

General information about solar power

1. How do I get solar power?

Many companies install solar power systems including some electricity retailers. It is worth comparing quotes from different suppliers, and any extra costs such as surcharges for 2 storey houses, panel mounting frames and hardware for your type of roof. It is also worth checking whether the solar PV installer will liaise with your electricity retailer and distributor to ensure that you have the right type of meter and that you will receive a feed in tariff for your excess power.

2. How do solar photovoltaic (PV) panels work?

Solar panels use layers of special materials called semi-conductors that create electricity when exposed to sufficient light. There are different types of solar panel construction. Some panels tend to perform better in high temperatures and low light situations, but take up around twice the space.

3. Will it help the environment if I get solar power?

Solar power generation produces no greenhouse gas emissions or air pollution. The energy used to manufacture a solar power system is small compared to the energy generated by the system and is paid back many times over the life of the system. The Federal Government has set up the Small-scale Renewable Energy Scheme (SRES) to reduce emissions. Installing solar panels can create Small-scale Technology Certificates (STCs) under this scheme. If you sell the STCs from your system to reduce the upfront price, your STCs will be counted as part of the SRES scheme. If you don't sell your STCs and let them expire, you are providing additional emissions reduction beyond the SRES scheme but the upfront cost of the solar power system will be higher. The value of STCs can vary. You should find out their current value when considering solar panels (contact details on back page).

4. Will I be financially better off getting solar power?

In the vast majority of cases, getting solar power will help reduce your electricity bills through reducing the amount of power you buy from the grid and through the feed in tariff you receive for excess power you sell to the grid. The amount of electricity you save will depend upon a range of factors including the size of the system, whether the system has been installed in the optimal location and your individual electricity use patterns. Be wary of claims that you will never need to pay a bill again or can eliminate your electricity bills. Most customers are installing systems in the 1.5 to 2 kW range, and these are unlikely to be large enough to negate your electricity bill.

In many cases your retail electricity tariff structure will change once you install solar PV. For the majority of people, this may not significantly impact their overall annual bill. Some people may find they are actually better off under the new tariff structure. Whether a customer is better or worse off will depend on their energy use pattern. In some cases (such as where you have a dedicated off-peak rate for space heating, air-conditioning or hot water) you may be better off retaining your current off-peak tariff, rather than installing solar PV. For more information on how a change of electricity tariff may affect you, and whether any present discounts will continue, contact your retailer. It's also worth shopping around for tariffs from other retailers that may suit you better.

5. Are there different rules for solar power at different kinds of properties?

Homes, businesses and community organisations are eligible for the upfront discount provided by the creation of Small-scale Technology Certificates under the SRES scheme. Both the premium and standard feed in tariffs are offered to households, community organisations and small businesses that use less than 100 MWh of electricity per year. Larger businesses would need to negotiate a feed in tariff arrangement with their electricity retailer.

Costs and savings

6. What Government subsidies are available for solar power?

The Federal Government subsidy for solar power in homes, community organisations and small businesses is the Small-scale Renewable Energy Scheme (SRES). Under this scheme a solar power system can create Small-scale Technology Certificates (STCs) that may be sold to partially offset the price of the system. STCs have replaced the former Renewable Energy Certificates (RECs).

Feed in tariffs are a different type of benefit that provide ongoing financial incentive rather than an upfront price reduction. Other solar subsidies are designed for schools and include the National Solar Schools Program and the Victorian Solar in Schools Initiative.

7. How long will it take for a solar power system to pay for itself?

The payback period of a solar power system varies widely depending on the price paid, the size of the system, the usage patterns of the consumer and the price received as a feed in tariff. For homes that use small amounts of electricity and receive the premium feed in tariff, the payback period can be less than 3 years. For homes that use a lot of electricity and are not eligible for the premium feed in tariff, the payback period will be closer to 7 years. Both of these examples assume a 1.5 kW system and an upfront price discount through the sale of STCs under the SRES scheme.

