

# ULTIMATE SOLAR GUIDE



**COPPER  
BULL**

ELECTRICAL SERVICES



# BUYER'S GUIDE FOR SOLAR PANELS

---

WHY SOLAR?

TECHNOLOGY

FINANCIAL

---

## Residential solar

---

---



For homeowners, installing a domestic solar system might be a wise financial decision. According to the most recent research conducted by the solar industry, switching to solar energy will save homeowners, on average, at least \$30,000 over the course of the system. You might be the ideal candidate for solar energy if you own your house and spend more than \$75 a month on utilities.

Choosing a trained solar installer to serve as a trusted Guide or expert before, during, and after the installation process is essential, even while buying the appropriate equipment is unquestionably crucial. This presents a problem though, because unlike with equipment and technology, there aren't any industry-wide standards that can be used to compare solar enterprises. This information is intended to assist you in assessing your alternatives, including installers and equipment, so you can make a wise investment for your house.





# WHY SOLAR?

---

To fight rising electricity prices and reduce their environmental impact, more households are switching to solar energy. Many people have reduced their monthly electricity expenses from hundreds of dollars to as little as \$10 by installing solar panels and buying home battery storage.



## Government Rebates

The cost of equipment and installation may be decreased for homeowners who switch to solar energy by taking advantage of state and territory rebates as-well as tax benefits. We advise checking into the following rebates and tax incentives if you are thinking about switching to solar power:

### **Electricity feed-in tariff**

Feed-in tariffs for renewable energy pay for excess electricity generated by small-scale solar photovoltaic (PV) or wind power systems. The amount paid varies between different retailers.

### **Eligibility**

To receive a feed-in tariff a solar PV system must be:

- installed on a household or small-businesses
- connected to the grid within the National Energy Market (NEM).

### **Renewable power incentives**

Households and small businesses across Australia that install a small scale renewable energy system (solar, wind or hydro) receive a benefit under the Small-scale Renewable Energy Scheme (SRES) to help with the purchase cost.



# LATEST TECHNOLOGY AND EQUIPMENT

---

Your objective when building a solar system is to maximise production and reliability over its life expectancy while minimising the cost of installation, like many others who have already gone solar. The durability and effectiveness of your solar system depend heavily on your choice of the most modern solar panels and inverters.

**When purchasing solar technology and equipment, production and durability are crucial considerations.**



To choose the best system, homeowners need be informed of their home's energy requirements. It's not always a good idea to spend your money on the greatest solar panels available, regardless of their quality or efficiency. On the other hand, attempting to save money by purchasing the least expensive system can ultimately lead to a reduction in your overall savings over time.

Most solar panels you'll come across are well-built and strong enough to handle the majority of conditions when it comes to durability. To establish how well a solar panel will operate while exposed for an extended period of time to damp, cold, wind, and other elements of nature, national standards and manufactures guide lines are utilised.

