

LIVING OFF THE ELECTICITY GRID

Stand alone power systems are used where there is no connection to mains electricity or where you have a preference for a self-sufficient energy system. On a country property, it may be more economical to install a stand alone power system than to connect to the electricity grid. Most of your power will come from solar panels without regular utility bills but over the life of the system you will need to make allowances for replacement of components such as batteries.

CHOOSING YOUR POWER SOURCE

When installing a stand alone power system it is important to consider the range and suitability of power sources to your site. The geography and climate of your property are determining factors.

Solar Electricity

Solar electricity is applicable almost anywhere. There are few sites that have such low amounts of sunshine not to warrant a consideration of solar electricity. The sun is a versatile and reliable source of power despite its seasonal, and daily limitations. The best situation is a north-facing, unshaded site.

Back-up Generator

Many stand alone power systems require a back-up diesel or petrol generator. A generator can offset the initial cost of your system and can provide for the irregular times when renewable electricity production is not possible. If you already have a generator this can usually be hooked into the system. The idea is to run the generator as little as possible.

Solar system sizes and costs will vary according to individual requirements. For further assistance on specific stand alone power systems please contact Going Solar. The following solar output figures are based on southern Victorian solar radiation data. * Please note: prices are indicative.

STAND ALONE POWER SYSTEM EXAMPLES

**Daily Energy Load (kWh)	System Size (Watts)	# of Panels	Cost (inc. GST) *Excluding Rebate and Installation
1.3	510	6 x 85W	\$ 12,950
2.6	1000	10 x 100W	\$ 24,840
3.7	2040	12 x 170W	\$ 34,200

These example systems utilise Selectronic Inverters and Sonnenschien Gel Batteries

** Calculated by conducting an energy audit (see example to the right)

ENERGY AUDIT EXAMPLE

This is a sample audit sheet for estimating how much and where you consume electricity. Please see the example below and use the blank audit sheet on the other side to record your own audit.

1. Make a list of all lights and appliances (and quantity of each) in columns A & B. It's helpful to include the make and model of the appliance. Be sure to include all rooms, garage and workshops.
2. Locate the Wattage (W) of the appliance and place the figure in Column C.
 - *Finding Watts on Lights:* The wattage will be written on the light globe, either on the globe itself or on the base. For solar systems we recommend using energy efficient lighting eg LEDs (Light Emitting Diodes).
 - *Finding Watts on Appliances:* The wattage will be written on a compliance sticker or plate on the back, usually near the power cord. Some fridges will have this information inside on the side of the door. If the power is not written in Watts, record the Volts (V) and Amperes (A) of the appliance. (Watts = Volts x Amps)
3. Estimate the hours per day the appliance or lights will be used in Column D.
4. Multiply the Qty x Watts x Hours/Day and place that figure in Column E.
5. Sum the total of Column E at the bottom to calculate your Total Daily Energy Consumption.

A	B		C		D		E
Appliance / Light	Qty	X	Watts	X	Hrs/Day	=	Watt Hrs/Day
Kitchen							
Lights	2		15		2		60
Fridge	1		190		8		1520
Microwave	1		1000		0.25		250
Toaster	1		600		0.1		60
Food Processor	1		500		0.1		50
Lounge room							
Lights	1		15		4		60
Lights	2		20		1		40
TV	1		120		2		240
Video	1		100		1		100
Stereo	1		60		2		120
Bedroom							
Lights	2		15		1		30
Study							
Lights	1		20		0.5		10
Computer	1		160		0.5		80
Printer	1		100		0.1		10
Total Daily Energy Consumption							2630 Wh/day