Generating power

8. How much electricity will I generate?

The amount of electricity that you generate depends on the size of your system, which way it is facing, whether there is any shading from trees or other buildings and the local climatic conditions. In Melbourne a typical average generation is up to 3.7 kWh per day for a 1 kW system (up to 5.5 kWh per day for a 1.5 kW system). In winter months the average daily generation is typically less than 3 kWh and in summer months it is typically greater than 5 kWh for a 1 kW system. For comparison, the average household uses up to 18 kWh daily, but an energy efficient house can use much less.

9. How efficient are solar panels?

Depending on the type of technology, solar panels typically convert between 8% and 18% of the available energy in sunlight to electrical energy. Crystalline panels have higher efficiency than amorphous panels but also cost more and their performance declines to a greater extent in high temperatures. Efficiency is not the only factor for which type of panel you are best to install.

10. Will I generate enough to sell power back to the grid?

In most cases there will be times that the solar PV system is generating more power than your house is using. At these times you will be selling power back to the grid. If your house has very high continuous electricity use (for example through running multiple fridges or having a number of people home at all times) then you may not export much electricity back to the grid. Regardless of the amount of electricity you are able to export back to the grid, your solar power system will reduce the amount of power you need to buy from the grid. Be wary of claims that you will never need to pay a bill again or can eliminate your electricity bills. Most customers are installing systems in the 1.5 to 2 kW range, and these are unlikely to be large enough to negate your electricity bill.

11. Does the power I generate get used in my property first or sent to the grid first?

The electricity from the solar power system will get used in your property first. Only the excess gets exported to the grid.

Getting paid

12. What is the difference between net metering and gross metering?

Gross metering measures all the power your solar panels produce and all the power that you use in the house. This type of metering is used where there is a gross feed in tariff such as in the Australian Capital Territory (ACT). Under gross metering you are paid the gross feed in tariff for all the power you produce and you must pay the usage tariff for all the power that you consume.

Net metering measures only the difference between what your solar power system is producing and what you are consuming. Net metering measures the amount that you import separate to the amount that you export and is used where there is a net feed in tariff such as in Victoria. Under net metering you are paid the net feed in tariff for the excess power you produce and you must pay the usage tariff for any power that you import. In Victoria you will have net metering.

13. What is a feed in tariff and how can I get one?

A feed in tariff is a price that you will get paid for electricity you generate from sources such as solar power. The feed in tariff in Victoria is a net feed in tariff and only applies to the excess electricity that you export to the grid. All large retailers are required to offer their eligible customers both a standard and a premium feed in tariff. You can receive the feed in tariff by contacting your retailer once you have a solar power system installed with the correct metering in place.

14. What is the difference between the premium feed in tariff and the standard feed in tariff?

The premium feed in tariff is designed specifically to provide a financial incentive for small scale solar power systems up to 5 kW in size. The premium feed in tariff offers a rate of 60c/kWh, approximately 3 times more than a typical residential usage tariff. The premium feed in tariff is subject to eligibility criteria, including that the solar power system must be installed at the customer's primary place of residence if the installation is at a house. If you are a non-residential customer, annual electricity consumption must not exceed 100 MWh per year. You can apply for a feed in tariff on one system per property.

The standard feed in tariff is a lower rate than the premium feed in tariff but has fewer eligibility restrictions and is open to some forms of generation other than solar. If you are eligible, you are likely to receive the greatest benefit from the premium feed in tariff.

15. How much will I be paid for the electricity I generate?

You will only be paid for electricity that you export to the grid. You are not paid for electricity that you generate and use in the house, but this will be reducing the amount of electricity that you need to import and so reducing the total cost of your electricity purchases. If you are eligible for the premium feed in tariff, you will be paid at least 60c/kWh for the electricity that you export back to the grid. Some retailers are offering rates higher than this. You should check the feed in tariff offered by your electricity retailer and compare offers from different retailers.

