

Guide To Buying Solar

by



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Contents

Contents	2
Chapter 1 Where do I start?	4
Chapter 2 Who should I buy solar from?	5
Get multiple quotes and ask lots of questions	7
Take your time	8
Try your local electrician	8
Chapter 3 What is solar power and how does it work?	9
Chapter 4 Should I buy solar?	11
Financial	11
Environmental	11
Energy Independence	13
Chapter 5 How much will it cost?	14
Chapter 6 What panel and inverter brands should I buy?	16
Chapter 7 Is my house right for solar?	20
Chapter 8 What financial incentives are available?	22
Chapter 9 How big a system should I get?	25
Chapter 10 Conclusion and Next Steps	29

Chapter 1 Where do I start?

Going solar is hard. It's confusing, overwhelming, and you so often get contradictory information. That's why we started [Clean Energy Reviews](#), and that's why we wrote this simple guide to buying solar. Something that gets mentioned a lot in our [forum](#) from people that have been researching about solar for months, is that they have ingested a huge amount of information, and still don't know where to start. This guide takes you through all the important information you need to know, and decisions you need to make one by one. So if you've just decided to go solar, then you have started in the right spot. We have kept it as brief and uncomplicated as possible, as to not confuse or overwhelm any further, but have also added a bunch of links for further reading if you feel you need more detail.

[GET A SOLAR QUOTE](#)

From a Clean Energy Reviews install partner.

As for the next step, we think there is one decision that stands out above the rest for you to get a good quality solar system for a reasonable price, and to be kept informed along the whole journey. That is who you buy your solar system from.

NOTE - *Our opinions are our own, based on years of personal experience, testing, reading, and listening to the views of many solar experts. We are, and always will be foremost an independent review site. Our only source of income currently is via advertising on our website, and providing leads to solar installers, that we know and trust to offer great products, service and installation at a fair price.*

Chapter 2 Who should I buy solar from?

When buying solar it is important to get good quality products, it's also important to know how the system works so you get the most out of it, and understand when there is a problem, and of course it's important to pay a fair price. However, *the most important* decision to make when buying solar is who to buy your solar system from. The reason is simple, if you find the right person to buy from, they should be able to guide you through the labyrinth that is going solar. In addition to that, you can have the best quality products money can buy, but if the system is not installed well, you will not be getting the most out of them.



Whilst everyone talks about panel and inverter brands when buying solar, there are actually a multitude of other components that are needed to install a system, from wiring to racking. Arguably the most important part of the system are the isolators, which isolate the high DC voltage that is produced by your solar panels. Furthermore, how the components are installed are perhaps even more important, because even the best quality equipment can be installed poorly - meaning it may not work properly, or even be dangerous.

At this point you are probably wondering how you can possibly know if a system is installed correctly, with top quality components. The simple answer is that you cannot. However, you can find a reputable company with good reviews and recommendations, so that you can be confident you are getting a high quality installation. The good news is that there are many high quality solar companies out there. In the early days of solar there were a lot of “cowboys”, selling and installing poor quality, and frankly dangerous

systems. However, regulations and training has improved out of sight, and you can be confident that the vast majority of accredited solar installers are highly competent and understand the risks of poor quality installations. For that reason I do not want to overstate this point, but you should be aware that there are still plenty of solar companies in operation that are far more interested in making a dollar, than providing high quality solar systems, and one thing they are good at is selling.

Even if a system is perfectly installed with high quality equipment, there is still a chance that something will go wrong with it in the future. A few of the biggest solar companies in Australia 5 years ago, are no longer operating today. That would be very frustrating for anyone that purchased from them who now have an issue with their solar system and no one will honour the warranty. This is good reason to buy the best solar panels and inverters, which we will discuss further below, but also reason to be a little wary of the most prominent and fastest growing companies. Steady or slow growing solar businesses, or local electrical businesses that were around before solar, may be in our opinion more likely to last longer than big fast growing companies that popped up recently.



We have a few recommendations to ensure you find a reputable and long lasting solar company.

Get multiple quotes and ask lots of questions

The reality is that there are a lot of very good sales people and companies out there, that do a great job of getting you locked in to a purchase before you have a chance to think. Many of them may fortunately also be reputable, up standing solar companies, with really good intentions to do high quality installs, sell the best products, and be around for decades to come. However, buying from the first company you get a quote from, certainly reduces your chances of getting the best quality and best priced solar system.