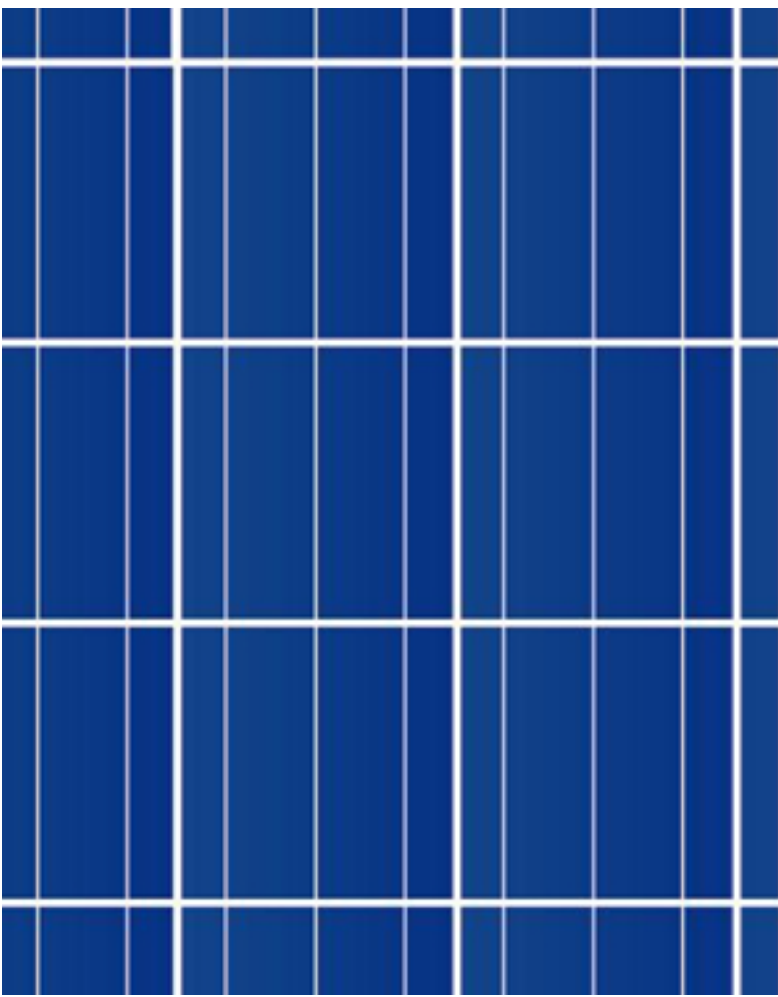




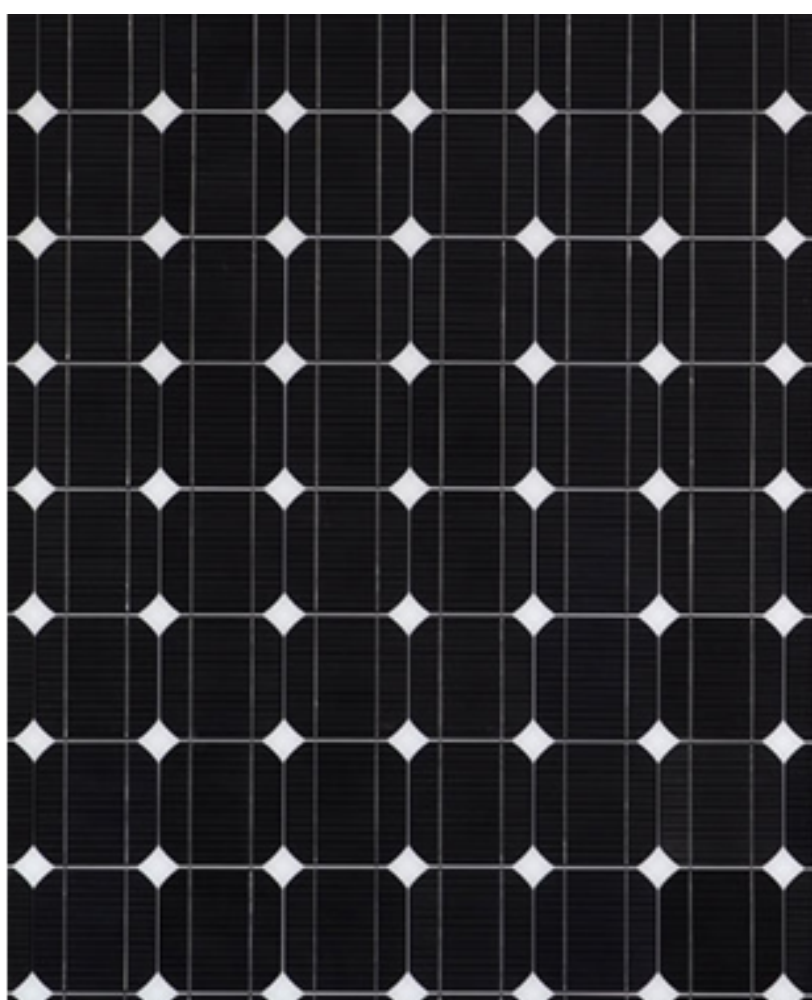
# Type of solar panels

---

There are two primary types of solar panels that you will find when shopping: monocrystalline and polycrystalline panels. Even though both varieties function similarly and are composed of silicon, there are several important differences that should be taken into account before choosing which is best for your home.



Polycrystalline solar panels have lower efficiency than monocrystalline solar panels but are typically more cheap. As a result, they will produce less energy than monocrystalline panels over their lifetime. These are regarded as "baseline" goods.