If you are not eligible for the premium feed in tariff you may still be eligible for the standard feed in tariff. It is lower than the premium tariff. It is similar to, or slightly higher than, your usage tariff.

16. Is there a limit on the feed in tariff scheme?

The Victorian premium solar feed in tariff has two caps. There is a total state-wide aggregate capacity of 100 MW and a \$10 cap, which ensures the cost of the scheme to the average electricity customers does not exceed \$10 per year. Once either of these caps has been reached, the scheme can be closed to new applicants. Information on these caps can be obtained from the Department of Primary Industries (see contact details on back page).

17. Will I be paid cash for the electricity that I generate or will I get a credit on my bill?

Electricity retailers in Victoria need only provide a credit on your bill as payment for the electricity that you export. Some retailers may offer to provide different arrangements such as cash payments where a customer has built up a large enough credit over the course of a year. You should check the contractual conditions with your electricity retailer and to compare different retailers' offers.

Buying electricity

18. When I get solar power do I have to enter a new contract with my electricity retailer for the electricity I buy?

Not necessarily. You will need to enter into a new contract to sell your excess electricity, but the electricity you buy might be under the same contract as previously or your retailer may require you to enter into a new contract. You should discuss this issue with your retailer before committing to solar power. It's a good idea to shop around to make sure you get the contract you want.

19. Will the tariff I pay for electricity change?

Not necessarily, this depends on the retailer. Your usage tariff to buy electricity might be the same as previously, or your retailer may only offer a different tariff. The tariff structure may also change in regard to peak and off peak tariffs. For the majority of people, this may not significantly impact on their overall annual bill. Whether a customer is better or worse off will depend on their energy use pattern. Some retailers might only offer a flat rate once you have solar power. Others might switch you from a flat tariff to a peak and off-peak tariff. You should discuss this issue with your retailer before committing to solar power and it is advisable to shop around to make sure you get the tariff structure that you want.

If you currently have a peak and off-peak tariff and use a lot of electricity during off-peak times (such as for dedicated hot water heating, slab heating, air conditioning or pool pumps) it may be better for you to retain this tariff. In this situation if you lose your present tariff, you may be financially worse off by installing solar power.

20. Will my electricity bills decrease once I have solar power?

In the vast majority of cases, getting solar power will help reduce your electricity bills through reducing the amount of power you buy from the grid and through the feed in tariff you receive for excess power you sell to the grid. However in some cases you may be financially better off without solar power. This can occur if your retailer offers a particular tariff structure for solar power that does not suit you. For example, if you currently have peak and off-peak rates, and your retailer only offers a flat rate if you get solar power, you will lose the off-peak rate and may be worse off despite the power your solar system generates. If your retailer wants to move you to a Time Of Use tariff, you could be better or worse off, depending on your energy use pattern. You should check with your retailer about the tariff they will charge when you have solar power, and whether any existing discounts will continue. It can also be worth shopping around for deals from other retailers that may suit you better.

21. Will my electricity retailer charge extra administration fees because of my solar power system?

In most cases there should be no extra retailer fees because of a solar power system. You can confirm this by contacting your electricity retailer prior to installing solar panels.

22. Will my electricity bill show the same information after I get solar power?

Once your solar power system is installed and your meter is recording it, your electricity bill will include extra information. Without solar power, your electricity bill shows the total amount of electricity used by your house. When you have solar power, your bill will show how much electricity you imported and how much you exported. Your bill will not show you how much electricity your house actually used or how much electricity your solar power system generated. This is because under net metering, only the import and export of electricity to the grid is measured.

Shopping around

23. What is the difference between an electricity retailer and a distributor?

Your distributor, or distribution company, is the company that owns and maintains the poles and wires that carry electricity to your house. The distributor also owns your electricity meter and is responsible for upgrading your meter if required. There is only one distributor for each area and you cannot change distributor.

