Solar Hot Water – Quick Guide

System Sizing

People	Panels	Tank Litres	
		Close	Split
1 – 2	1	180	250
3 – 4+	2	330	315
5 – 6+	3	-	315

Indicative Costs

For family of four:

Renovation	$5,000
New House	$6,000
Plus	Average $600 for gas upgrade
Less	$1200 for vitreous enamel tank
Add	$200 per panel for frost protection

Most Commonly Used Materials

Excelsior Panels	Flat Plate Copper Panel Copper Risers TiNOX Selective Surface
Tanks	Stainless Steel Inner Lining CFC Free Foam Insulation 20% more than Aust Standard. Range of colours for close-coupled tanks (no extra cost but needs to be pre-ordered)

Place of Manufacture

Panels	SS Tanks	Gas Booster
Australia	Australia	Japan

Most Common Boosting

Electricity	2.4 or 3.6 kW Element
Nat/LP Gas	Rinnai Infinity S20/S26
Wood	Via Tedson Heat Exchanger (cost around $500) where storage tank is usually located above the wood heater. A 'heat exchanger' in/above the woodstove is also called a 'wetback' or 'boiler'; or 'flue water jacket' when used at the base of the flue.

General

Tanks should be located as close as possible to the water usage points ('wet areas' – bathrooms, kitchens, laundries, etc). Where an ensuite (or other point) is located more than 20 metres from the tank it may be preferable to install an on-demand pre-circulation pump, a separate SHW system or a secondary gas booster. Panels ideally to be as close as possible to the tank.

Weights (including water)

Panel	39-46 kg
Tank 180 Lt Close Coupled	225 kg
Tank 330 Lt Close Coupled	400 kg

Rooftop tanks need a supporting structure.

Panel Angles (from horizontal)

Minimum	10°
Optimum For ease of installation on most roofs	20° - 40°
Preferred To enhance winter performance. Tanks would need to be located on separate platform.	50°
Maximum (Melbourne)	58°

Frost Protection

All areas in Victoria are potentially subject to frost - water freezing expands and can rupture pipes and panels. Frost protection should be recommended and costs **$200 extra per panel.** FTCs are used with all close-coupled systems and with splits in mild frost areas. E-Frost are used with split systems only in heavy frost areas.

Water Quality

Stainless steel tanks need soft water (mains water or rain water). Hard bore water will reduce the life of SS tanks. Particular problem areas are in south-western Victoria. Check with the customer.

Prices and Details subject to change

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Warranty

	Years
Panels	7
Stainless Steel/Enamel Tanks	10/5

Guide Only to Return on Investment

Where replacing existing:	Years
Electric Tank	7-10
Gas Tank	10-15

Quoting Information

New Houses	Plans required
Existing Houses	Photos of existing equipment: HWS, gas meter; and/ or switchboard. Also distance from gas meter to location of new HWS.
NB Installation cost is the main variable in system costs	

Domestic Case Studies

http://www.goingsolar.com.au/domestic	See:
Custom Close-Coupled (panels at 58°) and Water Saving. **Award Winning System**	Northcote
Split System and Water Saving.	Mentone
Close-Coupled Wood Stove Tedson Coil LP Gas Boosting **Award Winning System**	Riddells Creek
Custom System Nectre Bakers Oven Tedson Coil Natural Gas Boosting	Warranwood

Link to useful flue install examples:
www.thefireplace.com.au/fireplace_installations.html

Nectre Wood Heaters

Model	Output#	Heats*	Ped	Legs
N15	12 kW	15 sq 140m^2	$1300	$1100
Inbuilt	16 kW	15 sq 140m^2	$1830 $2400 with fan	
Mk 1	19 kW	20 sq 185m^2	$1835	$1715
Mk 2	21 kW	21 sq 195m^2	$2250	$2065
B/Oven	11 kW	11 sq 100m^2	$2475	
B/Oven BIG	18 kW	19 sq 180m^2	$3550	
Mega	35 kW	40 sq 370m^2	$2675	$2550

#* Approx. *Based on standard ceiling height (8'6"). Where there are higher ceilings or a storey above, recommend a larger heater to heat the same area.

Notes on Nectres

- Heaters and flues need to be installed to strict Standards, away from combustible materials including below and behind the heater. See the Nectre brochure for **minimum clearances**.
- **Wetbacks** for hot water boosting can be factory fitted on the Bakers Oven and Mega. Wetbacks or flue water jackets may be possible for the other units but the inbuilt can be tricky due to access restrictions. [See Boosting].
- Optional **fans** are available for the Inbuilt, Mk 2 and Mega however we would suggest no fan. If high ceilings recommend a ceiling fan.
- **Warranty:** B/Oven 5 years; Others 10 Years.

Flues

- For Inbuilts where installed in a fireplace with a functioning chimney use a **Chimney Kit ($299)** which consists of 12' of SS piping, a cap and a cowl. For higher chimneys (from the top of the inbuilt) extra SS is available in 3' lengths.
- Room Nectres use a **Standard Kit ($515)** with 12' (four lengths) of SS, 2 lengths of mesh and 2 lengths of double galvanised casing (totalling 12') and a cowl. To design a flue we need to know height from floor to ceiling, ceiling to roof line, and roof line to ridge line. The cowl needs to be 600mm above the roof line (and the ridgeline unless more than 3m from same). Double gal casing is needed 150mm+ below a ceiling, through a ceiling and outside. Add either SS & mesh or SS & double gal for high ceilings, roof lines or double storeys. See link at left for useful info on flue installs.

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