That's why we recommend getting quotes from a few different companies, because it at least gives you something to tell the pushy salesperson, bides you time, and allows you to compare the humans you are dealing with. It is not about bidding them down to the lowest price (in fact if they are willing to pass up your business rather than dropping their price, that is probably a good sign). The process of getting quotes should not be passive, you should ask the salesperson everything that you do not fully understand, and see if they have good answers for you. Follow up with them after they leave, and see how easy it is to get in contact with them (remember, this is what you'll need to do if anything goes wrong with your system).

Questions you might want to ask:

- Are you (the salesperson) an accredited solar designer? If not, who will design the system?
- Who will do the install and are they an accredited installer? Do they work for the same company as you, or are they a subcontractor?
- Who would I call if there was an issue with the system after install, or in 5 years time? What if the business is no longer operating?
- How long has the company been operating?
- If I were to go ahead, when would the installation take place?
- How much electricity will my system generate on average per day?

- Are there any significant factors that will reduce the electricity output for my system (derating)? (Things like shading and roof direction can significantly reduce the output, and a good solar company should be very upfront about that.)

Take your time

Before getting any quotes, take your time to read through this guide, and find out enough information to have a rough idea of what solar system you want to buy.

After getting any quotes, do not feel pressured into purchasing from age old sales tactics like “this price is for 24 hours only” etcetera. Prices do not fluctuate that much, and as discussed above, you will save more money in the long run by buying the right system than by getting a bargain. Make sure to feel 100% comfortable with the company and quoted system before going ahead with the purchase.

Try your local electrician

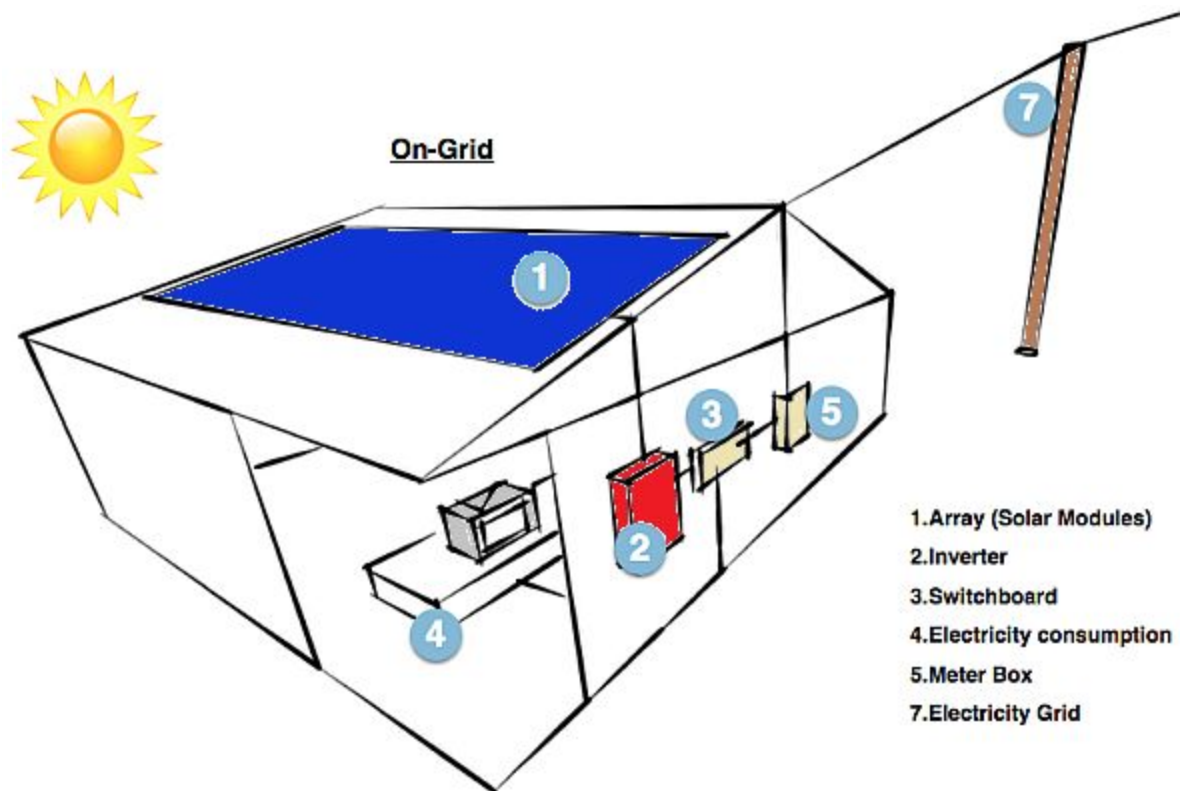
In Australia, solar installers need to be qualified electricians. That does not mean that all electricians are qualified solar installers. However, if you know a local electrician that you have used before and trust, you should ask them if they install solar. They might install solar themselves, or otherwise they are likely to know someone else that does. As discussed above, a local electrical business may be your best chance of buying from a company that outlasts your solar system.