Your retailer is the company that sells you electricity. They buy electricity from power stations and sell it to customers. They also pay your distribution company for using their poles and wires. Retailers can offer different tariffs (prices) and contracts so you can choose the tariff and contract that suits you best. In Victoria you can choose to buy electricity from any retailer and can change retailer at any time (contract termination fees may apply).

24. Do I have to change retailer or distributor when I get solar power?

Usually you will not have to change electricity retailer when you get solar power. Small retailers don't have to offer a feed in tariff. If you are with one that doesn't, you may be better off changing to a retailer that does offer one. It is also advisable to shop around for a retailer offer that suits you. You can not change your distributor as there is only one distributor in each network area.

25. Can I change retailer or distributor if I want to?

You can change your retailer at any time. However if you have signed a fixed term contract with your retailer there may be an early exit fee payable if you want to switch before the end of the fixed term. You can not change your distributor as there is only one distributor in each network area.

26. Should I shop around for a retailer?

It pays to shop around for a retail offer that suits you regarding tariff rates, tariff structure, other fees and charges, discounts or other incentives, and the length of any fixed term. The Victorian Government's YourChoice can help in comparing retail offers: www.yourchoice.vic.gov.au or ring 1300 134 575.

27. What should I look for when choosing a retailer?

Things to look for when choosing a retailer include:

- The usage tariff rate (the price for every unit of electricity that you buy)
- The feed in tariff rate (the price for every unit of electricity that you sell)
- The supply charge (the price for every day that you are connected)
- Other fees and charges
- Whether the retailer offers peak and off-peak rates, if that tariff structure suits you better than a fixed tariff rate
- Any discounts offered, such as for paying on time
- Whether the contract is day-by-day or for a fixed term
- Any fees associated with exiting fixed term contracts
- Does the retailer offer to supply power from accredited renewable energy sources?

28. What should I look for in choosing a solar power system supplier?

Many companies sell and install solar PV systems, including some electricity retailers. Always take the time to compare quotes and do your background research. Do not allow yourself to be pressured into an on the spot sale. When comparing quotes from different suppliers you should check for:

- The out of pocket price of the system
- Do you keep the Small-scale Technology Certificates (STCs), or does the installer take them?
- The payment structure including any deposits required, upfront payments, instalments etc
- Does the price include installation?
- Are there additional charges depending on the type of roof you have (flat or pitched), the type of roof material you have (tiles or steel), the distance of your house from the supplier, whether your house is a single storey or double storey?
- Will your solar supplier liaise with your electricity distributor and retailer to make sure you have the right meter and that you will receive the retailer's feed in tariff?

- The type of solar panels (amorphous or crystalline) and their performance at your location
- The colour of the panels, in case this matters to you
- The inverter converts the power from your panels, so it can be used in the house. What functionalities does it have? Does it display current and historical energy production?
- The size of the system and the inverter (which may not be the same) and what will best suit your needs
- Contract conditions and warranties on all parts of the system and on the labour to install
- Whether the company uses accredited designers and installers
- How long will it take to get your system installed?
- After-sales service in case you have problems with the system

Installation

29. What is the process for installing solar power?

The overall process for installing solar power includes the following steps:

