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## **FAQ – Frequently Asked Questions**

### **What is the difference between solar electricity panels and solar hot water?**

Solar panels take light from the sun and make electricity. Solar hot water systems take heat from the sun and heat water. It's easy to remember:

- Heat from the sun heats the water.
- Light from the sun turns on the lights.

### **How do solar power systems work?**

Solar power systems convert the energy from sunlight into Direct Current (DC) electricity. An inverter then converts this DC power to Alternating Current (AC), to make it compatible with grid electricity. Solar power systems should be oriented to the North and tilted in order to generate as much electricity from the sun as possible.

### **Why use solar power?**

It is quiet, clean energy and reduces electricity bills. It avoids the impacts of fossil fuel power stations such as greenhouse gas emissions and local air pollution. Solar systems involve no moving parts, and have a life expectancy beyond 25 years, backed up by extensive warranties. It can add value to your house, and make an interesting and unique architectural feature.

### **Will my solar panels make power during blackouts/power surges?**

If you have a grid-connected system your power will go out in a blackout, as your system's inverter automatically disconnects the electricity supply to prevent electrocution. In regional areas where the supply of electricity is not reliable, 'non interruptible' solar power systems can be installed to provide power when blackouts or power surges occur. Such systems also incorporate a battery bank to store the backup power.

### **Will my solar PV panels provide me with electricity during a black out?**

No. Regulations stipulate that all grid-connected inverters must be shut down simultaneously when the grid is broken down. This is an electrical safety regulation for electricians to avoid electrical hazard during trouble-shooting.

### **Will the technology be outdated soon?**

All technologies get superseded. However, our solar systems have been designed to last for more than 25 years with only one one-off capital investment. Even though new technologies are being developed, you will still benefit from the top performance of the system you purchased in accordance with your needs.

### **Are solar power systems reliable?**

Solar power systems are covered by Australian standards and installed by trained professionals. Suntech Solar warranties are 25 years for panels; 10 years for the inverter; and 5 years for the labour. The actual life expectancy of the solar panels is over 40 years. There are a number of solar systems installed over 20 years ago are still operating today, and continue to exceed expectations of their power generation capabilities.

### **How reflective are solar panels?**

Solar panels are designed to absorb as much light as possible to generate the maximum amount of electricity. Therefore the materials typically have zero or low reflectivity.

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**Where are your solar panels made?**

Suntech panels are imported from China. Suntech is the world's leading solar cell and panel manufacturer with over 1.4 Gigawatts already installed, which represents over 7.2 million quality panels producing clean power worldwide.

**What is an inverter?**

The grid connected inverter converts the electricity from your solar panels (DC) to mains power electricity (240V AC). It also safely stops the solar system if there is a blackout on the power lines.

**Do I need permission from the electricity distributor before I install solar panels?**

Yes. Electricity distributors are not obliged to connect your system to the grid. Before you purchase a grid-connected solar power system, the process Little River has put in place will have checked with your local electricity distributor about connection and metering arrangements.

**Is it possible to upgrade/expand panels and/or inverter?**

Yes, it is possible to expand your system at any stage by adding more PV panels and a larger capacity inverter.

**What about heritage-listed areas?**

It depends on each council's regulations, so it is best to check with your local council.

**Do I need home building insurance to install?**

No, but Home and Contents insurance is a good idea if you have solar panels. As with all major household purchases, make sure that your solar power system is included.

**Are my panels covered by insurance?**

Most likely they would be covered by your home insurance policy but you need to inform your insurance company of your solar PV installation and confirm this.

**What if my roof doesn't face north?**

North-facing roofs are ideal for solar power, but most systems can work up to an angle of 45 degrees off North, or a system can be designed on a side-pitch array frame for West, and West Facing roofs. Solar panels installed onto flat roofs can be tilted to face the sun. When designing your system the accredited installers will inform you of any performance loss due to the orientation of your roof so you can make an informed decision about where to put your panels.