[GET A SOLAR QUOTE](#)

From a Clean Energy Reviews install partner.

Chapter 3 What is solar power and how does it work?

An on-grid solar power system is made up of panels, and an inverter (or multiple micro inverters, see below links for details). The panels generate solar power (DC), and the inverter converts that power into useable electricity for your home (AC). In this simple setup energy is not stored, it is either used in your home to power your appliances, or exported to the grid where your electricity retailer will pay you for the power exported. This payment is called a “feed-in tariff (FIT)” and varies considerably from state to state and electricity provider.



The above information should be enough to get you started. However, if you would like more information at this stage you can read the detailed articles linked below:

- [How Solar Power Works, On-Grid, Off-Grid and Hybrid](#)

- [Basic Introduction to Solar and Hybrid Inverters](#)
- [Micro Inverters and AC Solar Panels](#)

You may install battery storage alongside a solar power system, or battery storage can be installed without a solar system. Given battery storage is somewhat independent of a solar system and can get quite complex, this guide will focus on on-grid solar (without batteries). Read the “Should I get batteries” section of this guide if you are interested, and visit CER’s [Energy Storage section](#) for detailed information on energy storage.

Chapter 4 Should I buy solar?

Yes! Well, for many people it is a resounding “yes”, 20% of Australian households now have solar. Whether you should buy solar, really depends on your reason for wanting solar, and the region that you are in. The main reasons that people buy solar are 1. Financial, 2. Environmental and 3. Energy Independence, or a combination of the three. Let's look at those individually:

Financial

Whether solar makes financial sense largely depends on where you live. Your location will dictate how much solar you can produce and the relative cost of solar energy vs buying energy from the grid (factors that dictate your return on investment). There are very detailed answers, and many variables for these different factors, so for this guide we will give an overview of the average payback period for solar in some key regions, and point you to where you can find more detailed information.

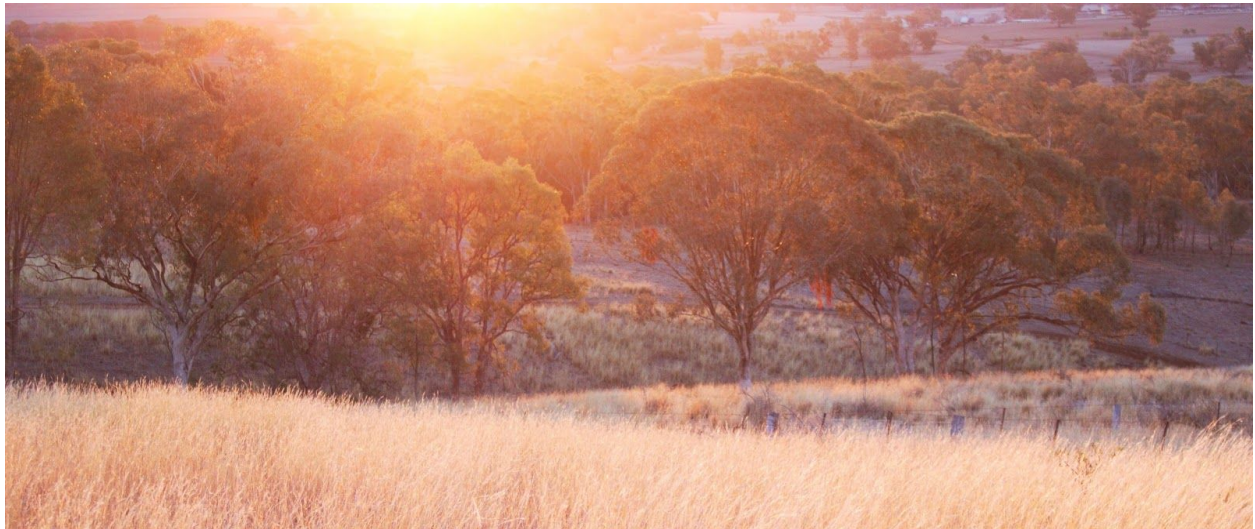
Australia has some of the best payback periods worldwide, due to having lots of sun, good government support, and relatively expensive conventional electricity. The average payback period for a 5kW solar system in Australia, if you use 50% of that solar you produce, is around 4 years (in 2018). According to the consumer advocacy group [Choice](#), that varies from as little as 2-3 years in Adelaide, up to 5-6 years in Melbourne, Hobart, and Darwin.

