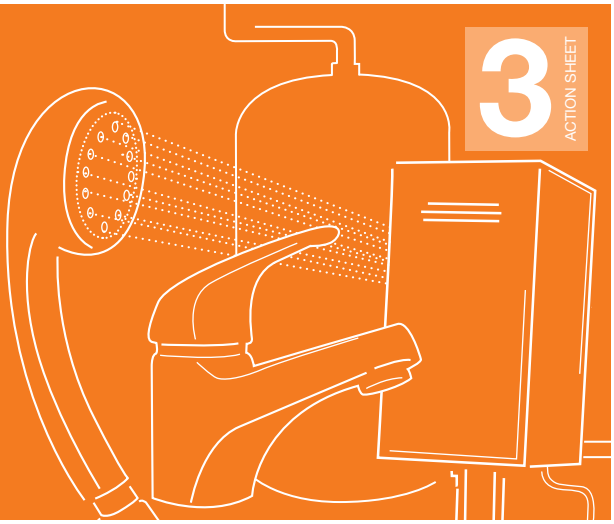
Get more from your hot water



3 ACTION SHEET

Whether you're choosing a new hot water system or using the one you already have, there are some easy ways to reduce your energy use without compromising on convenience.

About 30% of an average household's energy use goes on water heating, but you may be using more energy than you need to get the hot water you want.

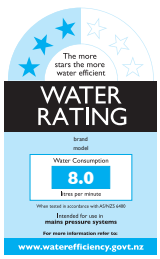
Cutting out the hot water waste and choosing an efficient new system will lower your energy bills and your carbon footprint. It will also make sure more of our country's resources are left for generations to come.

Simple ways to save on hot water

Streamline your system

There are some simple things you can do to cut the waste and make your existing hot water system as efficient as possible.

- **Check your shower flow.** If your shower fills a 10 litre bucket in less than a minute at a normal showering temperature, slowing the flow could save you hundreds of dollars each year while still giving you a good shower. The cheap option is a flow restrictor, which costs around $5 and can be fitted to existing showerheads and handshowers. If that's not satisfactory, a better option is an efficient shower head with a flow rate of 9 litres a minute or less.
- **Ease your tap flow.** Where the volume of water doesn't matter – like sinks or tubs that aren't regularly filled up – water-saving aerators for taps generally cost between $10 and $30 and can halve the water flow.
- **Compare water ratings when buying new showers or taps.** The water rating label tells you the water flow rate and the efficiency rating – the more stars, the more efficient



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- **Fix dripping taps.** Bad drips can waste up to 200 litres of water every day. Simply replace the washer or fitting – a new washer only costs a few dollars.
- **Wrap your hot water cylinder and pipes.** Hold in the heat by wrapping your electric hot water cylinder (you shouldn't wrap a gas storage cylinder) and insulating your hot water pipes (especially the first 1-2 metres from the cylinder). Wraps are about $60 and pipe insulation is about $5 a metre, both from a hardware store. Wrapping an older cylinder and the pipes could save you up to $80 a year. With a newer cylinder, it can save around $40 a year.
- **Check your tap temperature.** It should be no more than 55° Celsius at the hot tap so it won't burn you. If it's too hot, get a plumber to adjust or install the tempering valve, which mixes cold water to the hot water coming from the water cylinder.
- **Check the thermostat on your hot water storage cylinder.** It should be set to 60° Celsius to prevent Legionella bacteria growing. However, having it set any higher is simply a waste – an extra 10° Celsius could cost you $20 to $50 a year. You may need an electrician or plumber to adjust your thermostat.
- **Check for vent leaks.** Some electric cylinders have an open vent pipe which usually sticks up above the roof. If it leaks continuously, it's wasting hot water – get a plumber to check it.
- **Maintain your hot water system** regularly according to the manufacturer's instructions.

1. Assuming electric water heating, three showers per day, shower flow rate 10.6l/min.

Get into some easy hot water habits

With some easy, everyday hot water habits you can cut your energy use, and your environmental impacts, even more.

- Use cold water for washing your clothes. At four loads a week, this could save you around $50 - $75 each year.
- Rinse dishes with cold rather than hot water.
- Only run the dishwasher when it is fully loaded, and then on an 'eco', 'half load' or 'fast' wash setting if available.
- Fill the sink rather than leaving the water running, where possible.
- Shower rather than bath, where practical – it typically uses only half as much water and energy.
- Shorter showers can save you money. In a household of three, each minute you add to your shower time is about $80 a year.[1]

And remember – if your water use is metered, cutting water waste saves you even more money.

Opt for a cheaper, controlled electricity tariff

If you have an electric storage cylinder, heat pump water heater or solar water heater with electric boost, check you're on a controlled tariff.

In return for a lower electricity price, it allows your supplier to switch off the electricity to your hot water cylinder for a few hours each day during peak times. If you don't normally run out of hot water, your cylinder should hold enough hot water to see you through.

