Rewiring Australia

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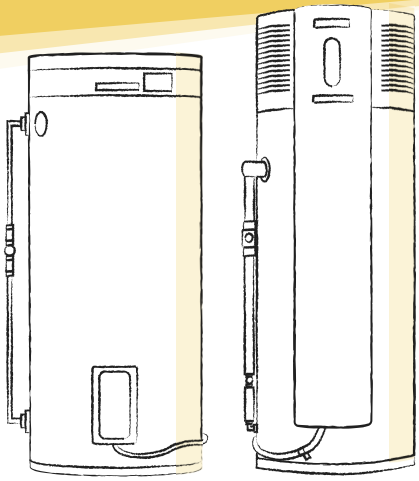


FACT SHEET

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)*	$6,000 over 15 years ($350/year in 2024)
Potential bill savings (without solar)*	$2,900 over 15 years ($180/year in 2024)
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. 2024 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.

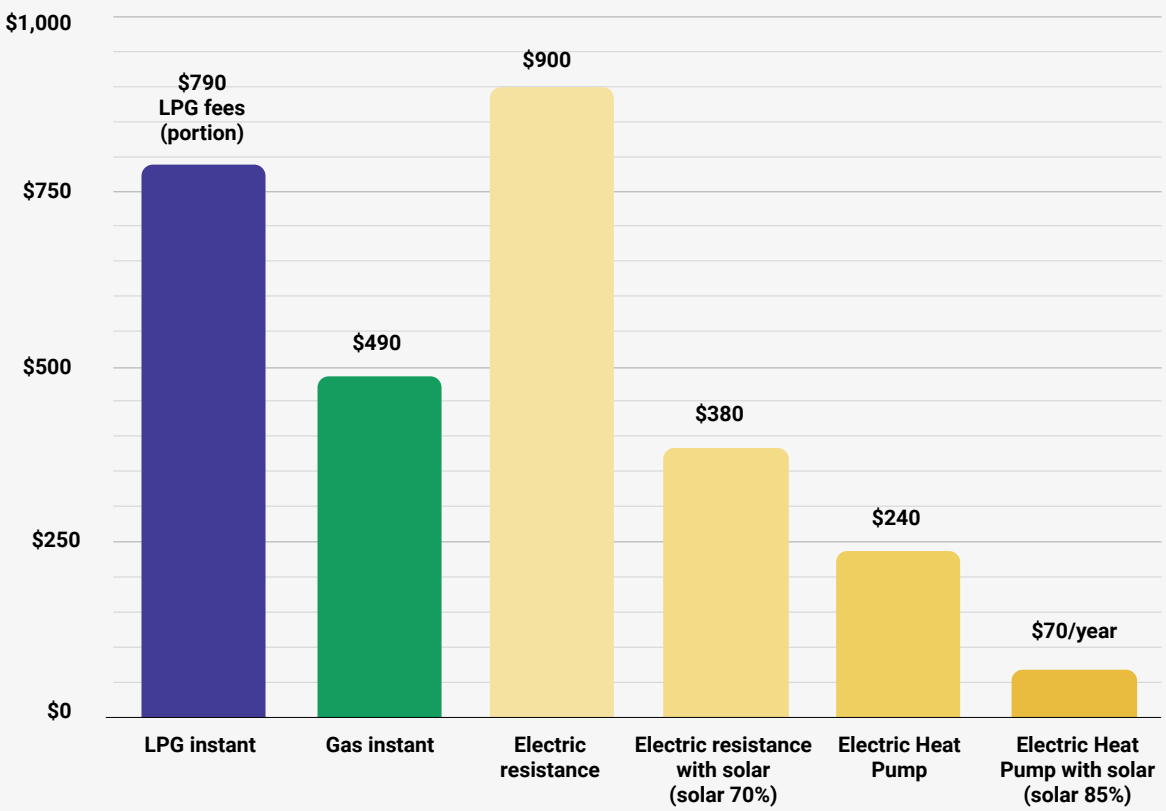
Why choose electric heat pumps?

- **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

RUNNING COSTS: WATER HEATERS

Yearly bill comparison per year (2024 prices), average Australian energy use and pricing



Sources: Rewiring Australia analysis. Residential Baseline Study 2021, heat pump COP 3.6, resistance tank 0.9, gas/LPG instant 0.95, gas/LPG tank 0.86. Electricity $0.33kWh, gas $0.14/kWh, LPG $0.29/kWh, wood $0.13/kWh. Solar $855/kW financed at 5.5% over 30 years with replacement inverter.

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 and R-744 refrigerants are good choices for the environment, R-744 is ok, 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. 36db).

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.

Getting It Installed

1

Plan early.

Don't wait until your hot water heater dies. If it's near its end of life (8-10 years) start researching your heat pump hot water heater replacement now.

