



Solar Power for Households

1 - Investigate your power requirements

Check out your powerbills over the timeframe of a year (Be sure to include a wet season bill because this is when most people use more power) and calculate your average daily kWh. You will find the details on the kWh used on the back of your power bill. Can you be more efficient? It is important to reduce your usage as much as possible, before you invest in solar power. Have a look at COOLmob audit tools on www.coolmob.org or arrange to have a COOLmob Household Sustainability Assessment.

2 - What size system will you need?

Once you know the average daily kWh usage you need in your household, you can choose the size of your solar (photovoltaic=PV) system. You can choose between having a system that

- a/ completely covers your needs, or
- b/ covers a proportion of your usage that you can upgrade over the years.

3 - Solar Photovoltaic power generation on your roof

Most 1.5 kW systems produce on average throughout the year 6 kWh per day or greater. Your panels will produce much more on a sunny wet season day because the sun is over head, but will produce less on a cloudy day. In Darwin, due to our latitude near the Equator, a low pitch roof of 10-12 degrees is ideal for solar power production. To see production rates of domestic solar power go to www.pvoutput.org

There are different types of PV systems: thin film, poly-crystalline or mono-crystalline. There is often debate over the varying pros and cons between the systems. There is some evidence to suggest that thin film operates better in Darwin conditions. On a non cloudy Darwin day in the 'wet' a thin film system has produced 10 kWh, which is slightly more than a mono-crystalline system.

For more details refer to website <http://www.yourhome.gov.au/technical/fs67.html> or the magazine *Renew* which often keeps up to date on these issues.

4 - Installation

Important things to consider when installing are: Cyclone building coding, Deemed To Comply (DTC), warranty (up to 20 years) shading and orientation.

Fitting photo voltaic (PV) solar panels involves

- Buying (Australian approved) PV panels and inverter
- A grid connect connection fee and possibly a change to a digital meter power box (sometimes old asbestos power boxes need replacing as well).
- A solar power accredited electrician to fit the panels
- A building permit application or installer with a Deemed To Comply solar system.

- **For further information on installation**

<http://www.yourhome.gov.au/technical/fs67.html>

- **For the connection procedures for NT go to**

<http://www.cleanenergycouncil.org.au/cec/resourcecentre/Consumer-Info/connecting-to-the-grid.html>

5 - When buying a system it is wise to Shop Around!

There are a number of companies, both local and interstate, offering to fit solar panels to your roof. The good news is PV Systems are becoming cheaper! Competitive offers are frequent. In 2011 COOLmob found quotes for around \$3500 for 1.5Kw system including rebates.

6 - REC's

Renewable Energy Certificates (REC's) are the currency for renewable energy in the renewable energy market. The value of one REC is equal to one megawatt-hour of renewable electricity generation and avoided power consumption, such as in the case of producing solar hot water.

You can chose to reduce the price of your system by selling your RECs to your supplying company or you can claim the REC's yourself. You will need to clarify this in your contract.

7 - FEED-IN TARIFF

Many states are offering feed-in tariffs to pay you for the power you produce. If you produce more power than you use, NT PowerWater will buy your excess power at the same rate that you buy it from them. (This is called a feed-in tariff). Presently in the NT you buy electricity from Power and Water at \$0.1952 per Kilowatt hour. NT customers are paid for the power produced in excess of their own requirements; it is called a 'net' feed-in tariff. Gross feed-in tariffs are not currently available in the NT.

It is possible to be independent from the grid and buy a stand alone system. However due to the batteries involved in storing the power this is much more costly.

8 - Solar Credits

Solar Credits is a mechanism that increases the number of REC's created for eligible installations of photovoltaic (PV) systems up to 1.5kW capacity. REC's are not means tested. If fitting additional panels you can still sell your REC's at market prices but you will not receive the extra multiplier value paid for solar credits. From July 2011 REC's for the first 1.5kWh system will be 3x the value. From July 2012 they will be 2x the value, and 1x the value there after.

9 - How quickly can I pay off my investment?

A designer tool that you may be helpful is found at: <http://www.energymatters.com.au/climate-data/> you can enter your postcode, and the designer uses BOM data based on the nearest weather station.

10 - For more information go to www.orer.gov.au

<http://www.ourlivingcoast.com.au/wp-content/uploads/Solar-panels-consumer-guide.pdf>

<http://www.cleanenergycouncil.org.au/cec/resourcecentre/Consumer-Info/solarPV-guide>

There are a number of companies willing to fit various brands of panels in Darwin. Some are listed here. By providing this list, COOLmob is not making a recommendation.



Eco-Kinetics	1300 377 873
Delta Electrics	89844033
Lee Point Electrical	0418809857
RMD Solar	89329988
Quality Solar	0405 364 715