Types of water heating systems

When comparing different water heating systems keep in mind that some are more efficient than others, and efficiency can also vary between models of the same type.

Electric systems	
Storage cylinder	Electric storage cylinders have an electric element that heats the water in an insulated tank to a temperature set by a thermostat. What's good: • The upfront cost is relatively cheap. Be aware that: • the running costs are relatively expensive (unless a cheaper night-rate tariff is used) • they are less efficient than continuous flow electric systems because they lose heat storing the water. If you buy: • check if a cheaper night-rate electricity tariff is available and, if so, get a cylinder that's big enough to store enough hot water for a day – ask your system supplier for advice on sizing. Otherwise, get connected to controlled electricity supply – it is cheaper than an uncontrolled tariff. • consider a cylinder with additional connections suitable for having a solar panel, heat pump water heater or wetback added in future.
Continuous flow	Continuous flow electric systems heat water as it runs through. What's good: • They are more efficient than electric storage cylinders. • They can work well as a secondary water heating system (for example, sinks that aren't near the primary system). Be aware that: • flow rates can be limited by the capacity of the home's wiring – check with your supplier • they cannot be used on cheaper controlled and night-rate electricity tariffs • if used often during peak times, they place an additional burden on the electricity supply infrastructure • though the hot water never runs out, using more than you need to is a waste of money, energy and water.

Note: Heat pump water heaters use electricity efficiently to heat hot water by harnessing the sun's energy in the outdoor air or in the ground – find out more in "systems that use renewable energy".

Gas systems	
Storage cylinder	Gas storage cylinders heat the water in an insulated tank to a temperature set by a thermostat. They can run on natural gas or LPG. What's good: • No electricity is required. They can continue to heat and supply hot water during power cuts. Be aware that: • they are less efficient than continuous flow gas systems because they lose heat storing the water • they have higher heat losses than electric storage cylinders • the running costs are relatively expensive. If you buy: • get a condensing system – these are the most efficient.
Continuous flow	Continuous flow gas systems heat water as it runs through it. They can run on natural gas or LPG. What's good: • They are more efficient than gas storage cylinders. • Their hot water flow rates are suitable for most households. • They provide unlimited hot water supply (though there is a limit to the hot water flow rate). • They can free up storage space in your house if a cylinder is removed. Be aware that: • as most require an electricity supply you won't have hot water during power cuts (though power backup systems are available) • they tend to waste more water than other types of systems during the start up lag – this may be important to you, particularly if you are on tank water supply or metered water supply • though the hot water never runs out, using more than you need to is a waste of money, energy and water. If you buy: • get a condensing system – these are the most efficient.

Systems that use renewable energy	
Solar water heating	Solar water heating uses the sun's rays to heat water, which is stored in an insulated hot water tank. What's good: • A well-designed and installed system will meet 50-75% of your hot water needs using the sun's free energy. The remainder will come from your electric, gas or other booster. • It produces fewer greenhouse gas emissions than straight electric water heating. • They work all year round with an electric, gas or other booster for times when the sun can't heat enough water to meet your needs, so you'll always have hot water. Be aware that: • the upfront cost is relatively expensive • not all properties are suitable for solar water heating – check with your supplier. If you buy: • if you choose an electric back-up, check if a cheaper night-rate electricity tariff is available and, if so, get your cylinder sized so you can use it. Otherwise, get connected to a controlled electricity tariff.
Heat pump water heating	Heat pump water heaters use energy from the outdoor air or ground to heat water, which is stored in an insulated hot water tank. What's good: • A well-designed and installed system can reduce water heating costs and greenhouse gas emissions by 40-70% compared with straight electric water heating. • It produces fewer greenhouse gas emissions than straight electric water heating. • Some systems include an electric booster or back-up element to ensure uninterrupted performance in cold climates, so you'll always have hot water. Be aware that: • some systems are better designed for operating in cold places than others – check with the manufacturer • the upfront cost is relatively expensive. If you buy: • check if a cheaper night-rate electricity tariff is available and, if so, get your cylinder sized so you can use it. Otherwise, get connected to a controlled electricity supply.
Solid fuel (wetback) water heating	A wetback can be fitted to the back of many wood or pellet fires, ranges or burner systems, and it uses some of the heat from the fire to heat water. What's good: • It can be a valuable renewable energy supplement for your water heating so you'll produce fewer greenhouse gas emissions. Be aware that: • adding a wetback means you get less of the fire's heat in the room. Most existing fires have adequate capacity to do both, but keep it in mind when sizing a new fire • not all fires and hot water systems are suitable for wetbacks – check with the fire manufacturer and your plumber • in some areas there may be regulations affecting wetbacks – check with your council.

For a comparison of running costs for different water heating options, refer to the chart on the back cover.