**What if I have a flat or low pitched roof?**

For those roofs with a flat or very-low-pitched roof (below 10 degrees), we will have a frame installed to elevate the panels to approximately 30 degrees pitch. Additional costs may occur at installation.

**Is the Inverter weather proof and can it be installed externally or will it have to be installed internally?**

The inverter is weatherproof. It can hang on any external wall where there is no sustained, intense, direct sunlight. If more suitable, the inverters can be installed internally provided there is adequate air ventilation. The key to long life of the inverters is being placed in a well ventilated, shaded area.

**If I move home, can I take the solar panels with me?**

You could take your solar power system down and re-install it at your new house provided the roof of the new house is suitable. Alternatively, you could include it in the selling price of your house. Some rebate guidelines restrict shifting the panels to an alternate address for the first five years.

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### **How long does the solar installation take?**

A solar installation typically takes a single day, however more time may be required depending on the size and complexity of your system. Your installation includes the mounting of all solar modules and appropriate framing, installation of the inverter, and connection of the solar system to mains power.

Installation does not include the changeover of the electrical meter – this will be charged to you by your electricity provider (Country Energy supplies free of charge; you will have only to pay for the installation cost).

### **How big is the inverter?**

The size of a regular inverter is approximately 430 x 300 x 215 (W x H x D) in mm. Mounting location is usually outdoors; hung on a wall.

### **My meter is near my front door. Do I have to have the inverter near my meter?**

Ideally the inverter goes near the switchboard and/or meter. This incurs the minimum cost. However, with the heritage overlay considerations in some council areas, inverters probably cannot be visible from the street. This means inverters may have to be moved from the ideal location possibly incurring an extra fee. An idea of extra cost to move the inverter would be \$200 - \$250 but this would depend on the particular circumstances and is determined at the site visit.

### **What happens to the excess electricity that I produce during the day?**

The excess electricity will be automatically fed back to the grid, it is not stored. The bi-directional smart meter will record the electricity being fed back into the grid as well as the electricity being imported from the grid.

### **Why does my meter get changed over?**

The meter must be changed so your electricity retailer can measure the amount of solar electricity you export and credit your account. It is especially important now that New South Wales has the Premium Feed-In Tariff of \$0.60 / kWh

### **Do solar power systems ever pay themselves back?**

The payback on a solar electricity system can be as short as 5 years, after which your solar system has the capacity to earn you money while you generate clean electricity and watch electricity prices rise. The time it takes to pay back your system will shorten as prices continue to rise, and you can minimise your payback period. Keep in mind that solar panels are a similar price to many other home renovations and consumer goods which will never pay themselves back e.g. home theatre, new carpet, swimming pool, a new kitchen or even a car.

### **Will I still get paid for all the electricity that I generate?**

Yes, your energy retailer will pay you gross feed in tariffs, which in NSW is \$0.60 / kWh. Country Energy will pay and extra \$0.00821 / kWh.

### **Will solar panels damage my roof structure?**

Your roof has been designed to carry a lot of weight and most roofs will hold panels without need for reinforcement. Solar panel framing is attached to the rafters of the house so that the load is ultimately borne by the roof structure not the roof material (e.g. tiles). The Accredited Installer will design your solar power system to take into account your roof structure. Solar panels are placed over the top of any roof penetrations, and all penetrations are waterproofed so the roof won't leak.

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### **Are they easily maintained?**

Solar panels are designed so that they need minimal maintenance. Special dust resistant glass coating helps keep the panels clean – less maintenance means more power. Dust typically reduces output by 5% but since solar panels are sloped, the rain keeps them clean; you'll just need to hose them down after long periods of little rain. A maintenance manual produced by the Clean Energy Council is available which details how to keep your panels clean and productive.

