though the system is producing less energy overall, more of the energy is being self-consumed making East-West installations an attractive prospect.

When deciding which aspect of your roof best suits your energy requirements, you need to take into consideration how you use power in your home. If you have kids at school and are away from the house for the majority of the day then it could be beneficial to install an east-west solar array.

If your roof faces south, your system would produce 28% less energy than an ideal North facing installation so we recommend only installing on the South Facing aspect of your roof as an absolute last resort.



Discuss your household's energy usage profile during the quotation process and the solar companies will recommend a solar panel orientation tailored to your individual needs.

SOLAR PANEL TILT ANGLE

The slope of your roof usually dictates the angle at which your solar panels are installed. If you have a flat roof or in case of ground-mounted systems, your installer will choose a tilt angle that is as close to the latitude of your solar installation as possible. (check table below for ideal panel tilt angle in your location)

IDEAL PANEL ANGLE

SYDNEY	MELBOURNE	BRISBANE	ADELAIDE	PERTH	HOBART	DARWIN
33.9°	**37.8°**	**27.5°**	**34.9°**	**31.9°**	**42.9°**	**12.5°**

To maximise the energy produced by your system, the ideal tilt angle for your solar panels is as close as possible to the latitude of your location.

WHAT SIZE SYSTEM SHOULD YOU INSTALL

Choosing the right system depends on many factors including how much power you use during daylight hours, your roof orientation, whether shading will be an issue on your roof and how much roof space you have at your home. We receive a lot of enquiries from homeowners who would like to add panels to an existing solar system they installed a few years ago (which can be a costly exercise), so in general, we recommend installing as many panels as your budget and roof space allows.

This 'future proofs' you against continually rising electricity prices and allows you to take full advantage of the generous government solar rebate as it stands. As a rough system sizing guide, you can compare the average daily power usage on your power bill to the average daily output of common system sizes we have calculated in the table below.

SYSTEM SIZE	AVG DAILY OUTPUT	RETURN ON INVESTMENT
2 kW	8.4 kWh	3 - 5 years
3 kW	12.6 kWh	3 - 5 years
4 kW	16.8 kWh	3 - 5 years
5 kW	21.0 kWh	3 - 5 years
10 kW	42.0 kWh	3 - 5 years

*Please note that the location used for above the daily output calculations is Brisane, QLD - based on the Clean Energy Council GC Design Guidelines.

During the quotation process, each solar company will assess your energy usage, roof orientation and available roof space before providing their recommended system size. Great companies will also conduct a shade analysis and provide your estimated return on investment (ROI). This ROI calculation should always take into consideration how much energy you will be self-consuming in your home and how much you will export back to the grid.

HOW MUCH DOES SOLAR COST?

The cost of installing a solar system can vary widely and is affected by a range of factors such as where you live, the retailer or installer you choose, the warranties available, and the technology and size of your system.

The major factors which will affect the price of a solar system are:

- Government rebates and incentives
- Contractor installation costs
- Type and number of panels
- Type and size of the inverter
- Type of framing equipment and other system components
- Roof type, height and accessibility
- Any after-sales service agreements

Keeping the above variables in mind, we have created the table below as an approximate price guide as at October 2019 for solar systems installed in Australia's major capital cities. The Federal Government 'solar rebate' (STCs) have already been subtracted from the total system cost, so the numbers below represent the out of pocket expense to customers installing a tier 1 solar system with a standard (string) inverter..

SOLAR PRICE ESTIMATIONS FOR RESIDENTIAL INSTALLATIONS

SYSTEM SIZE	ESTIMATED PRICE RANGE
3 kW	$3,300 - $4,800
4 kW	$4,000 - $6,200
5 kW	$4,500 - $7,800
6.6 kW	$5,200 - $9,500
10 kW	$8,200 - $13,200

Please note that if you are lucky enough to live in Victoria and qualify for the Solar Homes Program you are entitled to an additional $2225 rebate from the above prices.

RETURN ON INVESTMENT

The return on investment (ROI) period for your solar system can vary quite a lot depending on the size of your system, the orientation of your solar array, your location and most importantly, how you use your power at home. As a general rule, you can expect a well designed solar system to pay for itself within 3-6 years in Australia. Your chosen solar installer will provide energy calculations and a breakdown of your expected ROI during the quotation process.

> ***We recommend self-consuming as much of your solar energy as possible in order to maximise the return from your solar investment.***

FINANCING YOUR SOLAR?

If you've been on social media you've probably noticed the countless 'no interest' solar finance specials or the 'solar for $0 down' ads that seem just a little too good to be true?
BEWARE! THIS IS BECAUSE THEY ARE...

Unfortunately, the finance companies behind these 'no interest' deals charge the solar installer a fee for the privilege (which is then passed onto you).

