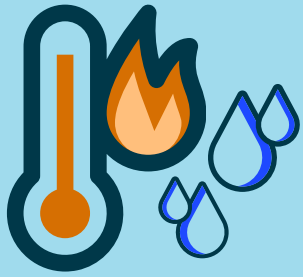
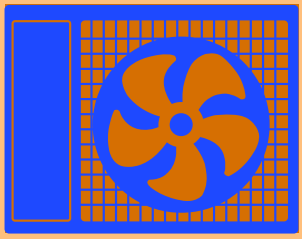
Jewish Climate Network

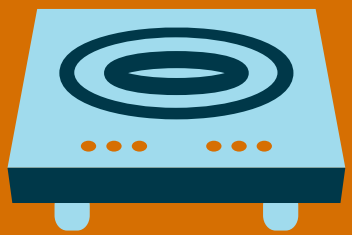
Home Resource



Learning, choosing & purchasing an efficient electric hot water system or electric stove can be overwhelming.



We have compiled a list of resources below to get you started.



If you're more interested in electrifying your cooktop, head to page 7.

Why is electrifying your water system impactful?

Approximately half of Australian homes heat their water using gas hot water systems. Gas systems are the largest source of emissions (up to 25%) from an average Australian home.

When you switch the system to electric-powered, and power that system with renewable electricity (via solar panels or a renewable electricity retailer), these emissions are eliminated.

What are efficient electric hot water systems?

All electric hot water systems use electricity to heat water, as opposed to gas systems that burn methane or LPG gas to heat water via a flame. Gas systems are often marketed as *continuous flow* or *instantaneous* hot water systems.

Modern electric hot water systems – namely hot water heat pumps and solar hot water – are highly efficient and therefore much cheaper to run.

These differ from old-model electric systems that heat water like a giant urn, and are expensive to run.

Hot Water Heat Pumps

The best tech on the market.

Hot water heat pumps (HWHP) are highly efficient and **use 60-75% less energy than old-model electric hot water systems.**

Heat pumps extract heat directly from the air outside and concentrate it to heat up your water, **using the same technology as modern reverse-cycle air conditioners.**

Amazingly, even if the air outside is below freezing, heat pumps can still extract this tiny bit of heat remaining in the air and use it to heat up water to a sizzling 60°C.

The hot water is stored in a tank that can range from 160 L to 400 L depending on household size. When paired with rooftop solar panels, heat pumps are virtually free to run - heating water during the day when the sun shines and storing that heat for use during the evening and early morning.

Heat pumps range in price from $2000 to $6000, depending on their efficiency, warranty and size.

As a general principle, confirm with your installer that the model has at least 3 years warranty on the compressor.

Rebate

Victorians are eligible for a $1000 rebate on HWHPs which is simple to apply for. Check your eligibility here - your installer will likely apply this rebate at point of sale.

A further rebate for those replacing a gas system will be made available later in 2023 under the Victorian Energy Upgrades program.

Keep track of this update and ensure to use an approved supplier by using this list.

NSW residents can also receive a rebate through an approved supplier.

Solar Hot Water

For sunnier places.

Solar hot water systems are a great option for those living in sunnier areas like Perth or Sydney.

These consist of solar collectors mounted on the roof, heating the water as it is pumped through small tubes exposed to sunlight. The heated water is stored in a horizontal, roof-mounted tank with a 160 to 370 L capacity so that hot water can be used at night or in the morning.

While these systems are more expensive to install, their running costs are very low.

In areas with less winter sunshine such as in Melbourne, solar hot water units may require a booster using gas or mains electricity. As such, hot water heat pump systems may be better for Victorians.