### **Will my solar panels survive a hailstorm?**

Yes. Suntech solar panels are made of tough laminated glass and are almost indestructible. They are built to Australian standards for storms and snow loading. They are also sloped so hail slides off. From 2009 onward our modules have a 4 mm thick toughened glass surface, while most other modules only have 3.25mm thick glass. This improvement will significantly increase hail protection.

### **Is my solar system electrically safe?**

As accredited installers, all our installations comply with the Australian Standards for Solar Electricity Grid Connect systems. All installed systems are inspected by an electrical inspector and a Certificate of Electrical Safety is issued.

### **Do solar panels produce enough energy to recoup the energy it took to make them?**

Yes. Modern Mono-crystalline solar panels will make approximately enough electricity in 4 years to cover the amount of energy that was used in manufacture. Solar panels generally have around a 40 year lifespan.

### **What is the environmental cost of making solar panels?**

Making solar cells from silicon does use some toxic chemicals. However these are all contained and re-used, unlike the air pollution created by burning coal. Disposal can also be controlled.

### **How efficient are solar panels in comparison to other renewable energy technologies?**

In terms of converting a renewable resource to energy, solar panels are less efficient (15%) than other renewable energy technologies such as wind farms (30%) or hydro generators (40%). However, solar panels require the least maintenance since there are no 'moving parts' as in other technologies.

### **How many greenhouse gases would be saved with solar panels?**

A typical 1 kW solar power system would roughly save 1.4 tonnes of greenhouse gases each year (a tonne on CO2 equivalents is enough to fill an average family home!).

### **Can you recycle old solar panels?**

Since the silicon is treated with various chemicals ('doping') to make the surface more receptive to light, it is difficult to manufacture into new products. That doesn't mean to say you can't fashion a great coffee table from an old solar panel!

### **When does the Solar Bonus Scheme start and what do the transitional arrangements mean?**

The Solar Bonus Scheme's regulatory framework is set out in the Electricity Supply Amendment (Solar Bonus Scheme) Act 2009 and the Electricity Supply (General) Amendment (Solar Bonus Scheme) Regulation 2009 available at <http://www.legislation.nsw.gov.au/maintop/search/sessional>.

To receive the Scheme's gross tariff, consumers need to have metering that can measure the gross or total amount of electricity generated by their renewable energy generator, often referred to as 'gross metering'. Eligible customers with gross metering will receive the Scheme's gross tariff for all the electricity they generate from 1 January 2010 or from when the gross meter is installed (whichever is the later).

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## **How is the Solar Bonus Scheme tariff rate received? What happens to participating customers' regular electricity bills?**

All electricity retailers are required to provide eligible customers with either a Solar Bonus Scheme credit on their electricity bill or a cash payment representing this amount. How a customer receives their Solar Bonus Scheme benefit is at the discretion of the retailer.

From 1 July 2010 onwards a bill issued to an eligible small retail customer is required to include the amount of electricity supplied to the network during the billing period and the amount to be credited for that electricity. This allows electricity retailers time to ready their billing systems.

Customers should be aware that they may not receive the Solar Bonus Scheme credit and relevant details on their electricity bill until 1 July 2010. Over the first six months of the Scheme, the amount a customer receives on their bill will depend on the applicable transitional arrangements.

## **Who is eligible for the Solar Bonus Scheme?**

Customers with an annual electricity consumption of up to 160 megawatt hours (MWh) are eligible to participate in the Solar Bonus Scheme.

This category includes households (which consume approximately 7.6 MWh per annum on average), as well as some small businesses, schools and community organisations.

## **Am I able to install more than one eligible renewable generator and receive the Solar Bonus Scheme credit?**

No, only one eligible renewable energy generator (solar photovoltaic system or wind turbine) per customer will be eligible for the Solar Bonus Scheme credit.

## **Can I install the gross meter on a sub board?**

No - the gross meter must be installed in the main metering position as there needs to be a direct connection to our network.

## **Can customers install eligible generators at more than one site?**

No – the NSW Solar Bonus Scheme is limited to one eligible generator per customer.

