

HOT WATER HEATING

The energy required to heat hot water by a conventional immersion element and storage tank is quite high and for most Australian households represents the highest year round source of electricity consumption.

Most electric storage hot water systems have been heated by cheap electricity switched to them in the middle of the night and called by the industry, controlled loads. Controlled load 1 is the cheapest and switches on around 11PM and switches off at around 7AM next morning. Plenty of time to heat the largest storage tank. Another controlled rate, controlled load 2 is switched on and off at various times during the night and day and suits those with smaller tanks and high usage. For the convenience of more regular heating a higher tariff applies. Some rough numbers are around 16 cents/kWh for CL1 and around 20 cents/kWh for CL2.

Those households with solar would have been up to now been better off by exporting electricity during the day at say 21 cents/kWh and heating their water at night for 16 cents/kWh.

Things have changed. Today everyone with solar has noticed that the export tariffs have slumped to below 10 cents/kWh. Or possibly 13 cents/kWh if with a generous retailer. Now it makes sense to use solar electricity to heat the water during the day and not use controlled load electricity.

Strategies to know when to allow the solar to heat the water. The simplest is to set a time switch to divert energy from the solar inverter in the middle of each day when the sun is at its zenith and hope that its not a cloudy day, If it does switch on when little solar energy is available the electricity will come partly or wholly from the grid; at a cost.

The next approach is to use a hardware device called a solar diverter. There are many kinds of this device on the market but all attempt to monitor the solar generation situation and make intelligent decisions as to when to switch the hot water element on and when not. Some detect export power flowing into the grid above a value represented by the power rating of the hot water tank element. Others monitor grid voltage and when it rises to a high value that signals to inhibit inverter export it switches the element on. In all cases of course the element is in series with the tank thermostat and if the thermostat signals that the water has reached the upper set point no further heating occurs.

Therefore there is a solution to declining export tariffs by maximising a household's self consumption. Of course any method involves modifications to the house wiring, work done by electricians. However it is small scale work and the diverters are affordable. The total outlay will be recovered quickly.

For more information about us, please visit our website or give us a call today. We are here to help point you in the right direction for the most optimal solutions.

Get in contact with us, we'd love to hear from you.

