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SOLAR SYSTEMS GUIDE



WHAT IS SOLAR POWER AND HOW DOES IT WORK?

Whenever the sun shines (even in overcast weather) **solar** cells generate electricity.

An inverter converts the DC electricity produced by the solar panels into 240V AC electricity, which can then be used by the property or household.

If a solar (grid connected) system is producing more power than the amount being consumed, the surplus is fed back into the mains power grid. Some electricity companies will meter the electricity fed into the grid by your system and provide you with a credit on your bill (known as a feed in tariff).

When the **solar** cells are not producing power (for example at night) your power is supplied by the mains power grid as usual. At those times, the energy retailer will charge the usual rates for the power used.

PRICING

Like most things, there is a wide range of Solar products available in the market.

But which Solar product is better, and what's the difference anyway?

The fact is that, various products can perform quite differently, under the same conditions.

Mackies focus is to regularly analyse the various Solar technologies available to establish what we believe to be the best performing, most durable, and energy efficient products available today, our goal is to provide our valued customers with the best return on their solar investment.

We believe that you should only have to invest in the right solar system once.

Our commitment is to offer solutions that maintain high performance & efficient operation year in year out.

COST

Pricing for solar systems varies depending on the size, type, brand, accessories, and location. To give you an idea, our starting price for a fully installed 6.6kW Grid Connected system (that would suit most average households) **is around \$9,800.00 inc gst (after STC's).**

CORRECT SIZING

Everyone's needs are different when it comes to choosing an appropriate sized **solar** power system. To ensure the system you invest in is right to accommodate your energy requirements, our experienced **solar** consultants have the expertise to guide you through calculating your usage. We provide careful consideration to the installed **solar** power generating capacity of your system, which means you will enjoy the **maximum benefit** from your **solar** investment.

OTHER OPTIONS

WHAT IS A HYBRID SOLAR SYSTEM?

A grid connected **solar** system with the addition of battery storage is commonly known as a "hybrid" system. This type of system is designed to be able to store excess power that's not consumed during the day, making it available for use later at night.

Offering the best of both grid connect and off grid **solar** battery storage systems, the hybrid system supplies your night time energy needs with excess power having been stored during the day.

With the added benefit that in the event of a blackout, you will also be able to access your stored energy.

HOW A HYBRID SYSTEM WORKS

A typical hybrid system has a battery bank capable of storing unused daily output from the **solar** array. Hybrid systems commonly use sealed gel battery banks that run at 24- volts or 48-volts DC.

These gel batteries require basically no maintenance and depending on the batteries programmed daily depth-of-discharge (DOD) the batteries usually have a long lifespan before needing replacement.

We can recommend a range of products and options to suit your requirements, including onsite and offsite monitoring to check system performance and reporting.

COST

Pricing for a Hybrid system starts from around \$19,800.00 inc gst fully installed (after STC's).



MAXIMISING SAVINGS WITH SOLAR

Unless you have battery storage with your Solar panels, then the goal is to use as much power as possible during daylight hours, as, naturally, solar power production stops completely once the sun goes down.

In a nutshell, if you wish to reduce power bills, you will need to minimise energy consumption at night! Run, or pre-program big energy users like washing machines, pool pumps, clothes dryers, and dishwashers, to operate (at staggered times) during daylight hours.

If you have reverse cycle Air Conditioning, try to run the A/C during the day, or in the afternoon, to pre-warm or cool the house before nightfall.

If you do have to run A/C at night, running it even one degree cooler on HEATING (say 20 degrees instead of 21 degrees) or one degree higher on COOLING (say 23 degrees instead of 22) can reduce power consumption of your A/C by up to 15%.

Even if you are receiving feed in tariffs for extra Solar energy produced, you are probably only receiving 6-8 cents per kW/h, while you could be paying as much as 45 cents per kW/h to buy from the grid (during peak periods). In summary, try to cut back on energy consumption as much as possible at night (even running normally off-peak items during the day if you can).

OTHER OPTIONS

WHAT IS CATCHPOWER?

Did you know that over 60% of your home electricity usage can be just for Hot Water?

What you may not know is that there is a much cheaper option than a Solar Battery that can save you significantly on your electricity bills.

Put it another way, sick of selling your solar energy for virtually nothing back to the grid, and then paying a chunk of money to heat your hot water EVERY night?

With CATCH Power technology, USING YOUR EXISTING SOLAR SYSTEM you will be able to DIVERT your excess solar energy produced to consistently heat your hot water; saving you hundreds (possibly thousands) of dollars each and every year.

OK, but how does it work?

Instead of selling all of your excess electricity back to the grid for a pittance, and then paying up to four or five times that amount buying off peak electricity for hot water; catch power intelligently feeds excess power produced back into your electric element hot water system throughout the day.

This keeps your water hot for next to nothing, while saving you a chunk on off peak power used.

Catch Power is Australian Made with 5-year warranty, and easily adapts to virtually any existing Solar System.



We hope this information has been helpful, if you have any questions, or we can help in any way, please feel free to contact the helpful team at Mackies on 02 6552 2377.

Mackies have been proudly serving the Mid North Coast for 70 years!



How to maximise electricity savings with your Solar Panels!

Are you puzzled by a high electricity bill despite having Solar Panels? We're here to help you understand why this might be happening, and provide solutions to reduce your electricity costs (and your carbon footprint).

1: Maximising your Solar Power

If your solar panels are NOT equipped with battery storage, it's crucial to optimise your energy usage during daylight hours. Naturally, Solar power production ceases entirely once the sun sets.



Here's what you can do:

Run or pre-program high-energy-consuming appliances like washing machines, pool pumps, clothes dryers, and dishwashers to operate consecutively during the daytime hours. This allows you to utilise the solar energy you are producing efficiently.

