Queensland Communities in Transition

Rural property, Elis - saves money and enhances lifestyle by turning to renewable energy

The high cost of fuel for locally powered diesel or natural gas generators can make electricity very expensive in regional remote areas of Queensland. By generating renewable energy, isolated communities no longer need to store contingency supplies of fuel and can lower their energy costs, secure a more reliable supply of electricity and generate fewer carbon emissions.

Bill Spence and his wife Robyn live on a grazing property at Elis, an hour drive from Muttaburra in Central Queensland. This remote property relied on a diesel generator costing around $26,000 annually to meet their electricity needs. The nearest electricity grid node is 16km away which would cost them between $200-300k for a connection.

The Spences decided to invest in an 8kW solar photovoltaic system and 16kW battery whilst keeping the diesel generator as back up. The entire system cost $57,000 including upgrading to a more efficient air conditioning system. The system was purchased using an Equipment Finance Loan from RaboBank.

The system easily meets the needs of their two-person family with the backup generator only kicking in occasionally. When extended family comes to visit it the generator tends to start at 2am in the morning and run for an hour or two until it tops up the batteries.

In addition, the solar system increased the value of the property.

HIGHLIGHTS

- **32 ET solar panels (8kW)**
- **2 x 5kW battery inverter**
- **16 x Sonnenschein PowerCycle Batteries**
- **4 x Sonnenschein 4 battery cabinets**
- **LED lighting and a/c upgrades**
- **Paid for itself in around 2 years.**
- **System is sufficient for the general electricity use of 2 people.**

An unforeseen benefit of the new system means they are no longer tied to the property to refill the generator every night to keep it running, improving their lifestyle.

The system comprises 8kW solar panels with 16 batteries providing 16kW of usable batteries. There are two 5kW inverters and a smart system that switches between feeding electricity to the house and then excess to the battery. Similarly, the smart system switches from the panels to the battery to feed the house when the solar panels are not providing enough power to meet the needs of the house.

Every 90 days the generator runs for 8 hours to top up the batteries as a preventative maintenance measure.

"When the solar salesman came I told him I was prepared to give up things like the electric kettle, frypan etc.. but not my toaster. He told me I didn't have to give up anything – he was right. We just have to be sensible. I will iron/wash during the day.

Robyn Spence

Household energy consumption

- **Air conditioning**
- **LED lights throughout**
- **50L hot water system run during the day only**
- **2 fridges**
- **2 x 35yold deep freezers**
- **Kitchen appliances**
- **TV and DVD player**
- **Electric power tools**
- **Gas stove (original)**

The only daily change the Spences had to make is to turn the hot water system off at night so it does not run off the battery.

The draw of Bill's 3kVA electric welder would have was too much for the system and potentially damaged the batteries so he purchased a portable 8kVA generator and invertor welder which does just as good a job as the bigger welder and because it is also very light, it is easier to use.

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