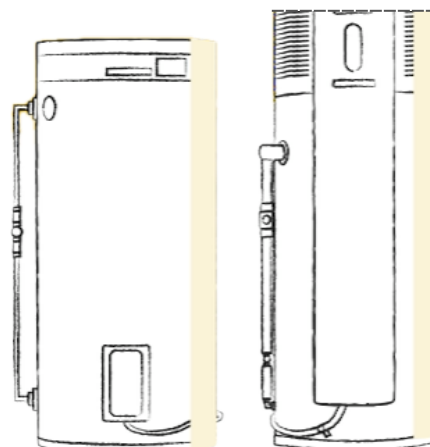




FACT SHEET

Water Heating

Snapshot

Emissions Saved	High
Lifetime	8 - 20 years
Average upfront cost (before rebates)	\$1,500 - \$5,500 (excluding installation)
Potential bill savings (with solar)*	\$8,700 over 15 years
Potential bill savings (without solar)*	\$5,800 over 15 years
Rebates available	Yes (Federal, VIC, ACT, NSW, SA)
Difficulty of installation	Medium
Electrical upgrade required	Unlikely but possible
Installers	Plumber (and maybe an electrician)

Assumptions: Average water heating energy use from the Residential Baseline Study 2021, adjusted to performance of different water heating types. 2025 energy and product prices. 15 year appliance lifetime. Excludes gas fixed/supply costs which would increase electrification savings. Energy prices for forward years are estimated with the historic real inflation rate of each energy type from the associated consumer price index category. COP for gas instant water heater 95%, COP for heat pump water heater 360% average.

The power of the shower.

Water heating is one of the biggest household energy loads, using on average 24% of a home's energy use (1), making it one of the key appliances to electrify. The humble water system also brings one of the biggest opportunities in our energy transition. This is because it can reduce gas consumption significantly and can act as a 'thermal battery'. This means you can often choose when to put energy into it and time it to when it's cheapest. If you have solar panels and an electric water system, you can effectively heat your water at minimal cost with zero emissions. Hard to argue with that!

Electric Hot Water Heat Pumps

Heat pumps use a technology that transfers heat from the surrounding air to heat the water, making it incredibly efficient. Most Aussie homes have an instantaneous gas system (45%) or an electric resistance system (45%). However, it is the electric heat pump that will bring the most energy bill savings. While heat pumps may seem expensive to buy, they are incredibly cheap to run, resulting in savings over the long term. Many governments recognise their value so also offer generous rebates to encourage the switch.

Why choose electric heat pumps?



They use less energy - Heat pumps are really efficient and typically use 65 -75% less energy compared to electric resistance heaters.



They're cheaper to run - Due to their efficiency, heat pumps are the cheapest hot water system to run.



They're better for our climate - Gas hot water systems use a polluting fuel source to heat water therefore have the highest carbon impact, and electric resistance systems take more energy to heat water.



They require less maintenance - Generally, they require less maintenance than other systems, with a professional maintenance check only required every 3-4 years.



They're flexible - With a range of features, such as WIFI compatibility or timers, heat pumps can be used to control household energy loads. This is particularly useful if you have rooftop solar and can choose to heat your water in the daytime.

(1) <https://www.rewiringaustralia.org/report/castles-and-cars-discussion-paper>

What to consider

Don't wait for your cold shower day, do some research before you're ready to replace your hot water system to ensure you choose the right one for your home. Typically the more expensive heat pumps are quieter, use less electricity, have better warranties and use more environmentally friendly refrigerants than their cheaper counterparts.

We encourage you to consider the following elements when making your choice:



Level of control - If a model has a timer or wifi/wired control it will enable you to time when you heat your water so it can be run off your solar power. This is the optimal method to heat your water from an emissions and cost savings viewpoint.



Design - Whether you choose a split or all-in-one (integrated) tank may depend on how much room you have. The split system will have a separate larger compressor which heats water more quickly but takes up more space.



Efficiency - Look for a high coefficient of performance (COP) rating, indicating greater energy efficiency. The more efficient, the less energy used and therefore lower running costs. Avoid models that have electric resistive elements built in marketed as 'back-ups' as this means there is a much higher energy draw.



Refrigerants - Some refrigerants are greenhouse gases and have a detrimental impact on our climate. CO2 (as a contained refrigerant) and R-744 are good choices for the environment, while R410a and R134a should be avoided.



Warranty - Warranties are complex with different periods that cover for labour, tank and parts but generally opt for longer warranties from companies that have been around for a while. Also note that the distance from an approved service agent may add to repair costs.



Noise - Some Heat Pumps can be noisy like a reverse air conditioner, so consider your neighbours and how close it maybe to any windows or opt for a lower decibel rating (eg. 37db which is comparable to a whisper).

Smart Tip!

Have solar? For electric resistive or electric heat pump heaters, use a timer or WIFI/wired control to time your water heating to coincide when solar production is at its highest (in the middle of the day) to maximise energy savings.

