



Why Solar?




Murray Craig



Solar Centre Brisbane

Energy Availability (FUEL)

Solar Radiation Annual Average Mj/m² (Solahart SCF software)

Brisbane (Australia) 19.2	Osaka (Japan) 13	Berlin (Germany) 9.7
		

Solar Technologies

Solar Thermal



Solar Photovoltaic



Solar Hot Water – (40 – 60%)

Solar PV – (2 – 20%)



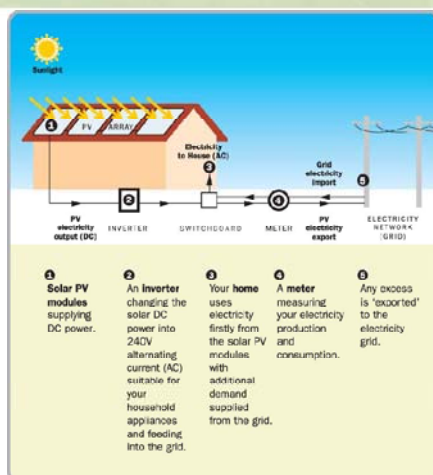
Solar Thermal Options



Solar Photovoltaic



Solar Photovoltaic – Grid Connect



Comparative Costs

Technology	Solar Hot Water (Thermal)	2kW Grid Connect (PV)
Potential Daily Generation	8kWh	8kWh
Approximate Investment (Retrofit)	\$1400 (\$5500- \$2600 -\$1500)	\$15,000 (\$22,000 - \$7,000)
Potential Generation	43,800 kWh (15 Years) T33 Saving \$8350	73,000 kWh (25 years) \$45,000 - \$150,000
Fixed Cost of Generation	3.2c kWh	19c kWh

Note: Investments include all applicable rebates



Solar Design Considerations

- Orientation
- Inclination
- Location
- Shading



Solar Design Considerations



Estimated System Performance

Electricity Cost	\$	0.17
------------------	----	------

Month		Consumption 8 - 4pm 2kWh (250W)
January	31	2
February	28	2
March	31	2
April	30	2
May	31	2
June	30	2
July	31	2
August	31	2
September	30	2
October	31	2
November	30	2
December	31	2
	365	

Generation 2.94kW System			
Monthly	Daily Av kWh	Offset	Net Excess @ 50c
397	12.8	\$ 10.54	\$ 167.30
325	11.6	\$ 9.52	\$ 134.50
347	11.2	\$ 10.54	\$ 142.70
251	8.4	\$ 10.20	\$ 95.70
225	7.2	\$ 10.54	\$ 81.25
224	7.5	\$ 10.20	\$ 82.00
266	8.6	\$ 10.54	\$ 102.05
301	9.7	\$ 10.54	\$ 119.25
349	11.6	\$ 10.20	\$ 144.70
354	11.4	\$ 10.54	\$ 146.20
387	12.9	\$ 10.20	\$ 163.40
408	13.2	\$ 10.54	\$ 173.20
3835	10.5	\$ 124	\$ 1,552
			\$ 1,676



Case Study



 **Solahart.**
hot water free from the sun

Case Study

Electricity Consumption & Generation 1 Jan 09 – 30 Jun 09

T11 Cooking, lighting, power, air conditioning	T33 Pool & Solar Boost	T97 Net Feed In
1214kWh = \$206.38	1414kWh = \$127.26	734kWh = -\$367

Net Power Bill - \$33.36

 **Solahart.**
hot water free from the sun