

Photovoltaic System

The photovoltaic system (PV system) commonly known as solar panels is becoming an investment many businesses are looking into and are now able to afford.

A PV system typically includes solar modules / panels, an inverter and solar tracker.

In order to gain maximum sunlight, solar panels are typically installed in a northerly direction; however the amount of sunlight captured and generated into usable electricity will vary depending on the size and type of PV system.

The three commonly used PV systems in Australia include:

- ◆ *Mono-crystalline*
- ◆ *Poly-crystalline*
- ◆ *Thin film*

Each system has their positives and negatives, so depending on the business' budget and expectations on the amount of energy achieved from your investment, different panels will suit different business needs.

Mono-crystalline

The mono-crystalline solar panels, as the name suggests are made from a single crystal of pure silicon. They are currently known to be the most efficient system, with the ability to produce up to four times the amount of electricity as thin film panels; but are also the most expensive.

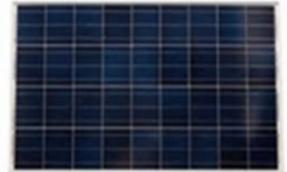


Acknowledgement Statement

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Polycrystalline

The polycrystalline solar panels have been the dominant technology on the market, due to its midrange price and efficiency.



Thin film

Thin film solar panels are produced by depositing thin layers of silicon on glass or stainless steel. They are cheaper to produce compared to the other two solar panel technologies, and can be produced in masses.



Due to the thin layers, thin film panels are the least efficient of the three panels, as they absorb less.

Benefits of using solar energy / PV system

Solar energy is a very efficient form source of energy that can be generated into electricity. It is renewable which means it will never run out.

Solar energy is particularly useful for remote areas, where the main electricity grid is not connected to the property.

A PV system also provides the following financial benefits for businesses:

- ◆ Drawing less electricity from the grid by generating electricity that can be used by the business
- ◆ Offsetting your bill by receiving a feed in tariff for every kWh of excess electricity fed into the grid

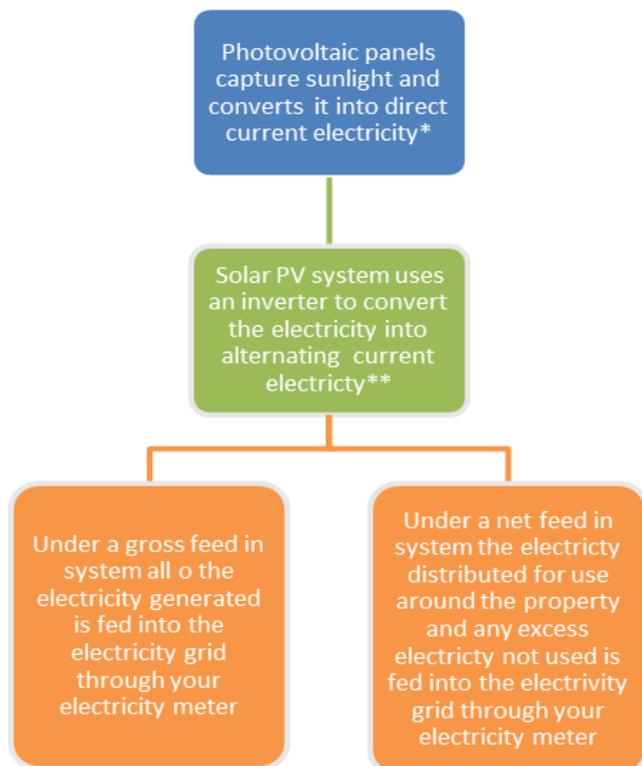
Feed in tariff reimburse you for any surplus power your PV system feed back into the grid when it generates more power than your business uses at the time of generation.

Discuss the options available to you with your electricity provider to gain maximum benefits.

How do PV systems work?

The photovoltaic system works by absorbing sunlight and converting it into electricity that can be used by the business.

The below diagram is a summary of the process.



* Electricity that cannot be used

** Electricity that can be used

Choosing the right PV system

Explore all your options when planning to install a PV system; and consider the following to choose the right PV system for your business:

- ◆ Does your building have sufficient roof space? A 1.5kW PV system will require at least 15m².
- ◆ Is your roof suitable for supporting the solar panels and racking?
- ◆ How much money are you prepared to invest? Depending on the business' electricity usage and type solar panels installed, the payback period will vary. In some cases payback periods could be up to 10 years.
- ◆ Are you looking at generating all or just part of your electricity needs?
- ◆ Are there any Government rebates or incentives available?

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Asking your supplier and installer questions is important in ensuring that the right PV system and deal is chosen for your business.

Details to clarify include:

- ◆ You are dealing with an accredited supplier and installer
- ◆ The PV system meets Australian Standards
- ◆ Product warranties
- ◆ Service agreements and performance guarantees
- ◆ Quotes (best to obtain written quotes)
- ◆ Payment terms
- ◆ Time frames

Every business and its needs will be different, so it is important to research diligently and ask your installer all these questions.

FOR MORE INFORMATION

Call us on **9829 1117**

Email us at environment@vacc.com.au

Visit us at autoenergyinfo.com.au

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