



Hot water systems buying guide

Summary of article by Chris Barnes - Choice

Water heating can account for a quarter of typical household energy use, so it's worth reviewing your hot water usage well before your current system dies and checking out the alternatives available: you may find a system that saves energy and money and is kinder to the environment.

To reduce this environmental impact, government regulations now limit the installation of electric HWS:

- Electric HWS can't be installed in any new detached, terrace or town house, or any such existing property where there is access to piped natural gas (some exemptions apply).
- From 2012, this has applied to existing detached, terrace or town houses. However, not all states have implemented the phase-out at this time, or have varied their regulations from the federal scheme.

1. Understanding the options

Which fuel? The most common fuels used for water heating are gas and electricity. But you can also get hot water from sun and air. In areas where you can't get natural gas, liquid petroleum gas (LPG) is an expensive alternative.

Which type? There are two main types of water heater: storage and instantaneous. Instantaneous heaters heat the water instantly, while in storage heaters it's stored in a tank ready to use.

Storage tanks:

Tanks	Storage tanks must withstand high water temperatures and pressure, and have to be protected against corrosion Tank materials: Mild-steel or stainless steel Hot water systems will require ongoing maintenance such as occasional replacement of valves and seals. Check with the installer whether a particular type of tank is suitable for the water in your area before you buy.
Heater type	
Electric	Choice of tariffs for water heaters: <ul style="list-style-type: none"> • continuous or day-rate supply (+smaller tank, - more expensive to run) • off-peak or night rate (- larger tank, + cheaper to run)
Gas	There are standard and high-efficiency gas storage heaters. + small tanks and cheap to run
Solar	- Needs big tanks to allow for days with lower radiation or a higher demand
Heat pumps	+ Heat pumps don't rely on the sun, so a slightly smaller system is sufficient
Gravity-fed systems	
	- as the hot-water pressure depends on the height difference between the tank in the roof space and the water outlet, it's usually not enough to allow several hot-water outlets to draw from the tank at the same time + these systems don't require much maintenance, and can last for a very long time. Can connect to any heating type.



Instantaneous heaters:

No heat losses, and as long as there's gas or electricity, you'll never run out of hot water.

The size you need (the flowrate in litres per minute) depends on the number of hot water outlets the heater has to serve.

Heater type	
Electric	Electric instantaneous water heaters have to be connected to the day-rate tariff (- running costs will probably be higher than with an off-peak storage system. + However, because there's no tank to lose heat, they're cheaper to run than day-rate storage heaters)
Gas	You can select different temperatures for different water outlets. + They're likely to be cheaper to run than gas storage systems

2. What type suits best for you?

- Gas-boosted solar systems are generally considered the greenest option (and most economical in the long run) but won't suit all homes. If you have to go for an electric system, aim for instantaneous or off-peak systems if possible.
- Small household (1-2 people): If solar access is good, a gas-boosted solar HWS may be the best option. However a gas storage or instantaneous system will probably be cheaper to install.
- Medium household (3-4): Gas systems (instantaneous or storage) are a good option here, but heat pumps and solar HWS are also a good choice due to increased economy of scale.
- Large household (5+): Gas storage units may be more economical than instantaneous systems.

3. Points to consider:

- How many people live in your home, how much hot water you use and when you use it (e.g. do you all shower in the morning or evening, do you wash clothes in hot or cold water, etc)
- Is natural gas available in your area?
- How much sunlight does your roof get in summer and winter?
- Local climate - ambient temperatures, frost and so on
- Your budget, and the purchase and operating costs of a new system (including possible rebates)
- Your home's design - space and access for potential hot water system locations
- Your current system - if electric storage, you may qualify for rebates when replacing it with greener options. Or you may be able to incorporate it into a new system, e.g. as a storage tank for a solar system.

Saving energy and water:

- If you have a storage system, make sure the tank and hot-water pipes are well insulated.
- Limit the water temperature to around 60 degrees celsius if possible.
- Install it as close to the main hot-water outlets as possible.



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- Turn it off when you go away for more than a couple of days.
- Take showers instead of baths, and limit them to about five minutes.
- Get low-flow shower heads and taps, or install flow restrictors.
- Consider a front-loading washing machine the next time you have to replace yours.

4. Incentives for solar

If you install a new solar or heat pump system, you'll probably be eligible to receive Small-scale Technology Certificates (STCs) which replace the old renewable energy certificate (REC) system

You then either register your STCs and sell them to an energy retailer, or you assign them to an agent (often the supplier of the your hot water system) who will register and sell them for you.

Government rebates can apply when you install a solar or heat pump hot water system.

Source: <http://www.choice.com.au/reviews-and-tests/household/energy-and-water/saving-water/hot-water-options-buying-guide.aspx>