## **What is renewable energy?**

Renewable energy is energy derived from sources that cannot be depleted including solar photovoltaic (PV), solar thermal, wind, wave, hydro, geothermal and some forms of biomass.

## **What consultation has taken place in the development of the Solar Bonus Scheme?**

To ensure that the introduction of the Solar Bonus Scheme is as streamlined as possible for both consumers and businesses, the design of the Solar Bonus Scheme was developed following a rigorous consultation process. That process included a dialogue with the community and industry, including the appointment of a taskforce that considered public submissions, investigated a range of options and their impact on consumers and prepared a detailed public report.

This was also followed by a detailed eligibility review and public submission process that has led to the inclusion of small-scale wind turbines in the Solar Bonus Scheme.

## **Why are large customers not eligible to participate in the Solar Bonus Scheme?**

The Government has focused the Solar Bonus Scheme on small customers to maximise incentives for these customers to invest in small-scale renewable energy generators. Restricting the Scheme to small customers helps keep the costs of the Scheme down for all energy customers.

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**How does the Solar Bonus Scheme's tariff rate compare to the average price of electricity?**

The Solar Bonus Scheme's tariff of \$0.60 / kWh is around three to four times the average price of electricity in New South Wales. The Scheme's tariff rate will be fixed at \$0.60 kWh, meaning it will not vary with the time of the day or during the seven year life of the Scheme. This reduces complexity for retailers and distributors administering the Scheme and keeps the costs down for all energy consumers.

**Will the Solar Bonus Scheme tariff include a GST component?**

Customers should seek independent tax advice concerning GST and any other tax matters.

The NSW Government is not able to provide advice as to whether or not particular income or payments are taxable by the Commonwealth Government. Customers should speak to their accountant or the Australian Tax Office for advice as to whether Solar Bonus Scheme payments are taxable in their particular circumstances.

**Can community-owned solar farms participate in the Solar Bonus Scheme?**

Yes, community-owned solar farms or community organisations are eligible to participate in the Solar Bonus Scheme as long as they meet the eligibility criteria for the Scheme, including that their solar photovoltaic (PV) system is no larger than 10 kilowatts (kW) in capacity and connects to the electricity network through an inverter (up to 10 kilowatts in capacity) and their average electricity consumption is no greater than 160 megawatt hours (MWh) per annum.

**Are businesses and community organisations eligible to participate in the Solar Bonus Scheme?**

Yes, businesses and community organisations are eligible to participate in the Solar Bonus Scheme as long as they meet the eligibility criteria for the Scheme, such as their solar photovoltaic (PV) system or wind turbine is no larger than 10 kilowatts (kW) in capacity and connects to the electricity network through an inverter (up to 10 kilowatts in capacity) and their average electricity consumption is no greater than 160 megawatt hours (MWh) per annum.

**Can owner's corporations participate in the Solar Bonus Scheme?**

Owner's corporations may have an account for common power services as distinct from individual lots. Owner's corporations are eligible for Solar Bonus Scheme payments, provided they meet the Scheme's criteria, for example, they consume no more than 160 megawatt hours of electricity per year, have an eligible solar photovoltaic (PV) systems or wind turbine no larger than 10 kilowatts (kW) in capacity that connects to the electricity network through an inverter (up to 10 kilowatts in capacity) which is installed and connected to the national electricity grid on premises that they own or occupy in NSW.

**Can I install a solar photovoltaic (PV) system or wind turbine up to 10 kilowatts on a neighbour's roof and receive a credit under the Solar Bonus Scheme?**

In order to receive benefits from the Solar Bonus Scheme, eligible customers must install and connect to the national electricity grid eligible solar photovoltaic (PV) systems or wind turbines no larger than 10 kilowatts (kW) in capacity that connect to the electricity network through an inverter (up to 10 kilowatts in capacity) at premises that they own or occupy in NSW.