Monocrystalline panels - Due to its better efficiency ratings and more streamlined appearance, monocrystalline panels are typically regarded as "premium" goods. Many homeowners prefer the complete black appearance of monocrystalline panels over the blue tint that is typical of polycrystalline ones. They are a more attractive product altogether because they create more energy throughout the course of their existence.



# REPUTABLE BRANDS

---

Like with other items, the most reliable products will typically be made by the most reliable companies and producers. The following are some of the top manufacturers to look into when looking for solar panels:

REC's, vision is for every person to benefit from electricity directly from the sun through efficient and sustainable solar products, services.



Trina Solar helped change the industry, rapidly growing from one of the first PV enterprises to become a world leader in solar technology and manufacturing.



JA SOLAR focus on continuous technological innovation, and has well-developed global sales and service network, JA Solar has been widely recognised by domestic and international customers.



## EFFICIENCY

The majority of solar panels have an efficiency of 15 to 20%, however some outliers can reach around 23% (though they typically cost more). As a result, if a solar panel has an efficiency rating of 20%, it will generate energy from a total of 20% of the sunlight that it receives.

## WARRANTY

The ideal warranty period in the solar sector is 25 years. In order to get the best warranties and a safer investment overall, look for panels from reputable and trusted manufacturers.



# INVERTERS

---

There are some very noticeable distinctions between the various types of inverters, even though all inverters have the same purpose—to transform solar energy into useful energy. You can decide on the appropriate equipment for your home by being aware of these distinctions.



(BEST) Microinverters The most effective and technologically sophisticated type of inverter on the market is the microinverter, more specifically Enphase versions. A microinverter will generate the greatest energy both under ideal and unfavourable circumstances. Additionally, they enable the monitoring of each panel's performance and the detection of any production problems' root causes. The benefit of microinverters is that the remaining panels are unaffected when one inverter fails. The disadvantage is that microinverters also cost the most money. For people who want to get the most out of their solar system or for houses that frequently receive a lot of shade, this is a smart option. The typical warranty period for this kind of goods is 25 years.



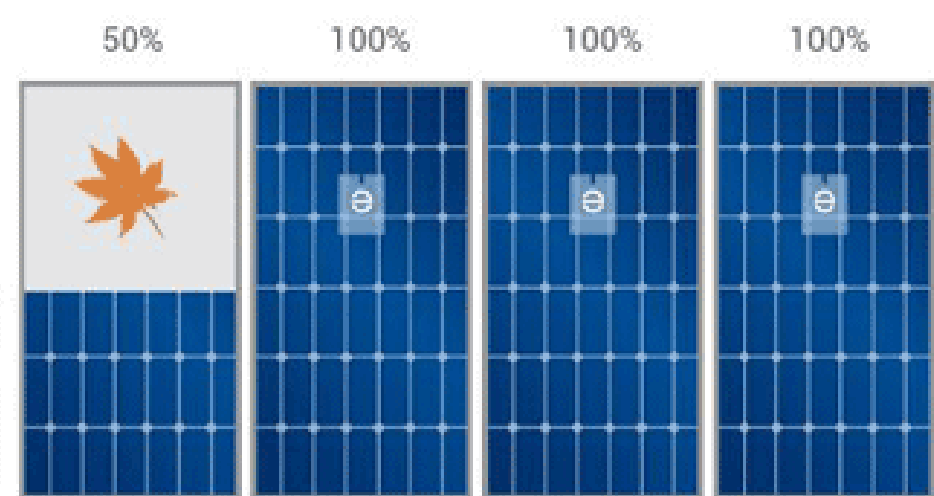
# INVERTERS (CONTINUED)

Optimisers (BETTER) – To increase productivity, optimisers are frequently employed with string inverters. Utilising an optimiser has the advantage of enabling you to measure individual solar panel performance, which is not feasible when using a string inverter alone. However, they require more upkeep and are a little more expensive. A single point of failure is created when they are connected to a central inverter. Anyone who wishes to improve the performance of their system without spending money on a microinverter should consider this "hybrid" approach. Additional charges can be incurred if upgrades in the future are required. Depending on the manufacturer, warranties for this kind of goods might last anywhere from 10 to 25 years.

String inverters (GOOD): These inverters transmit energy to a single inverter inside your home by connecting various solar panels into "strings" of wiring. Although string inverters are the least expensive, they also produce the least. The failure of a few solar panels might cause the entire system to go down, or if the inverter fails, it could create a single point of failure.