2

Research.

a. Check what rebates you may be entitled to in your state

b. Contact local installers (plumbers) to see if they install heat pumps (not all do - yet)

c. Consider the different heat pump models and what will work best for your home

d. Check your home's electrical needs. Hot water systems need their own circuit breaker. If you are currently on gas you may need a wiring upgrade. You can contact a local plumber or electrician.

3

Get quotes.

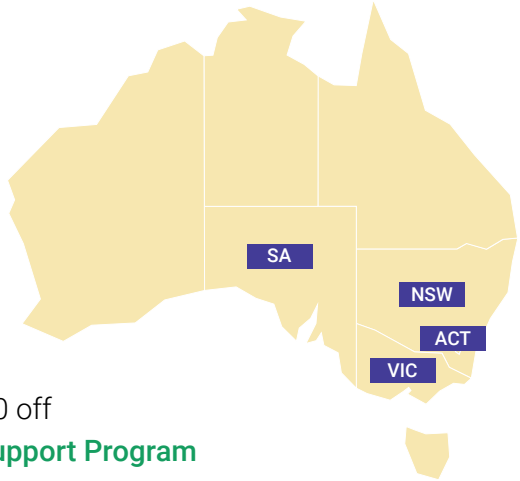
When it's time to replace your water heater, get quotes from a licensed plumber. Check they are eligible for any rebates you may want to claim and are able to installed your preferred model.

4

Install.

Lock in your preferred installer. Some plumbers may subcontract to an electrician. Others will be licensed to complete this work themselves.

Government Assistance



Federal Small-scale Technology Certificates (STCs) can be generated for heat pumps and solar hot water (most installers can claim STCs on your behalf) to reduce the cost of a system. You will receive more STCs for a more efficient hot water system.

ACT Energy-efficient electric water heater upgrade offers $500 off the purchase price and $250 credit. The **Home Energy Support Program** provides up to $5,000 in rebates for concession card holders for energy-efficient products, including hot water heat pumps, and the **Sustainable House Scheme** provides no-interest loans.

NSW The **Energy Savings Scheme** offers a rebate to upgrade your gas or electric resistive water heater (only via a licensed installers). Up to 100% of the new system may be covered, with a minimum payment of $33.

SA **Retailer Energy Productivity Scheme** offers a scheme that provides incentives based on the type of upgrade you choose.

VIC **Household Energy Upgrades scheme** offers a rebate of up to $1,000 via Solar Victoria for households earning under $210,000 a year and the Victorian Energy Upgrades program offers further discounts for heat pumps.

Rebates current as of September 2024. Check **energy.gov.au** for latest updates.

Renters

Renters make up one third of Australian households, and often miss out on reaping the full benefits of electric efficient homes. Rewiring Australia, and other organisations, are advocating for better renters rights to rectify this, such as minimum rental standards and mandatory energy disclosure. Whether you're a renter or not, write to your MP and demand the same.

In the meantime, renters could present the rebate information to their landlord asking for a hot water system upgrade. For instance, in NSW you can get $2,500 - 3,000 worth of government rebates. In Victoria, **Solar Homes Program** provides Victorian households with up to $1,000 to assist with the purchase of an eligible heat pump or solar hot water system. Using a timer to heat the water, including on electric resistive heaters, is an easy way for renters to set the water heating to coincide with cheapest tariffs.

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. The better quality heat pumps work very efficiently in both cold and warm climates and even when it is snowing outside! Our advice is to not go with one of the cheaper versions.

How long does a heat pump last?

About 10 - 12 years

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 solar-thermal hot water heaters?

Not to be confused with solar PV panels, which generate electricity, for a long time solar thermal hot water systems were considered the cheapest form of solar hot water heating in Australia. However, the hugely reduced cost of solar PV means this is no longer the case and the solar thermal system is generally less efficient and takes up crucial space on your roof that could be used for PV panels.

What finance options are available?

Besides government rebates, there are private finance options available that may help you afford the up front cost. Please note we do not endorse any of these options, and suggest you always consult a financial advisor. Here are some current options available:

- **No Interest Loan Scheme**, a federal government program administered by Good Shepherd for low income households
- Green loan finance offers from lenders such as **Brighte**, **Plenti**, **CommBank**, **Bank Australia**.

Useful Resources

→ **Rewiring Australia**
For leading data, research and advocacy on electrification
rewiringaustralia.org

→ **Getting Off Gas Toolkit**
Practical advice from Renew
gettingoffgastoolkit.com

→ **My Efficient Electric Home Facebook Group**
A great place to ask questions or research how others have gone about their journey
facebook.com/groups/MyEfficientElectricHome

→ **Switched On**
A podcast and website that focuses on household electrification
switchedon.reneweconomy.com.au

→ **Your Home**
The federal government's advice on energy appliances
yourhome.gov.au/energy

Rewiring Australia

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

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