



Thinking about solar PV?

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Here's some expert advice to help you make the right decision

Before making a decision regarding solar photovoltaic (PV), or any other inverter energy system (IES) like wind, hydro or batteries, you should consider factors such as:

- What sized PV system best meets your needs?
- Do you need a system that exports power to the grid?
- Do you need to upgrade your existing electrical installation?
- What is Reactive Power Control and why is it important?
- Should you allow for a battery energy storage system to be added in future?

What sized PV system best suits your needs?

You can find your consumption information on your electricity bill to help you decide what sized system is most suitable. As a general rule, you can expect an average of 4 or 5 hours of sun per day in Queensland, so dividing your daily consumption in kWh by 4 or 5 will provide a rough guide. You should talk to a solar PV supplier or installer for more tailored estimates that take into account factors like your occupancy, the location and aspect of your premises and the differences between exporting and non-exporting systems.

Do you need a system that exports power to the grid?

From 1 July 2014 customers will be able to apply for inverter systems that don't export electricity to the grid. These systems do not attract a Feed-in Tariff (FiT) under the Queensland Government's Solar Bonus Scheme but they promote better grid stability than export systems and have some distinct advantages:

- Applications are likely to be processed more quickly and are more likely to be approved.
- Non-exporting systems are not affected by the grid voltage as much as exporting systems and could operate more effectively.

If you do choose a system that exports, you may be eligible for a FiT that will be credited to your electricity account by your electricity retailer for every kilowatt hour (kWh) the system exports to the grid. The rate for regional Queensland small customers installing an inverter up to 5kVA is 9.07 cents per kWh, which may reduce to 6.53c/kWh if the carbon price is removed. Provided they maintain their eligibility, customers that are currently receiving the 44 cents FiT will continue to do so until the 44 cent rate is due to expire on 1 July 2028. The Queensland Competition Authority reviews the electricity price and the FiT annually. More information is available at www.dews.qld.gov.au

Do you need to upgrade your existing electrical installation?

Some old meter boards, boxes and electrical wiring don't comply with current electricity legislation, and will have to be upgraded before an Inverter Energy System (IES) can be safely installed. If your existing meter box is not hinged or uses porcelain fuses, it may need to be upgraded. Additionally, to provide you with the size of system you require, it may be necessary to upgrade your service line, your sub mains from the Ergon Energy connection point or the number of phases



on your premises. Your PV installer or electrical contractor should advise you of any need to upgrade your premises and you must take that into account when pricing your new system.

What is Reactive Power Control and why is it important?

More advanced inverters can help regulate voltage by exporting real power and importing 'reactive' power. This is called reactive power control and is set by the installer. If we recommend reactive power control for your system, it may be able to operate longer before the inverter trips-off at its maximum voltage. Ergon Energy strongly recommends that all inverters rated 2kVA or greater have reactive power control enabled. This will be mandatory for all new connections from 1 January 2015.

Should you allow for a battery energy storage system to be added in future?

Ergon Energy supports the installation of approved Battery Energy Storage Systems (BESS), as they can provide choice and control for customers, and aid with disaster resilience. BESS can be charged from solar PV systems or using off-peak tariffs. BESS are likely to become more popular in the future so it is worth talking to your installer about making provision to add batteries. Your installer can consult the new Connection Standard for Small Scale Parallel Inverter Energy Systems up to 30kVA for guidance how BESS can be connected to the grid.

Other Considerations

To manage the risk of voltage fluctuations on the network, Ergon Energy conducts technical assessments on many of the IES applications it receives. Occasionally, we need to alter or decline applications to protect the overall quality of electricity supply in certain areas and to ensure systems are able to operate effectively. If this happens to your application, we will notify you of your options in writing.

Other potential assessment outcomes may include recommending smaller inverters, non-export systems or spreading the generation capacity across multiple electrical phases. Ergon Energy requires that inverter capacity greater than 5kVA must be spread over two or more electrical phases as evenly as possible. This applies to exporting and non-export systems and enhances the operation of the IES and the network as well as protecting appliances in your premises and even in neighbouring premises.



Securing approval before installation – it's a must-do

It is a requirement under the *Electricity Regulation 2006* that you apply to Ergon Energy, either directly or through your installer, for approval to connect an IES to our network before you install your new system.

Applications for inverter capacity **up to** 30kVA* can be lodged via:

www.ergon.com.au/your-home/connections/renewable-energy-system-connection

Applications for inverter capacity **above** 30kVA can be lodged via:

www.ergon.com.au/your-business/connections/major-connections

Before having your IES installed, you must receive Ergon Energy's approval, which is granted in an IES Network Connection Agreement. Failure to do so may involve extra costs for you and your installer. Your system may have to be turned off, or reduced in capacity or removed completely. We encourage installers to sight the agreement before commencing installation, so please have it ready for them. If you have questions not answered by this document or the website, please contact our Solar Support Team on 1300 553 924 or energysystems@ergon.com.au.

*kVA is a more correct way to state the capacity of an inverter than kW. In the absence of reactive power control, the useful power generated in kW will be the same as the inverter capacity in kVA.