- First decide whether solar power is financially suitable for you.
- Check with your electricity retailer about whether you are eligible for a feed in tariff for the excess electricity you export back to the grid. If you are satisfied with the retailer's feed in tariff offer and the associated terms and conditions, ask them about signing up for it. You will not automatically start receiving a feed in tariff simply because you have installed a system.
- Check with your retailer whether you are likely to need a new meter and about any changes to your electricity consumption tariff structure and rate. You can shop around for a better deal from another electricity retailer at any time.
- Choose a reputable solar supplier - the company that will sell you a solar PV system and install it for you. Check whether the company uses accredited designers and installers. You have to use an accredited installer to get a benefit from the Federal Government's Small-scale Renewable Energy Scheme (SRES). You can use this to reduce the upfront cost of your system.
- The solar power system is then installed by the solar power supplier. Check with the supplier about all the paperwork that goes to your distributor (the company that owns all the electricity poles and wires). The paperwork includes a solar connection form (SCF), an electrical works request (EWR), and a certificate of electrical safety (CES).
- A Certificate of Electrical Safety is provided by your solar power supplier. A copy should go to your distributor (the company that owns the poles and wires that supplies your power)
- Your electricity meter might need to be changed by your distributor to be able to measure the excess solar power you sell to your retailer.
- Advise your retailer that you have solar power and apply for a feed in tariff.

The actual installation of the solar panels and associated equipment involves:

- Installing mounting frames on your roof
- Attaching the solar panels to the mounting frames
- Installing the inverter, usually on an external wall near the fuse box
- Running electricity cables from the solar panels to the inverter
- Installing new safety switches in your fuse box for the solar power system

- Connecting the inverter to the fuse box
- Placing stickers to notify electricians and emergency services of the presence of your solar power system

30. How long will the installation of solar panels take?

The actual installation process should only take 1 day, however some solar PV system suppliers have a long waiting time of several months before they will install your system. Once your system is installed your meter may need to be changed before you can be paid for your exported solar power. If you do need a new meter there can be a delay of a few weeks between the installation of the system and the changing of the meter. The changing of the meter itself takes approximately 1 hour.

31. Will my power be interrupted during installation?

Your power might need to be switched off for short period during installation when the electrician connects the electrical components, and again for a short period if your meter needs to be changed.

32. Who can supply solar power systems and connect them to the grid?

There are many companies offering to sell and install solar PV systems including many electricity retailers. Some of these companies advertise actively. Any company is allowed to sell the solar power equipment but the companies that install solar power systems and connect them to the grid must be accredited, so your system can be counted for Small-scale Technology Certificates (STCs). Some companies will use accredited subcontractors to carry out the installation and connection process. All installers are required to photo identification which you can ask to see.

33. Who does the paperwork?

The paperwork for connection includes a Certificate of Electrical Safety. Your installer must provide a copy of this certificate for your distributor. Ask your installer who will be doing the paperwork for you to get the Small-scale Technology Certificates (STCs) and for you to be paid a feed in tariff by your electricity retailer.

Meters

34. Will I need a new meter and will I have to pay for it?

If you have an older style accumulation (spinning disc) type meter then you will need a new meter to support your PV system. The meter may be called an interval, bi-directional or smart meter. Smart meters are being rolled out across Victoria over several years. You should confirm with your distributor whether a new meter is required at your address, what kind it will be, and what it might cost. You may be charged for a meter upgrade through the electricity bills that you receive from your retailer. If you have a smart meter and get solar panels later, the meter may require some adjustment.

35. Who supplies my meter?

Your distributor is responsible for supplying and maintaining your meter and retains ownership of your meter at all times. Any charges for your meter are passed on to you through your retailer.

36. How long will it take for a new meter to be installed?

In most cases your new meter will be installed within a few weeks of the solar power system being installed. This time is required for paperwork regarding your installation to be passed to your distributor for review and for your distributor to arrange a service crew to visit your house and carry out the meter change. If there is a long delay in installing the new meter you should contact your solar panel supplier and your distributor.

37. If I get solar power, do I automatically get a smart meter?

Smart meters are currently being rolled out across Victoria over a number of years. If you do not already have a smart meter and you get solar power installed, your distributor might either bring your house forward in the queue for a smart meter, or they may install a temporary interval meter until your smart meter is installed at a later date. This depends on the way in which the distributor is planning their work to roll out smart meters in your area.

38. Have there been shortages of meters?

There have been some delays in installation of interval meters.