**How long will the Solar Bonus Scheme run for?**

The Solar Bonus Scheme will run for 7 years. Eligible customers will only be entitled to receive benefits from the Scheme during this time irrespective of when the customer joins the Scheme, subject to transitional arrangements.

**Do all electricity retailers have to participate in the Solar Bonus Scheme?**

Yes, all electricity retailers who supply small retail customers are required to participate in the Solar Bonus Scheme.

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## **How much does a solar photovoltaic (PV) system generate and how much could I expect to receive under the Solar Bonus Scheme?**

Solar PV electricity generation will vary between any two individual installations depending on various factors including:

- Cell and panel efficiency
- Inverter efficiency
- System size
- Angle and facing of installation.

In addition, electricity generated by two otherwise identical solar PV installations may vary from one place to another due to variation in factors such as daylight hours, cloud cover, altitude and the seasonal angle of sunlight incidence.

A solar PV system with a capacity of 3 kW generates approximately 4600 kilowatt hours (kWh) in a typical year. A customer with this size system is likely to receive a credit of around \$2750 each year through the Solar Bonus Scheme.

## **Why is the NSW Solar Bonus Scheme a seven year 'gross' feed-in tariff model?**

Following careful consideration of the Solar Bonus Scheme design, the NSW Government has concentrated the Scheme to seven years and provided for a 'gross' feed-in tariff model. This means that customers will be credited for all the electricity that they generate.

A seven year gross design also provides greater certainty to customers in a rapidly changing environment and takes account of the fact that the price of renewable energy technology is widely anticipated to fall over time.

The Scheme applies the most generous tariff rate out of any of the schemes currently on offer across Australia to all electricity generated by eligible systems. This demonstrates the NSW Government's commitment to supporting the growth of the renewable energy industry.

## **How is the Solar Bonus Scheme design different to the design previously proposed in June 2009?**

The Solar Bonus Scheme now:

- runs for 7 years instead of the 20 years originally proposed;
- provides a credit for all electricity generated from eligible renewable generators, not just the electricity fed into the national electricity grid (in excess of what is used by the customer) subject to the transitional arrangements; and
- includes solar photovoltaic (PV) panels and wind turbines (up to 10 kilowatts in capacity) that connect to the electricity network through an inverter (up to 10 kilowatts in capacity) will be eligible for the Solar Bonus Scheme.

## **Why doesn't the Solar Bonus Scheme guarantee seven year contracts to scheme participants regardless of when they join the Scheme?**

Individualising the length of Solar Bonus Scheme payments poses serious administrative, compliance, and enforcement issues that are likely to increase overall Scheme costs for customers. For example, such a design would mean that businesses administering the Scheme would be responsible for monitoring the entry of participants in the Scheme and ensuring that credits cease to be recorded seven years from the date of each customer's participation in the Scheme.

## **What is the difference between 'net' and 'gross' metering arrangements?\***

There are two main types of metering arrangements:

Gross metering arrangements - are where the customer is credited for all the electricity their renewable energy generator generates.

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Net metering arrangements - are where the customer is credited for the excess generated electricity they feed in to national electricity grid from their renewable energy generator after their premises has used its required needs.

**What obligations does Country Energy (and other distributors) have under the NSW Solar Bonus Scheme?**

Country Energy will credit participating customers' accounts with a 'gross' feed-in tariff rate of 60 cents per kilowatt hour for all the gross metered electricity that a customer's eligible solar photovoltaic (PV) system or wind turbine generates. Country Energy will also provide an additional 0.812 cents per kilowatt hour for avoided transmission use of system (TUOS) charges.

This applies to electricity that:

- Is produced by a complying generator that is installed and connected at the premises of a small retail customer.

- Is supplied to the distribution network by the small retail customer.

However, a credit must not be applied:

- For electricity produced by a customer with more than 10 kilowatts of renewable generation.

- Where electricity is produced by a generator that is connected to the network by an inverter with an overall nominal capacity of more than 10 kilowatts.