Timing is everything:

If you have reverse cycle air conditioning, try running it during the day or in the afternoon. This helps pre-warm, or pre-cool your house before nightfall, reducing the need for extensive heating or cooling during the night.

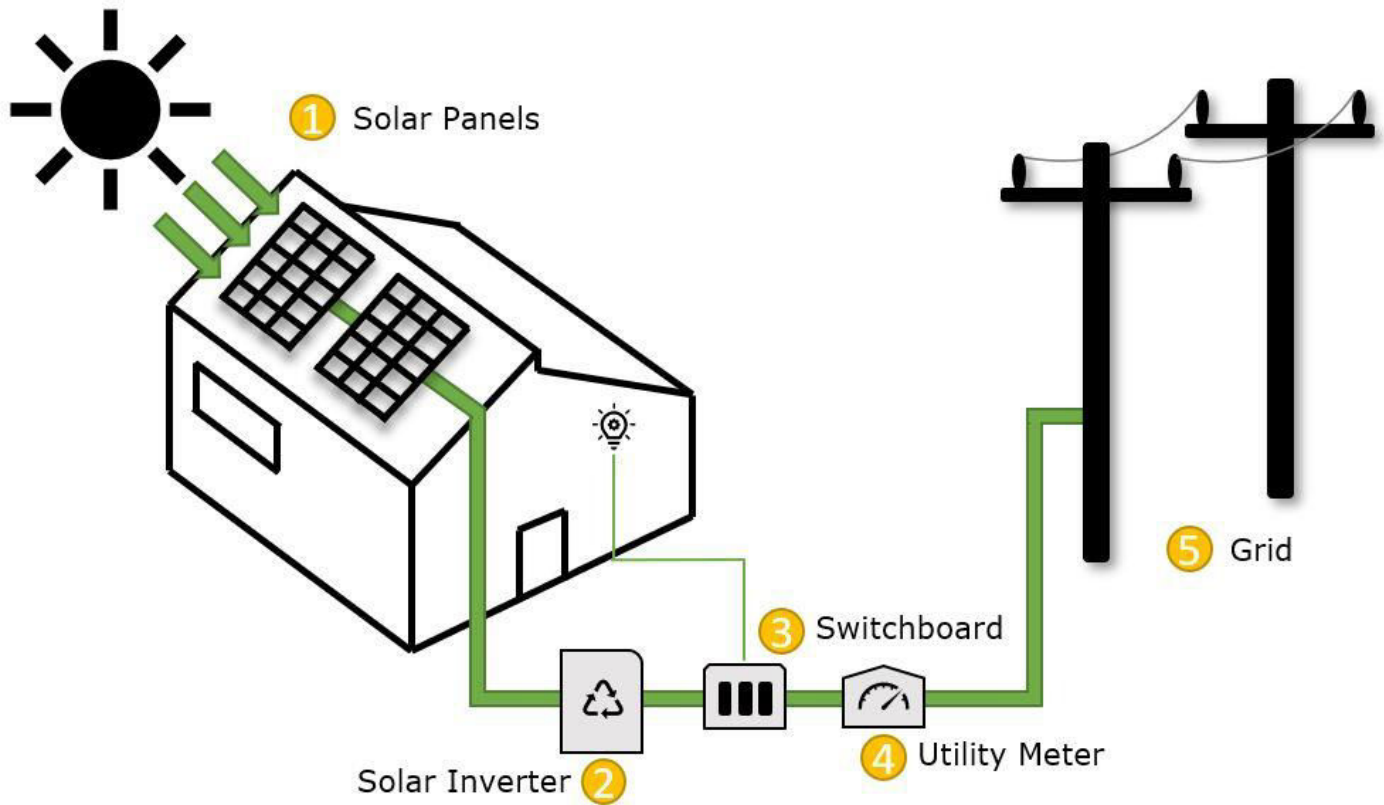
Adjust Your A/C Settings:

If you must run the air conditioner at night, consider lowering the temperature by just one degree on HEATING mode (e.g., from 22°C down to 21°C) or upwards on COOLING mode (from say 22 up to 23). This simple adjustment of one degree up or down, can lead to significant power savings, reducing A/C energy consumption by as much as 15%.



2: Understanding Feed-in Tariffs

Even if you're receiving feed-in tariffs for the excess solar energy you produce, it's essential to know the financial implications. Currently, feed-in tariffs (what you get paid for electricity getting fed back into the grid) generally ranges between 6-8 cents per kilowatt-hour (kWh), whereas purchasing electricity from the grid during peak periods can cost as much as 45 cents per kWh. This difference makes reducing nighttime energy consumption even more crucial, especially during peak demand periods.



3: Summary and Tips

To summarise, here are some key takeaways to cut back on energy consumption and save on your electricity bill:

- **Minimise nighttime energy usage:** Reduce the electrical consumption of major appliances and devices during the night, whenever possible.
- **Shift usage to daytime:** Run appliances and big energy users during daylight hours to maximise the benefit of the Solar power being generated.
- **Optimise air conditioning:** If using air conditioning at night, adjust the temperature by just one degree to save up to 15% on A/C energy consumption.
- **Be aware of feed-in tariffs:** Although you receive some compensation for excess solar energy, it's vital to remember that purchasing electricity from the grid can be considerably more expensive than what you are being paid for your excess electricity going into the grid (especially during peak periods).

By implementing these tips, you'll take full advantage of your Solar Panels, and can enjoy significant savings on your electricity bill.

Note: This flyer is meant to be a general guide. For specific advice regarding your solar panel system and electricity usage, we recommend consulting one of our friendly, qualified professionals.

For further information, feel free to reach out to the Mackies team on 02 6552 2377.