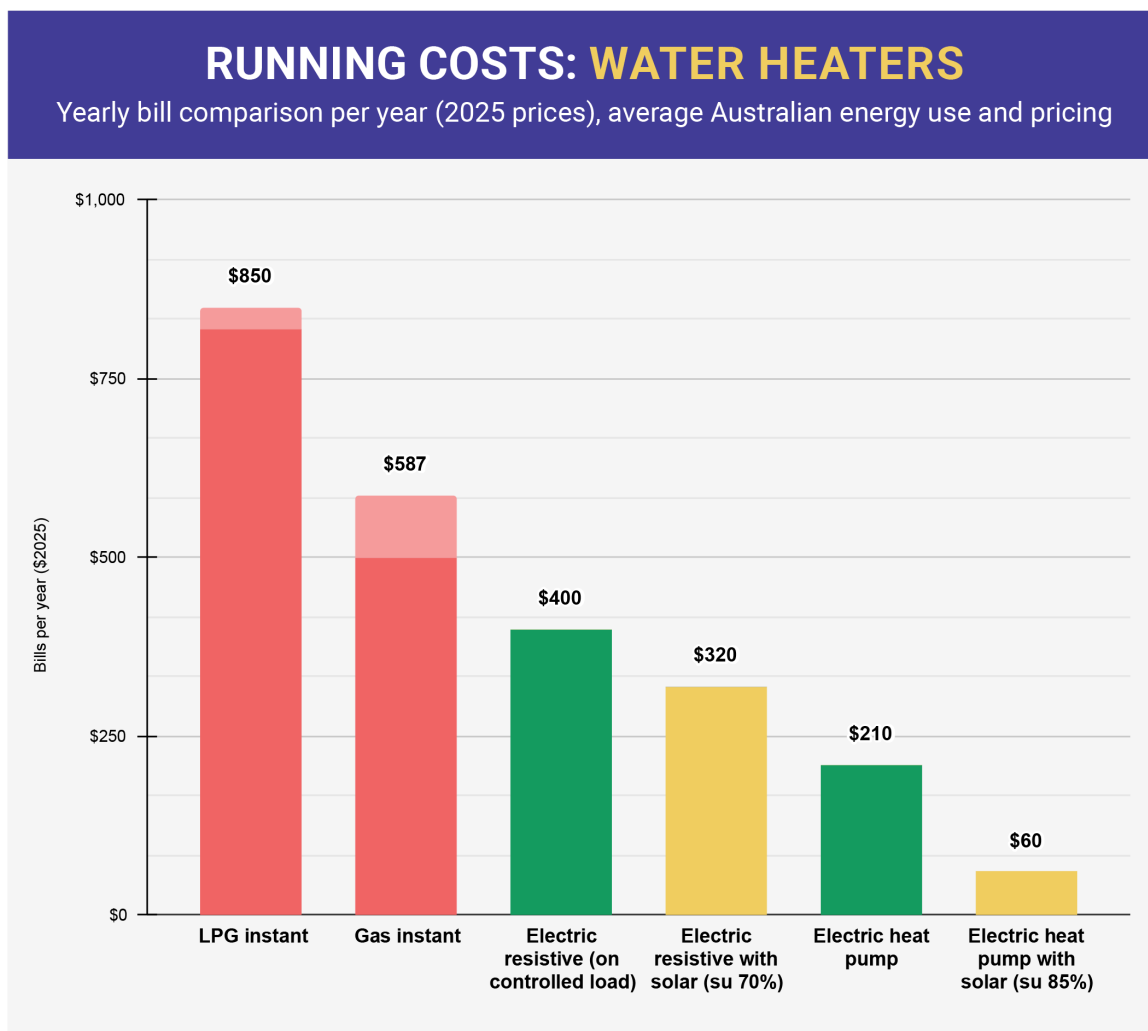
FAQ

How do I get the most out of my heat pump? Install a timer or wifi control that enables you to time when you heat your water. If you have solar panels, the best time to heat your water is during the day when solar production in the grid is at its peak and when the heat pump works most efficiently.

Do heat pumps work in cold climates? Yes! While heat pumps work more efficiently in warmer climates, they do still work effectively in cold climates even when it is snowing outside!

I've got an electric resistance, should I make the switch to a heat pump? If you are able to power your electric resistance water heater from a large solar array during the day, it may make economic sense for you to keep your electric resistance heater. Your electric resistance heater will still use 3 to 4 times more energy than a heat pump (which is why we recommend heat pumps). However, if your budget is restricted (as the up front cost of a heat pump is more expensive) it may be worth adding a timer to your heater and drawing on solar.

What about renters? Organisations like Rewiring Australia are demanding policy changes that ensure renters have the right to efficient electric appliances. Some states, like Victoria, have started to introduce these standards or offer incentives for landlords to make the upgrades. If you're not in one of those areas, write to your State MP and demand the same.



Sources: Rewiring Australia analysis. Residential Baseline Study 2021, heat pump COP 3.48, resistance tank 0.94, gas/LPG instant 0.80, gas/LPG tank 0.70. Electricity \$0.32/kWh, gas \$0.15/kWh, LPG \$0.29/kWh, Wood \$0.13/kWh. Solar \$814/kW financed at 5.5% over 30 years with replacement inverter. "su" is solar utilisation percentage.

About Rewiring Australia

Rewiring Australia is a non-profit, independent, non-partisan organisation dedicated to representing the people, households and communities in the energy system.

rewiringaustralia.org.au



Melville City Climate Action Network Inc.

is a grass-roots, non-profit, non-partisan, community organisation promoting actions to achieve reductions in greenhouse gas emissions.

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