In the US, the average payback on a residential solar system is 6-8 years, according to the solar quote comparison website, [EnergySage](#). Interestingly, according to [Indian Solar market](#), the payback period for residential systems in India is also approximately 6-8 years.

Environmental

With increasing awareness of climate change, more people are going solar for environmental reasons. You might have heard it said that due to the embodied carbon in manufacturing solar panels, going solar actually *increases* carbon emissions. This is

fortunately far from the truth. The carbon payback period of solar does depend on location (due to how much sunlight there is, and how carbon intensive the grid energy is in a particular location), however in most parts of Australia, US and Europe, using 2019 figures, your solar panels will become carbon neutral after about 1 - 1.5 years. This is based on energy it takes to build and transport the panels, divided by how much carbon the solar panels offset when installed.¹ That means, the next 20 plus years that your system should be operating, it is offsetting carbon from fossil fuel power plants.



Another significant point in the environmental benefit of your solar system, is how reliable, high quality, and high performing your system is. Essentially, the longer your system is producing power, and the more efficient it operates, the more carbon intensive energy it will offset. So by spending a little more on quality products, and a quality install, you will be increasing the carbon payback of your solar install.

Battery storage adds to the carbon payback. Due to the fact that your solar power is offsetting fossil fuel energy regardless of whether your household is using it via battery

¹ Sources:

renew.org.au/renew-magazine

carboncommentary.com

solartrustcentre.com.au

storage, or whether it's being used by your neighbours when you export it, battery storage does not make environmental sense if your home is connected to the grid.

Energy Independence

Similar to the desire for us to provide a safe and comfortable home for our family, many humans also seem to have an innate, evolutionary desire to be able to have full control of our energy needs. However, this desire is usually at odds with both the financial and environmental reasons for going solar. In order to be fully energy independent you need to be completely off-grid, which means you'll need an awful lot of solar, batteries and a backup generator to keep you going in the depths of winter. However, if you live or are moving to an area without the grid, you have little choice but to be energy independent.

Going solar (without batteries) will not give you much energy independence, it will allow you to consume some power that you produce, but if the grid goes down your solar system is designed to go down with it (lest exporting energy to the grid and electrocuting anyone working on getting it back up again).

Installing some battery storage can give you a higher level of energy independence than having solar alone. We will talk about whether it is worth doing that in the last chapter of this guide "Should I get batteries".

Chapter 5 How much will it cost?

Use our [Solar Price Calculator](#) to get a rough estimate of the cost of a solar system.

It is important to note, that you neither want to pay too much nor too little for a solar system. It might sound strange that you would not want to pay too little, but think about it as if you were going out to dinner. If you pay a small price, you might get a reasonably tasty meal, but it probably won't leave you feeling particularly spritely afterward. It is the same with solar in that if you buy a cheap system, you are far more likely to have a headache later on. In order to install cheap systems, the company will need to cut corners somewhere. Either on the components that are being installed, or on installation costs. Fortunately, just like restaurants, there is an easy way to separate the wheat from the chaff, simply google it! There are a huge number of reviews online for solar companies now.