## Microinverters

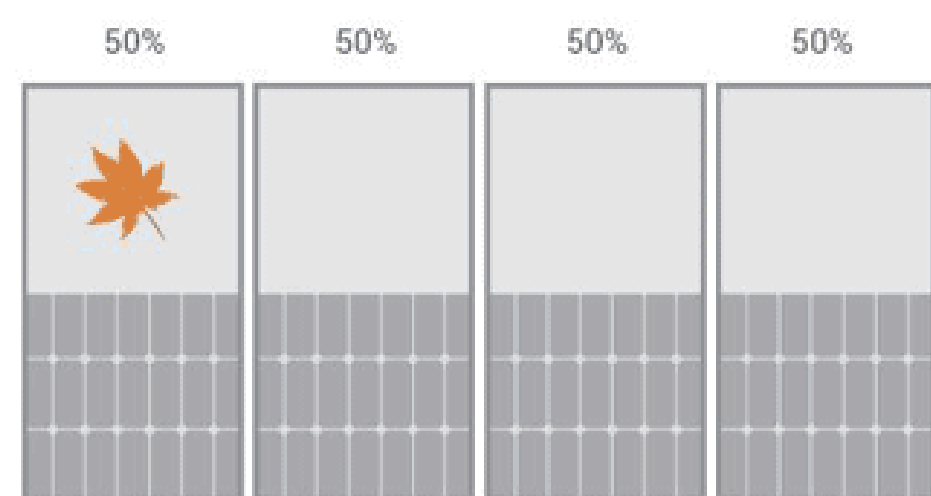
Whether it's a leaf, dirt, or a cloudy day, obstructions happen all the time to every system. With microinverters, only the individual panel is affected, while the others keep performing to their fullest. At the end of the day, that means more solar power and greater energy savings from the same panels.



**Micro Inverter**

## STRING SYSTEMS

A string inverter system can only perform as well as its lowest-performing panel. So, if shade or a pile of leaves hinders one panel's performance, every other panel operates at the same diminished capacity. That means every little obstacle has a big impact on your energy production-- and takes a bite out of your potential savings.



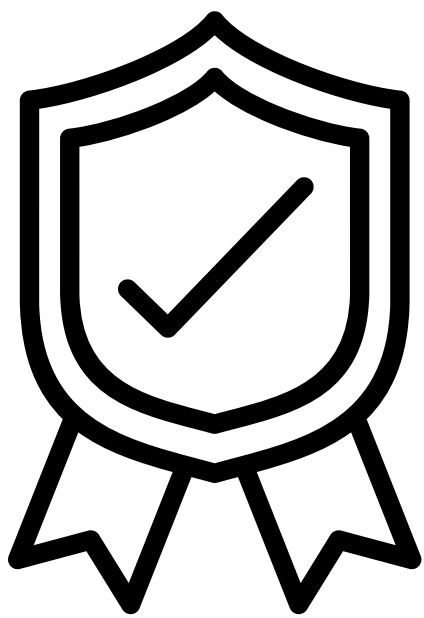
**String Inverter**



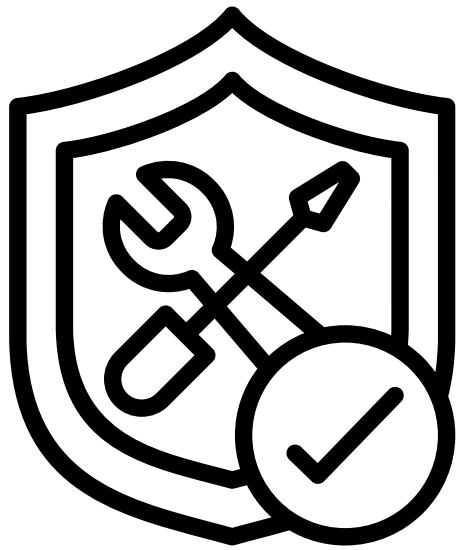
# PRODUCT / WORKMANSHIP WARRANTIES, CERTIFICATE OF TESTING AND COMPLIANCE.

