

WATER HEATING

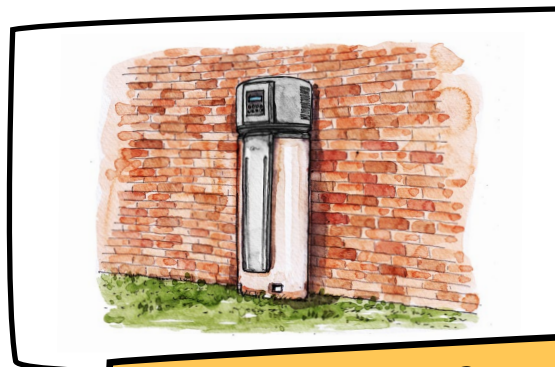
FACT SHEET

Rewiring Aotearoa



INTRODUCTION

Water heating makes up around 30% of an average home's energy load, coming in just behind space heating (if you don't include vehicles). This makes 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 use the energy to heat water and time it for when it's cheapest. If you have solar panels and an electric water system, you can effectively heat your water at very low cost with very low emissions. Hard to argue with that!



**RECOMMENDED:
HOT WATER HEAT PUMP**

BREAKDOWN

Average upfront cost	\$4,000 - \$10,000	installed
Average annual costs (with solar)	\$67	savings of \$450 per year compared to gas, or \$650 per year compared to LPG
Average annual costs (without solar)	\$183	vs \$529 for gas and \$709 for LPG
Emissions Saved	High	Around 7,000 kg of emissions saved over 15 years compared to gas or LPG
Lifetime	10 - 12 years	
Savings over 15 years	\$4,000	cheaper than gas
	\$7,000	cheaper than LPG
Rebates available	No	Hot water heat pumps are eligible for some low-interest green loans
Difficulty of installation	Medium	
Electrical upgrade required	Maybe	
Installers Required	Yes	Plumber (and maybe an electrician)

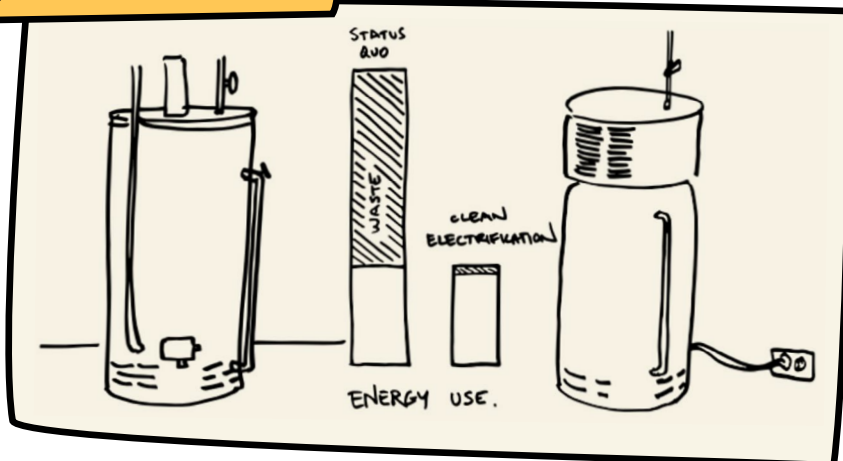


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[REWIRING.NZ/CALCULATOR](https://rewiring.nz/calculator)**