Unlike buying dinner however, it is a lot easier to get ripped off when buying solar. When buying dinner you will presumably look at the menu first, and because you have eaten out many times before you generally know what a fair price to pay is. With some luck, you will only buy a solar system once though, so unless you do your research (and use our Solar Price Calculator), you probably have no idea how much a system should

cost. It is not common, but there are solar companies that charge a very high price for the same, or even a lesser quality system, that you can get much cheaper elsewhere.

With solar, as with eating out, there is a pricing sweet spot. Our Solar Price Calculator is not perfect (see the disclaimer before using it), but you can use it to get a rough idea of what you should pay. This is another reason why we recommend getting multiple quotes when buying solar, so you have a reference point.

You can use our Solar Price Calculator to get a rough idea of the cost of solar before proceeding further. See the next section to find out about brands that you should buy, in the meantime you can put a generic choice into the calculator (like “other premium brand”).

Chapter 6 What panel and inverter brands should I buy?

NOTE - Our opinions are our own, based on years of personal experience, testing, reading, and listening to the views of many solar experts. We are, and always will be foremost an independent review site. Our only source of income currently is via advertising on our website, and providing leads to solar installers, that we know and trust to offer great products, service and installation at a fair price.

Selecting a quality solar panel and inverter brand from the hundreds of different models and manufacturers can be a very difficult task. Even for experienced people in the solar industry it is hard to cut through the noise, let alone if you are new to solar and are hopefully only going to buy one solar system in your lifetime. That is why we founded Clean Energy Reviews, we were working in the industry for years, but still found it very hard to know which brands were good and which were lemons. We decided to compile industry knowledge about the best solar panel and inverter brands, and disseminate it to everyone. We have narrowed down the long list of solar panel and inverter brands to a select few using feedback from installers and solar professionals based on quality, efficiency, reliability, performance and return on investment.

Inverters

The solar inverter is the most sophisticated part of any on-grid solar system and is also the part most likely to have issues. This is not surprising considering inverters are usually located outside in harsh weather conditions including rain, humidity and extreme heat, all the while generating thousands of watts of power for up to 10 hours a day. This is why the choice of inverter is the second most important decision when going solar, after who to buy your system from.

Due to the fact that the inverter is the most likely part of the solar system to fail, the most loved inverter brands are of course those that have low failure rates and offer the best service, so that if the inverter does have an issue, it is up and running again as

quickly as possible. **Fronius**, **SMA** and **SolarEdge** have been the favoured brands of the many installers and solar professionals that we talk to for years, for the very reason that they have low failure rates and usually ship replacement units within 3-5 business days. Fronius and SMA inverters are available with 10 year warranties while SolarEdge offer a leading 12 year manufacturers warranty.



Many of the lesser known 'value' brands will only repair a faulty unit if it is shipped to them (at the owner's cost), which often takes weeks and sometimes months. Inverter issues will likely be the biggest reason to blow out the financial payback of your solar system.

That is enough about inverters to get your started. However if you need more information we have many articles regarding the best performing and highest quality inverters, see the links below:

- See more detailed analysis on the top inverter brands in our “[Best Solar Inverters](#)” article.
- Also checkout a host of other information and reviews on individual inverter brands at our “[Inverters](#)” page.

Solar panels

Unlike inverters the biggest problem when comparing solar panels is that they generally look very similar with nothing obvious to distinguish between high and low quality products. Unfortunately many solar installers and customers only have the glossy brochure to go by, which can easily baffle people with clever marketing and slogans.

Based on the extensive feedback we have received, the two standout solar panel brands are **SunPower** and **LG Energy**. These two manufacturers are widely known as producing some of the highest quality solar modules with lowest degradation over time and best warranty conditions, however these panels also come at a premium price. SunPower are considered the world leader but generally cost around 30% more than the competition. LG panels also come at a premium but are a little less expensive and have a range of modules which are very well regarded and widely available. Which is why we put LG at the top of the list when it comes to both quality and value for money. See links to our articles below for more solar panel brands that we highly regard.



It is worth mentioning the commonly referred to ‘Tier 1’ rating, which is often used by solar companies to tout their panels as the best. However, the ‘Tier 1’ rating is misleading and does not guarantee a panel is free from defects or give any indication of how it will perform over the life of the system. The rating was developed by Bloomberg New Energy Finance to rate solar panel manufacturers in terms of financial stability, it has no link to the performance or quality of a panel.