---

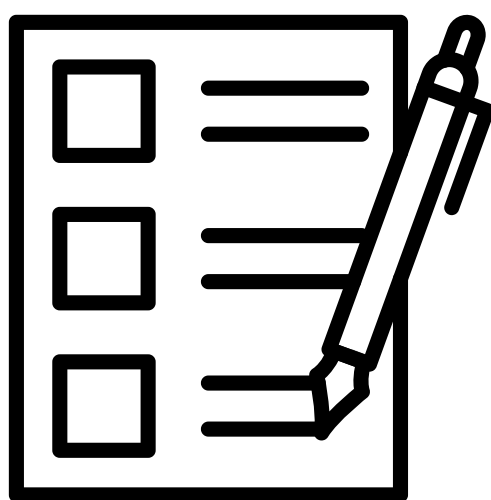
Proper paperwork is essential when selecting a solar installer. It includes product and workmanship warranties, as well as certificates of testing and compliance. These documents ensure quality, performance, and adherence to industry standards, giving customers peace of mind and protection for their investment.



Product warranties are vital for solar systems and should be clearly stated in the proposal. These warranties assure customers of the quality, performance, and durability of the system components. Including them in the proposal demonstrates the installer's commitment to a reliable solar system.



Workmanship warranties are essential for solar systems. They protect customers against installation-related issues and demonstrate the installer's commitment to quality and customer satisfaction.



A certificate of testing and compliance validates that the system components have undergone testing and meet specific performance and safety standards. It is important to note that the certificate of testing and compliance can only be provided by a qualified electrician under the electrical safety regulations. This ensures that the installation meets the required electrical safety standards



# ECONOMICS AND ROI:

---

## FINANCE VS CASH

Getting a finance option can be the best choice for you if you want to enjoy the advantages of solar power without spending all of your life's money. You may need up to 30 months to pay off your loan, but you will still be qualified for government incentives. Your loan payments will usually still be less than your monthly electric bill, even with interest.

Tip\* The majority of homeowners select solar finance since they can repay the system the same way they repay their electricity bills.



The biggest savings will come from paying cash up front because there won't be any interest charges like there would be with a finance option. The majority of homeowners who pay cash get a complete return on their investment in 3 to 5 years, however individual circumstances may vary.





# SOLAR CHECKLIST

---

If doing research for a new solar system feels daunting, take a deep breath. There are reputable businesses out there who are eager to support you as you pursue energy independence. When it comes to choosing the best installer and equipment, don't be afraid to conduct your research and ask as many questions as you need to.

## HERE IS A BREIF CHECKLIST OF THINGS TO KEEP IN MIND WHEN SEARCHING FOR A SOLAR COMPANY TO WORK WITH.



**Installer Selection:** Select a reputable and experienced solar installer. Check their credentials. Look for licence numbers, certifications and memberships in professional organisations, like master electricians, and the clean energy council.



**Product and Workmanship Warranties:** Review the warranties provided by the installer. Ensure they offer comprehensive coverage for both the solar system components (such as panels, inverters, and batteries) and the workmanship involved in the installation.



**Certificate of Testing and Compliance:** Confirm that the installer can provide a certificate of testing and compliance. This certification ensures that the solar system meets relevant safety and quality standards. It demonstrates the installer's commitment to following industry regulations and provides assurance of a reliable and safe installation.



**System Design and Efficiency:** Discuss the system design with the installer to ensure it aligns with your energy needs and goals. Consider the solar panel efficiency and the expected energy output of the system



**Permits and Approvals:** Inquire about the permits and approvals required for the installation. Ensure the installer will handle the necessary paperwork and comply with local regulations and building codes



**Maintenance and Support:** Discuss the maintenance requirements of the solar system and inquire about the installer's post-installation support. Understanding the maintenance needs and having access to reliable support can help ensure the longevity and optimal performance of your solar system.



**Government Rebates and Incentives:** Ask about the available rebates and incentives offered by the government for installing solar systems.

## About Copper Bull Electrical Services.

At Copper Bull Electrical Services, we specialise in solar, air conditioning, and security systems for homeowners. Our team is dedicated to delivering exceptional customer service and attention to detail on every project. From solar installations to air conditioning and security, we ensure your home is comfortable, efficient, and secure. Trust us to provide tailored solutions that meet your needs. Call us today and learn how we can reduce your monthly energy bill and achieve energy independence.



**COPPER  
BULL**  
ELECTRICAL SERVICES



CEC lic #A0426209 EC lic #90289