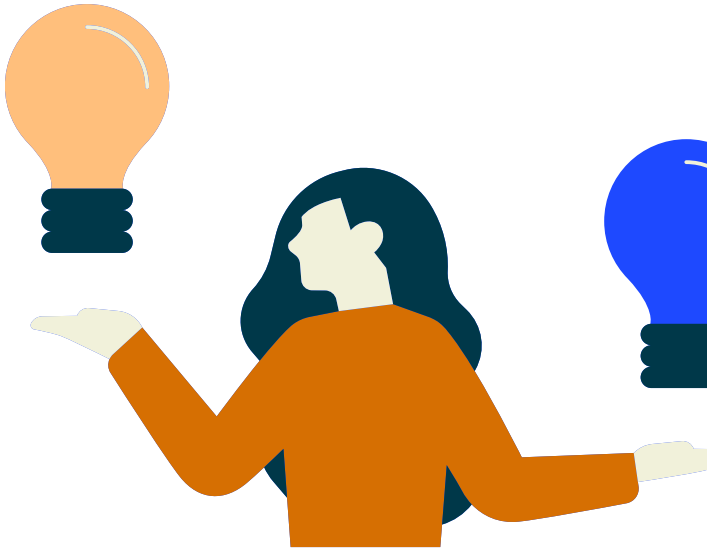
Breaking it down

System	Hot Water Heat Pump	Solar Hot Water	Gas	Old-model electric
Running costs	$	$	$$	$$$
Climate friendly	Yes	Yes	No	Somewhat
Installation costs	$$	$$$	$	$

More info

More detailed information on hot water systems can be found at Sustainability Victoria or the Department of Energy's hot water guides.

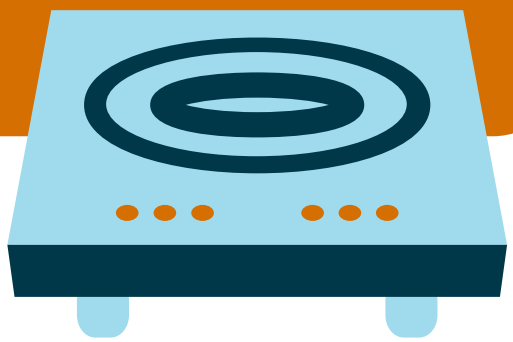
These provide a breakdown on **different types of systems, trusted suppliers and resources on where to get rebates and assistance.**



Buying guide

Have a look at this buying guide from Choice. It provides you with a more **comprehensive comparison** between systems including **performance, value and ease of use.**

Thinking about electrifying your cooktop?



Why is this action impactful?

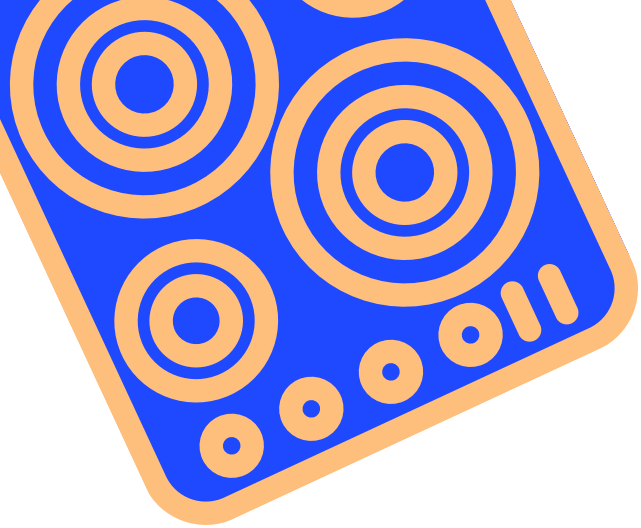
Using an electric cooktop avoids the greenhouse gas emissions that are emitted into your house from traditional gas cooktops.

Electrified cooktops are generally twice as efficient as gas cooktops, equating to cost savings, emissions reductions and energy savings. When powered by solar or green electricity, electrified cooktops are entirely emissions-free.

Gas cooktops are a leading source of indoor nitrogen dioxide and nitric oxide pollutants (NOx) which have been linked to increasing children's risk of asthma by nearly one-third (the equivalent risk of living in a home with second-hand cigarette smoke), and contribute to pulmonary disease in adults.