See below links for further reading on solar panels:

- See our detailed analysis on the top panel brands in our [“Best Solar Panels”](#) article.
- We offer insight into the many innovations being used to improve panel efficiency and performance in our detailed [solar technology review](#) article.

- You can also checkout a host of other information and reviews on individual panel brands at our [“Solar Panels”](#) page.



From a Clean Energy Reviews install partner.

Chapter 7 Is my house right for solar?

Quick Summary:

- Do you own your own roof space?
- Does part of your roof face north, west or east in the Southern Hemisphere, or south, west or east in the Northern Hemisphere? And is that roof space unshaded for the majority of the day, for most of the year?
- Is there enough unshaded area to fit 8 or more solar panels? (Approx 12 sq. meters, or 130 sq. feet)

If yes to all of the above, you can probably install a productive solar system on your house. However, there are a few other factors that may influence the viability, or cost of install. We should also take a closer look at some of those questions.



1. Direction of roof

In the southern hemisphere, a north facing roof is optimal for solar production throughout the entire day (south facing in the northern hemisphere). Depending on the pitch of the roof, a west or east facing roof will decrease your solar output across the day by about 15% compared to the optimal. Having solar on an east or west facing roof is not ideal if you are home all day to use your solar power, or if you receive a nice feed-in tariff

(or net metering, see next chapter for more on that). However, it's also not a deal breaker if you only have an east or west facing roof, because 15% is not a massive amount, plus solar panels are pretty cheap these days so you can always oversize the inverter (put up greater kW of panels than the inverter size) in order to go some way to counter the loss from the roof direction.

Furthermore, if you do not get paid much for the solar that you export, and you aren't home throughout the day, then you may in fact prefer to have solar installed on your east or west facing roof. That is because the sun rises in the east and sets in the west (in both hemispheres), which means an east facing solar system will produce more power in the morning and a west facing system will produce more in the evening. Therefore if you use most of your power in the morning and evening, you will consume more of your own solar power if you have an east and/or west facing install.

2. Shading

There is a lot that can be said about shading, however the most important thing you need to know is that your solar panels will not generate power when they are shaded. If you have big beautiful trees surrounding your house that provide lots of shade in summer, then buying a solar system would likely be a waste of money.

The calculations are too complex to go into here as to whether or not the shade on your house is a deal breaker or not. It is suffice to say that if you get a decent amount of sun on some of your roof for most of the year, then it is worth getting an assessment from a solar provider. Any decent solar company should be able to give you an accurate idea of how much energy your system will produce, and how much it will be affected by shade. If you really want to find this out for yourself, there are plenty of online apps and tools which you can use.

3. Type of roof

Installers can install a solar system on most types of roof material, however there are some roofs that are unsuitable. Slate for example can prove difficult, and fibreglass generally not possible.

The pitch of your roof can also lead to extra cost of installation. If you have a steep roof, it can be dangerous to install on, which means the installers may need special access and safety equipment (this can add hundreds of dollars). Likewise if the roof is difficult to access, the installers may need special access equipment. If the roof is flat, or nearly flat, you will likely require extra racking in order to face the panels to the direction of the sun.

Chapter 8 What financial incentives are available?

Rebates, Tax Credits, Feed-in tariffs (FITs) and Net Metering

A **rebate** or **tax credit** is an upfront discount on your solar system, or a credit which will come off your tax bill. This is usually based on a government policy to provide a financial incentive to buy solar, in order to offset carbon emissions.

A **feed-in tariff** is the amount of money that you get paid for the electricity that you export to the grid. FITs vary greatly from region to region, year to year and government to government, so it is worth being clear on what FITs are available in your region, especially if you are likely to export a lot of solar.

Net metering is most common in the US and works slightly differently to a FIT. Net metering essentially works like a 1:1 feed in tariff. In that in a billing period (let's say monthly), all the solar power that your system produced, is deducted from any power that your property consumed from the grid. This is quite favourable for solar owners, considering that the market rate for your solar power is considerably lower than what you pay retail for electricity, however you are essentially being paid the retail rate.

Australia

Rebates

The main rebate available in Australia is the federal government's STCs (Small Technology Certificates). This is available for virtually all Australian residential systems (and commercial systems up to 100kW). There are a few different factors involved in determining the amount you will receive back for your solar system (you can use [this calculator](#) to find out exactly), however the majority of Australians (Brisbane, Sydney, Canberra, Adelaide and Perth) in 2019 can expect about a \$3000 rebate, whilst those in Melbourne and Tasmania can expect closer to \$2500.