This fee can be anywhere up to 25% of the cost of the solar system so if you sign up for one of these easy, 'no interest deals' you're essentially paying a higher interest rate than the worst possible credit card.

By carefully listening to our customer's feedback over the past 5 years, we have come to realise that solar experts are not financing experts, and after extensive research and due diligence, we have proudly partnered with Community First Credit Union to help our customers explore low-rate solar finance options.

Our business has been built around transparency, fairness, customer service and accountability and we look for these same values in the companies that we recommend. For this reason, Community First Credit Union were the obvious choice as a finance partner as they align with our mission of driving Australia towards a sustainable future and because they believe in making the customer's search for solar finance an informational and hassle-free experience.

> ***If you are interested in financing your solar, please select 'interested in solar finance' along with your quote request or give our friendly team a call on 1300 660 848 and we will be happy to help answer any questions that you have.***

WHY AVOID CHEAP SOLAR?

The age-old wisdom of 'you get what you pay for' is especially true when buying a solar system. Solar power is an investment that will pay for itself many times over if you purchase a quality system from a reputable solar company.

If you notice newspaper and TV advertisements offering 6.6kW systems for $3990 (or less), we recommend avoiding these cheap solar deals like the plague. Australia's largest solar installer in 2017 was infamous for selling cheap solar systems, and it was no surprise when they went into liquidation - leaving thousands of unsatisfied customers in their wake. The solar industry consensus is that the warranties these cheap systems come with, aren't worth the paper that they are printed on.

There are thousands of horror stories online about faulty components, non-complaint installations and non-existent service and these are all a direct result of the dodgy, bottom of the market solar companies cutting corners in order to offer these 'too good to be true' prices.

> ***Thankfully, we have done the due diligence to ensure that the solar companies we recommend use Clean Energy Council approved products and have all of the necessary accreditation's, electrical contractor licenses and positive customer feedback to ensure they will provide you with a solar system that will stand the test of time.***

7. BRANDS YOU CAN TRUST

PANELS

The best way to guarantee that your solar panels will continue to save you money for their entire 25 year life is to choose a reliable, Tier 1 brand that has been approved by the Clean Energy Council.

There is so much information (and misinformation) out there about which solar panel brands are the best that we've decided to make your job easy and we've created the graphic below to help you easily compare entry-level and premium solar panel brands.

INVERTERS

As we've mentioned previously, the inverter is the brain and hardest working component of your solar system. Most premium inverters will have a 10+ year warranty and as such, we'd recommend steering clear of any inverter with a warranty less than 10 years.

We've created the graphic below to give you the lay of the land and help you easily compare entry-level and premium inverter brands.

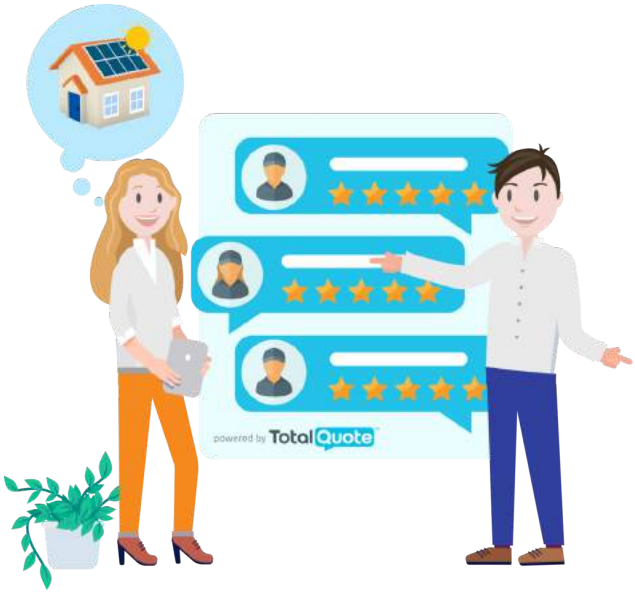
8. COMPARING QUOTES FROM THE BEST COMPANIES

CEC ACCREDITED INSTALLERS

The Clean Energy Council (CEC) is the organisation that oversees the industry and certifies that a solar installer has all necessary technical and administrative knowledge to install solar PV systems in Australia. If a solar installer is accredited by the CEC, the homeowner can rest assured knowing that the installation is completed to a high level of workmanship and that it will comply with all legal requirements in order to secure your government rebate.

WE MAKE IT EASY TO COMPARE 3 QUOTES

If you're considering installing solar power on your home, we have done the due diligence and worked hard to find the CEC Accredited solar installers who will go above and beyond for you. Their reputations have been built on years of providing extraordinary service to our past customers and you can rest assured that your solar investment is in safe hands.



> ***Please request quotes via our website or give our friendly team a call on 1300 660 848 and we will arrange your obligation-free quotes today!***

YourSolarQuotes
sustainably powering our future