Choosing a hot water system

If it's time for a new hot water system, or you just want to save energy, then choosing the right system for your needs can help you reduce your energy use and lower your greenhouse gas emissions.

To help you choose a new system, here are some things to discuss with your water heating supplier.

What size system you need?

Consider how many people live in your house now, and how many might there be in the future. Also look at whether you need a lot of hot water at once – for example:

- Do lots of people need to shower in the morning?
- Does your dishwasher or washing machine draw on the hot water system, and when do you run these?

What will it cost to buy and install?

Generally, the upfront installed cost of a gas or electric system is around $2,000 to $3,000. Solar and heat pump water heating systems are more expensive to buy and install but they are more environmentally friendly and cost less to run. Whatever system you choose, it pays to shop around.

What will it cost to run?

The graph on the back of this action sheet will give you an idea of comparative running costs of different systems.

What are the environmental impacts?

Choosing a hot water system that uses renewable energy sources like the sun or wood will reduce the greenhouse gas emissions from heating your hot water into the future.

Whichever system you choose, using it efficiently will mean less energy and water is wasted.

Are you building a new home?

Aim to have all areas which require hot water (bathroom, kitchen, ensuites, toilets and laundry) grouped together to reduce heat loss from hot water running through long pipes. This can also save on plumbing costs.

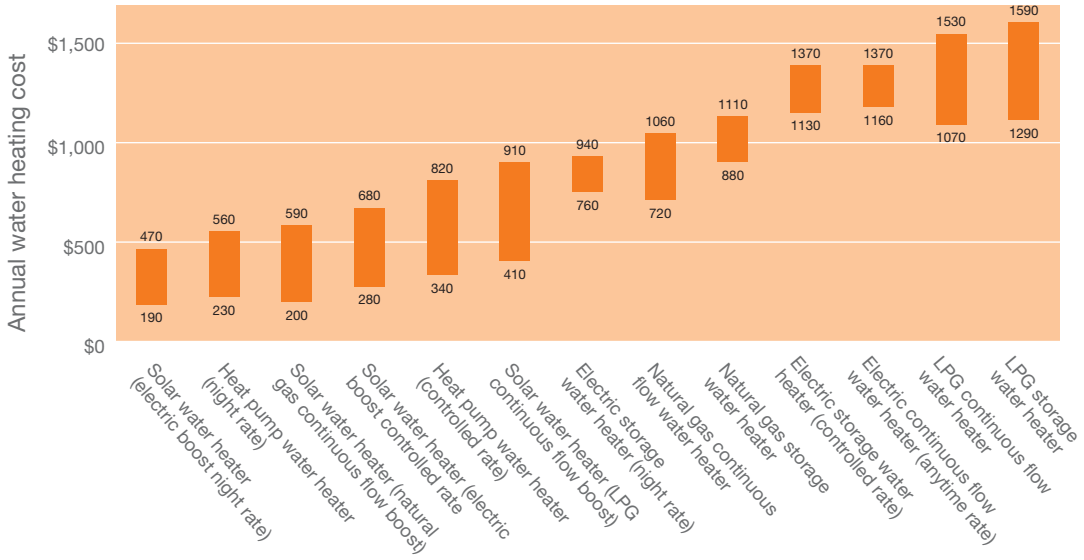
Running costs of a hot water system

Ongoing running costs over a year can vary quite a bit depending on what water heating system you choose to use, how much hot water you use and your energy tariff. As an example, the following graph shows costs for typical four-person household.

Note that:

- Larger households generally use more hot water than small ones, so investing in an efficient water heating could save them more.
- Energy prices can vary significantly by region, supplier and the tariff you're on, so check whether the assumed tariffs are relevant to you.

Indicative running costs of water heating options – four person household



Lowest cost based on high efficiency and warm climate. Highest cost based on poor efficiency and cold climate. Does not include purchase/installation and maintenance costs. Assumes one shower per person per day, shower duration 9 minutes, shower flow rate 10.6l/min. Fuel cost assumptions: Electricity 25c/kWh (anytime rate) / 21c/kWh (controlled rate) / 14c/kWh (night rate); Natural Gas 12.3c/kWh*; LPG (45kg bottle) $102 per refill plus $119 annual rental charge. Note that fuel costs can vary greatly depending on location, retailer and plan. Calculated using the HERS hot water rating tool, documented in BRANZ report EC1475C "ANZHERS – Upgraded hot water rating algorithms", March 2009.

* Natural gas price includes a portion of fixed charges assuming a total annual gas consumption of 7000 kWh. Actual cost depends on your tariff and actual total gas consumption.

Getting more out of your hot water has lots of benefits, and not just for your energy bills. It also means less energy waste, having hot water that's set to safe and healthy temperatures, and lower environmental impacts – and that's good news for everyone.

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JULY 2011/EEC1733