A few points to note about STCs:

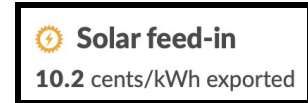
- Your solar retailer will claim the STCs on your behalf, so you get the rebate up front and do not have to worry about claiming the rebate.
- Your solar quote will (at least should) show the amount you pay *after* the STC discount. It should also clearly break down the cost of the system, and the amount taken for the STCs.
- The quantity of STCs your system is eligible for is dependent on how much sun you receive (each postcode in Australia is given a "zone" based on its solar irradiation (sunlight)).
- The reason for the above is that the certificates are based on how much greenhouse gases your solar panels will offset, and they will offset more in an area with more sunlight.

Victoria is the only state which currently has a separate state government rebate. Most Victorians can expect a further \$2225 off their solar systems. Although unlike the STCs, this rebate will need to be claimed by the individual, rather than the retailer.

Feed-in tariffs (FITs)

FITs are far more varied than the rebates, in that each state legislates on the minimum FIT an electricity retailer must offer consumers, and each retailer may offer an additional amount on top of the minimum.

Visit the government website www.energymadeeasy.gov.au to compare plans from various energy retailers. Look for the below text in the “Price summary” to see what FIT you can expect:



United States

Tax credits

2019 is that last year that US households are eligible for the full 30% federal government tax credit (also known as the ITC). However, the ITC only drops a little to 26% in 2020, and 22% in 2021.

As of 2022, there will be not tax credit for homeowners, but commercial and utility credit of 10% will remain ongoing.

Net metering

Most states in the US (43 currently) have a net metering policy for solar.

See <http://programs.dsireusa.org/system/program/> and filter for *program type = net metering* to see details in your state.

Rest of the world

Feed-in tariffs (FITs)

For a large, but somewhat outdated list of FITs around the world, visit [Wikipedia](#).

Chapter 9 How big a system should I get?

There are a surprising number of factors you can consider when deciding on what size solar system to get. It is worth looking at all of these factors if you are on a budget and have the time, but the very short answer to this question is that the majority of Australian households are getting as much solar as they can fit on their roof (or are allowed by their electricity distributor), up to about 6.5kW of panels, with a 5kW inverter. That is probably a bigger system than a lot of people really 'need', but the upfront cost is generally still very reasonable and payback period very good, so why not? That is the short answer, but if you want to know the full details, the long answer is below. In the last section I will also explain why you would want to get a larger array of panels (6.5kW) than the inverter size (5kW).



How much solar can you install?

Every electrical distributor (the company that manages the poles and wires) in Australia has different rules about the approval process for installing a solar system. However, the majority will allow up to 5kW for single phase (which are the vast majority of residential homes) and 30kW for three phase (generally commercial properties). The system size is usually limited by inverter output not the nominal panel output, so you can install a larger panel array, but are limited to a 5kW inverter. In some areas you will be allowed up to 10kW on a single phase, and in a few rural areas you might be limited to 3kW. As per Chapter 2, a good solar company will know all these rules in your area

back to front. However, if you are interested, Solar Choice has a pretty good [article](#) summarising the different rules in Australia.

The other limiting factor is obviously your roof space. See the “**Is my house right for solar**” Chapter for more specifics on this. In short, bear in mind that you can only install what can physically fit on your roof.

How much will you get paid for the solar that you export?

See the Chapter on “**What financial incentives are available?**” for details on what you will get paid for exporting your solar. The key point when considering this in relation to sizing your system is that if you get paid a lot for exporting your solar (close to, or more than what you pay for your electricity from the grid) then you will be happy to get a big system and export a lot of your power so you can get paid that high price for it. However, if you do not get paid much (or anything) for exporting, you will likely be better off sizing your system closer to your daytime electricity consumption, in order to maximise your own consumption (and therefore offsetting what you would normally buy), and minimising selling your power for a low price.

Most of the US uses net metering, so you will get paid the same for what you export as the cost for what you consume, so if you are in the US you don't need to worry about this section.