The roll out of smart meters is being done over a number of years because of the large amount of work required, not because of a shortage of smart meters. Across Victoria, about 2.5 million meters need to be replaced and it is most practical and efficient to spread this workload over several years.

39. How do I read my new meter?

The interval meter or smart meter installed when you get solar power is an electronic type of meter that has a digital display, usually operated by a push-button on the face of the meter. There are different brands and types of interval and smart meters, so the specific operation and style of display can differ. Generally, pressing the button on the meter will scroll the display through different pieces of information including the total amount of imported electricity in kWh, the total amount of exported electricity in kWh, and the current time and date. Some meters will also show the rate at which you are currently importing or exporting electricity. If you have three phase electricity connected to your house or business, information for each phase as well as total figures are displayed. For detailed information about reading your specific interval meter it is advisable to contact your distributor.

Renting

40. I'm renting. Can I have solar power installed?

You would need the permission of the landlord before installing solar power on a property that you are renting. If there is a body corporate, permission may also need to be sought from the body corporate. You are unlikely to be eligible for the premium feed in tariff because a rental property is generally not considered a primary place of residence. This will reduce the financial benefit from installing solar power. You should also consider how long you are likely to remain in the property as this will also affect the financial benefit you receive from the system (unless you plan to uninstall the system and take it with you when you move).

41. My landlord wants to install solar power. How will this affect me?

If you pay the electricity bills at your property, the installation of solar power should reduce your bills. However there might also be a change to the tariff structure that your retailer offers you. If you

currently have peak and off-peak tariffs, your retailer may transfer you to a flat tariff which might increase your electricity bills. It is advisable to check with your retailer what effect the installation of solar power might have on your tariff structure before your landlord installs solar power.

Your power might need to be switched off for a short period during installation when the electrician connects the electrical components, and again for a short period if your meter needs to be changed.

Resolving problems and getting more information

42. What is a Defect Notice? Am I at risk of getting one?

A Defect Notice is issued by your distributor if they find a problem in your household wiring that might affect safety. When a distributor installs a new meter they will often run tests to check that your wiring is safe before a meter is changed, or before your house is re-connected to the grid. If your house has an existing electrical problem, this might be discovered during the meter change and a Defect Notice might be issued. If you are given a Defect Notice, you will need a registered electrical contractor or licensed electrician to fix the problem and issue a Certificate of Electrical Safety for your distributor. Installing a solar power system itself should not create a defect as the installers have been accredited and are required to seek a Certificate of Electrical Safety for their work.

43. Who do I talk to if there is a problem with my solar power system?

The installation of solar power involves a number of steps and a number of different parties. The avenue for resolving problems depends on which stage, and with which company you experience the problem. In all cases your first avenue should be to talk to the business that is causing the problem or who has identified the problem. Problems can occur because of communication difficulties between the parties involved, so you might need to liaise between the parties to find a solution. Your solar power supplier should have a good overview of the process of installing solar panels and should be able to assist you in resolving the problem. If the problem persists you can talk to the Energy and Water Ombudsman (www.ewov.com.au or ring 1800 500 509) for problems relating to your retailer or distributor, or Consumer Affairs Victoria (www.consumer.vic.gov.au or ring 1300 558 181) for problems relating to your solar power supplier or installer.

Further information

Small-scale Technology Certificates (STCs):

Office of the Renewable Energy Regulator

www.orer.gov.au or ring (02) 6159 7700.

Feed in tariffs:

Department of Primary Industries

<http://new.dpi.vic.gov.au/energy/policy/greenhouse-challenge/feed-in-tariffs>

or ring 136 186.

Comparing electricity retailers:

Essential Services Commission

www.yourchoice.vic.gov.au or ring 1300 134 575.

If you have a problem:

Try talking to the business first. If they can't fix the problem, contact

- Energy and Water Ombudsman www.ewov.com.au or ring 1800 500 509
- Consumer Affairs Victoria www.consumer.vic.gov.au or ring 1300 558 181