**What are the transitional arrangements for existing net metered customers?**

During the transition period (1 January 2010 - 30 June 2010), net metered customers with eligible solar PV systems or wind turbines will receive 60 cents per kilowatt hour for excess electricity that is fed into the grid, after household or small business needs are met. Country Energy will also provide an additional 0.812 cents per kilowatt hour for avoided transmission use of system (TUOS) charges.

Country Energy will provide net metered customers with a gross meter at no additional charge. Installation can be arranged through any level 2, category 4, Accredited Service Provider at the customer's cost.

A list of Accredited Service Providers is available from the NSW Office of Fair Trading and can be found on their website at [www.fairtrading.nsw.gov.au](http://www.fairtrading.nsw.gov.au)

**Who will pay for the replacement of a customer's net meter with a gross meter?**

Country Energy will provide net metered customers with a gross meter at no additional charge.

Installation of the meter is contestable - which means that customers can choose to engage any appropriately authorised Accredited Service Provider to undertake the work (level 2, category 4 ASP). The cost of installation of the meter will be the customer's responsibility.

**What if customers existing net metering arrangements can't be changed to gross metering?**

During the transition period (1 January 2010 - 30 June 2010) customers with existing net metering arrangements will receive a credit of 60 cents per kilowatt hour for all excess electricity that is fed into the grid. Country Energy will also provide an additional 0.812 cents per kilowatt hour for avoided transmission use of system (TUOS) charges.

Under the NSW Solar Bonus Scheme, only customers with gross metering arrangements are eligible for the 'gross' feed-in tariff after the transition period expires.

**Will customers who have recently received approval for the installation of net metering be advised of the NSW Solar Bonus Scheme?**

Yes - Country Energy will write to existing net metering customers and those with an approved application to advise them of the introduction of the Scheme and of transitional arrangements.

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**How much will customers be credited under the Scheme - is GST applicable?**

Participating customers (small business and residential) will receive a 'gross' feed in tariff rate of 60 cents per kilowatt hour for eligible energy that is fed into the electricity grid. Country Energy will also provide an additional 0.812 cents per kilowatt hour for avoided transmission use of system (TUOS) charges.

Credits and charges will appear as a separate line item on customers' electricity bills.

Country Energy is awaiting advice on the application of GST.

**Will the 'gross' feed-in tariff be applied as soon as the new gross meter is installed?**

Yes - once all information has been set up in our billing systems, and provided all the requirements under the relevant legislation have been met (particularly those of a complying generator), customers will be paid the new 'gross' feed-in tariff as soon as their new gross meter is installed.

**Can I maintain my current household electricity pricing after the new meter is installed?**

Yes - your current price for household energy consumption will not change as a result of the NSW Solar Bonus Scheme.

**What are the applicable tariff codes for net metered customers?**

The tariff will have the description of "NSW Solar Bonus Scheme Net".

The tariff codes are:

BLNE2AU for residential customers

BLNE1AU for small business customers

Two new tariffs are applicable for the avoided TUOS charges. These are:

BLNE9AU for residential customers

BLNE8AU for business customers

**What are avoided TUOS (Transmission Use of System) charges?**

Avoided TUOS is a benefit paid to customers for avoiding energy being transported to their home or small business through the transmission network.

**What gross meter will Country Energy provide to comply with the NSW Solar Bonus Scheme?**

Country Energy has ordered the EM 1210 meter that complies with the NSW Solar Bonus Scheme.

Key features of this meter include:

Dual element meter

Will not require additional switchboard space as it will replace the existing general supply meter

287 days import / export half-hour data storage capabilities

Maximum current demand display for excessive usage

Existing read pattern (no negative register reads, reduces meter reader confusion)

Displays Time of Use register for generated energy.

**How will an Accredited Service Provider obtain these meters?**

Country Energy will provide authorised Accredited Service Providers (ASPs) with the new gross meters so they can install them in households and small businesses across regional NSW.