In Australia, if you search around, you should be able to find a retailer that will pay you 50% of what you pay for your electricity, although many will offer closer to 30%. With a feed-in tariff of 50% of what you pay (for example 15c per kWh, if you pay 30c per kWh for consumption), that is still a pretty decent amount you are getting paid for your solar, and by getting the 'standard' 5kW inverter with 6.5kW of panels you will likely still get a very good payback period.

What is your current daytime consumption?

If for whatever reason you are getting a very low, or non-existent feed-in tariff, then you will want to size your system closer to your daytime consumption. Although, I would not

worry about being too precise with this calculation, as your consumption will likely change over time anyway.

Have a look at your electricity bill, and work out your daily average usage. Let's say you use 20kWh per day on average. Then work out roughly how much of that power you use during the day (this will vary considerably during summer and winter, so just use an average). Let's say 50%. That is 10kWh that you use during daylight hours. In most parts of Australia, you will generate at least 4kWh of electricity for every 1kW of solar that you install. Therefore in this scenario, you would only need a 2.5kW solar system to cover your own usage.

Let's take a look at how you can increase your daytime usage in order to benefit from a larger solar system, and also check if you might need more a bigger system in future.

How can you utilise more of your own solar?

The short answer is, use more power during the day. Do your washing during the day. If you have electric hot water, have showers during daylight hours. If you have gas hot water, you might want to consider changing to electric (and then shower during the day). Use your dishwasher when the sun is out, and your clothes dryer... actually if the sun is out hang your clothes in the sun!

Do you plan to get batteries? Future proof your system.

This is a moot point if you are maximising the size of your solar system already. However if you are debating as to whether you need a larger system or not, based on your daytime consumption, do consider whether you might want to add batteries in future. The cost of battery storage is still currently a little high to make it a no brainer, however it is very likely that the cost will continue to come down over the next decade or so. Remember that a good quality solar system should last you 30 years plus.

If in ten years time you might decide to get battery storage, then you should consider sizing your solar system accordingly now. It is not simple to add a few panels to your installed system down the track, for many reasons I won't go into here.

Consider the example I gave above regarding daytime consumption. If there is a chance in future that you will get batteries, then you would want to consider your full daily usage of 20kW, rather than just your daytime usage of 10kW. That means you would be looking at approximately a 5kW system to cover your usage, rather than a 2.5kW.

Oversizing your inverter, and back to the simple answer

As mentioned in the first section of this chapter, most companies will quote for a system with a larger amount of panels, than the inverter size. There are three reasons to 'oversize' your inverter.

1. A 5kW inverter will always output 5kW of AC power if it receives enough input, whereas your 6.5kW solar panel array's output will fluctuate drastically throughout the day and year. More often than not, your solar array will operate well below its maximum nominal power. Solar panels are also pretty cheap these days compared to the rest of the cost of the system. Your inverter will operate more efficiently if it receives a higher voltage, therefore it makes sense to oversize it and get close to your 5kW output on a regular basis.
2. As mentioned in the "**How much solar can you install?**" section, most electricity distributors will limit your inverter size to 5kW. In order to maximise on that restriction, as mentioned in point 1, you can oversize in order to get closer to that 5kW output.
3. Lastly, why not oversize by even more? In Australia, the government rebates are based on the size of the panel array (not the inverter), so in order to restrict consumers from cashing in on rebates for panels whilst having a completely undersized inverter, they have restricted the oversizing to 30% more than the inverter. For good reason, as that is about the max that you would benefit from oversizing your inverter before you would just be wasting the additional solar panels.

After wading through all the details you can see most answers lead us back to a 5kW inverter with a 6.5kW array of panels being the best option. If you can afford the upfront cost, we think this is a pretty good size system for the majority of households.

Chapter 10 Conclusion and Next Steps

You have made it through the Guide to Buying Solar eBook, and we trust that you now have enough knowledge to confidently buy a solar system.

There is a lot of information in this guide to digest, however I will reiterate once more, if you only take away one thing from this eBook please let that be Chapter 2. Finding the right people to buy solar from will make everything easier in the short and long term, and also cheaper in the long term regardless of whether you pay a bit more up front.

If you have any more questions, or would like to get specific feedback on quotes, please visit us at the [Clean Energy Reviews forum](#). Our community will be happy to answer questions.

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