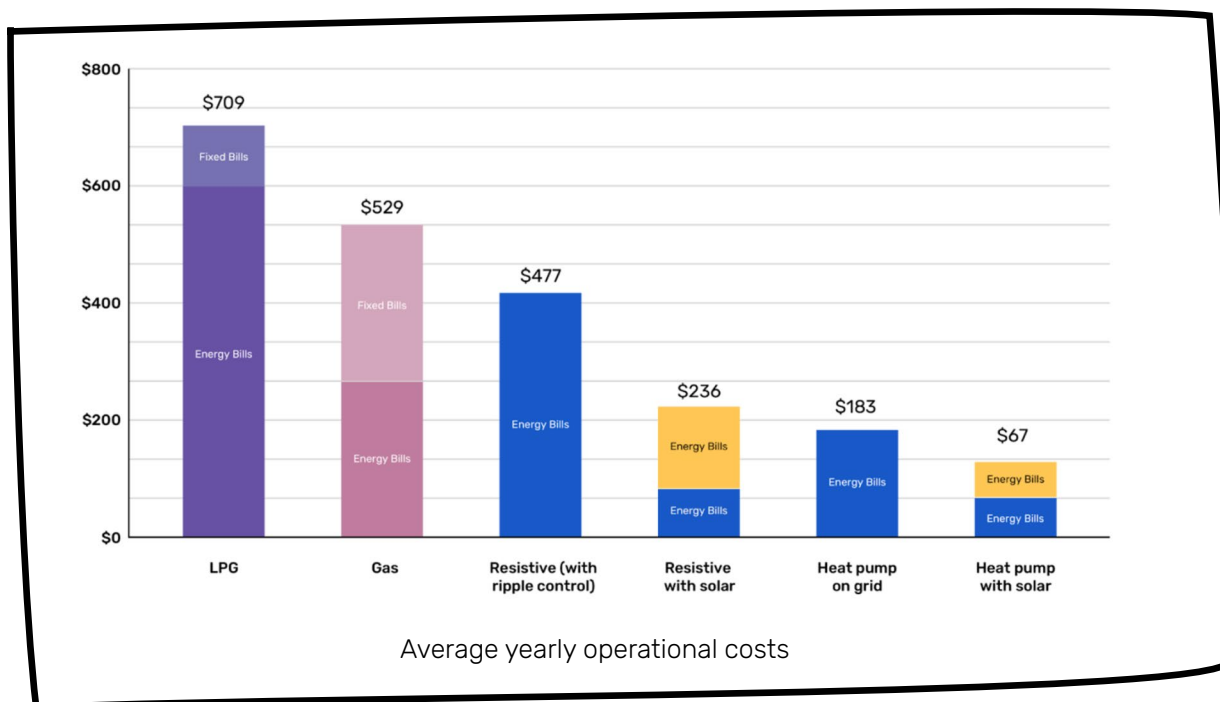
ELECTRIC HOT WATER HEAT PUMPS

Heat pumps use a technology that transfers heat from the surrounding air to heat the water, making it incredibly efficient. Many New Zealand homes have a gas or electric resistance system. However, it is the electric heat pump that will bring the most energy bill savings. While heat pumps are more expensive to buy, they are incredibly cheap to run, resulting in major savings over the long term.



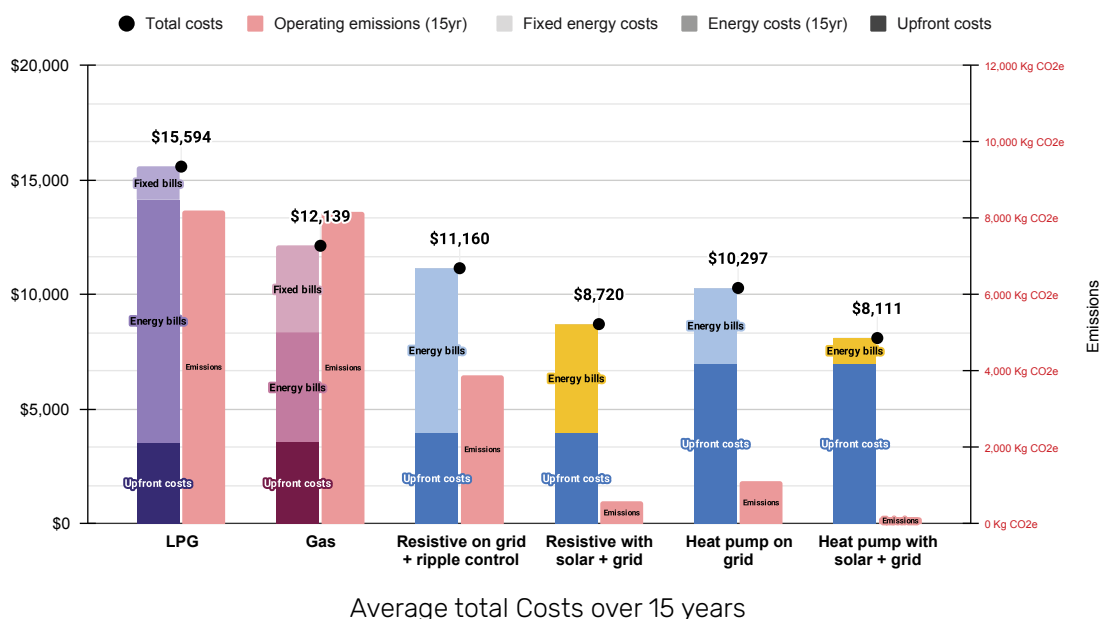
WHY CHOOSE ELECTRIC HEAT PUMPS?

- **They use less energy:** Heat pumps are really efficient and typically use 65 -75% less energy compared to electric resistance heaters or gas hot water heating.
- **They're cheaper to run:** Due to their efficiency, heat pumps are by far the cheapest hot water system, and they're even cheaper with solar.
- **They're better for our climate:** Gas hot water systems use a polluting fuel source to heat water and therefore have the highest carbon impact, while electric resistance systems take more energy to heat water.
- **They require less maintenance:** Generally, hot water heat pumps require less maintenance than other systems, with a professional maintenance checks only required every 3-4 years.
- **They're flexible:** With a range of features, such as wi-fi 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.



Water heating comparison in New Zealand homes. Costs & emissions.

Sources: Rewiring Aotearoa Analysis. Residential Baseline Study 2021. MBIE Energy Prices 2023. ConsumerNZ. Energy.Gov efficiency factors. EECA heat pump COP.



WHAT TO CONSIDER

You'll need to 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 that 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 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 may be to any windows or opt for a lower decibel rating (eg. 36db).



GETTING IT INSTALLED

STEP 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.

STEP 3

Quotes

When it's time to replace your water heater, get quotes from a licensed plumber. Check they are able to install your preferred model.

STEP 2

Research

Check if your bank covers hot water heat pumps as part of their green loan.

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

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

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.

STEP 4

Install

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

FAQ

How do I get the most out of my heat pump?

Install a timer or wi-fi 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 resistive water heater. Should I make the switch to a heat pump?

If you are able to power your electric resistive water heater from a large solar array during the day, it may make economic sense for you to keep it. It will still use 3 to 4 times more energy than a heat pump (which is why we recommend heat pumps) but if your budget is restricted (as the upfront cost of a heat pump is more expensive) it may be worth adding a timer to your heater and drawing on solar. Over 15 years, electric resistive with solar and the grid is around the same cost as a hot water heat pump including the upfront costs.

What finance options are available?

There are many private finance options available that may help you afford the upfront cost. Many of them require you to have a home loan with that institution but some offer low-interest loans for more sustainable products like hot water heat pumps.

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