Gas cooktops also produce significantly harmful pollutants, including:

- Carbon monoxide
- Formaldehyde
- Carcinogenic benzene (impacting respiratory health and contributing to air pollution.)



What are electric cooktops?

There are three types of electric cooktops available to the Australian consumer. We recommend induction cooktops.

Induction cooktop

These are highly efficient systems that use electromagnetic fields to heat up your cookware directly.

- Induction stoves can cook any type of food and provide more consistent cooking as the electromagnetic projection evenly penetrates the entire surface of your pan, with no warmer or cooler spots, so there's no need to shift the pan's position while you cook.

- Induction is great for foods that require high heat, such as wok stir fries or boiling large pots of water. Yet they are as controllable as gas and even more responsive, with heat adjusted instantaneously at the touch of a button.

- Inductions stoves utilise around 90% of the consumed electricity, compared to just 40% in gas cooktops.

- Induction stoves are very safe, especially for children, as they do not generate any heat on the surface - they are cool to the touch.

- Induction cooktops are made from smooth glass and some models can be installed directly into a cooking bench, making them unobtrusive, easy to clean and with a modern aesthetic.

- Induction cooktops can include tech features for an efficient, safe and modern cooking experience. These include auto switch-off, auto simmer, pan detection, digital temperature monitors, timers, and overflow protections.

Limitations:

- **Only cookware that is magnetic will work** with an induction stove - if a fridge magnet sticks to your pot/pan they can be used.
- More powerful models require a **licensed electrician to install.**

Electric cooktop.

These are the traditional electric cooktops of the past, and use exposed, heated elements to heat cookware.

Such cooktops are often less expensive than induction cooktops, but they can take longer to heat up, are less responsive to temperature changes, and are less energy-efficient.

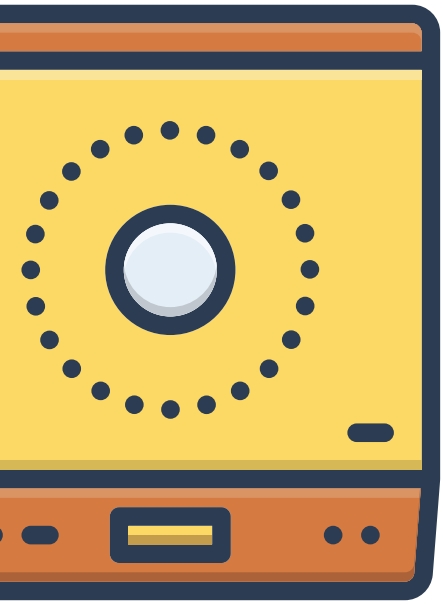
They also retain heat after the burner is turned off, as with gas burners, which can be a safety concern.

Ceramic cooktop.

These operate the same way as an electric cooktop and have the same pros and cons. However the heating elements are hidden beneath a smooth ceramic glass surface to heat cookware and therefore have a more modern aesthetic.

Visualise your cooktop!

See what induction cooktops look like, how they function, why they are safer and easier to clean:



'The truth about induction cooking'

"If induction cooking were easier to explain, we'd already be using it three times a day. It's just got a name problem."

'A beginner's guide to induction cooking'

"If you'd prefer to learn from someone else's mistakes rather than your own, here are a few tips for getting the most use out of an induction cooktop."

Induction buying guide

This article from Choice is a comprehensive explainer on features, sizes and installation requirements of induction cooktops in Australia.

More induction!

Watch a TikTok celebrity chef rave about induction:
https://www.youtube.com/watch?v=ooNzRrHA9VY&t=1s

In addition to various government grants and rebates outlined in the resources, if you're interested in further financial support, check your eligibility for a Jewish Care Empower Interest-Free Loan: www.jewishcare.org.au/page/services/financial-services/empower-interest-free-loans