

1 Lower costs with a heat pump hot water system (HWS)

Most standalone dwellings, duplexes and townhouses in strata which have their existing hot water system outside the perimeter of their dwelling may be able to lower their hot water costs with a heat pump. High-efficiency heat pumps can do the same job with hot water heating costs as little as **\$109/year per dwelling for a couple**. The saving by moving to a heat pump hot water system can be approximately **\$426 per dwelling per year**. The payback period of a heat pump system is between 3-5 years while the lifespan of this system can be up to 15 years.

2 A heat pump system is more environmentally friendly

Heat pumps have reduced life-cycle greenhouse gas emissions (GHG) compared to gas or electric resistive HWS when all things are taken into account.

3 The heat pump system is more efficient than a conventional hot water system

All HWS can be compared by considering the efficiency measured by the Coefficient of performance – COP.

Typically, the higher the COP the better the efficiency. Typical COP's are:

- Gas boilers - COP of approximately 0.75
- Resistance electric HWS – COP of 1.0
- Heat pumps – COP from 3 to 5 (Note: the COP is slightly lower in winter and slightly higher during summer)

4 Two types of heat pump hot water systems

Heat pump systems are configured in one of two ways:

- Integrated (Evaporator and fan mounted on top of the water tank)
- Split (Evaporator & fan separated from water tank)

The integrated heat pump system has greater weight and needs a larger space for installation than a traditional gas hot water plant. The location for the heat pump needs to have sufficient ventilation so that the heat pump can suck in warm air and doesn't end up sucking in the cold air which it emits.

The split heat pump system provides more options for installing a heat pump next to a strata building, as the evaporator and fan (which looks like an air conditioner) can be mounted on an outside wall of the apartment building or in a courtyard and the hot water storage tanks can be installed in an enclosed room.

5 Heat pump system manufacturers

There are over 20 different heat pump system brands available in the market. Read the Australian Energy Foundation (AEF) [Heat Pump Hot Water Guide](#) to get recommendations on the best heat pumps to install for your dwelling.

Note: Many plumbers are not aware of the benefits and reliability of modern heat pumps and would rather sell a gas HWS due to familiarity. Also, plumbers typically won't care how much gas costs residents, after installation. Check online for quality reviews of systems and plumbers.



What is a heat pump and are they common?

"Every fridge and freezer on the planet has a heat pump inside it. There are billions of them. A heat pump moves heat from a cool or cold place, and moves and concentrates it where you want it - either for home heating with a reverse cycle air conditioner on heating mode, in your fridge where it dissipates the heat outside the fridge, or in your hot water system tank."

Further information can be found on the Facebook group "My Efficient Electric Home" by clicking [here](#)

<https://www.facebook.com/groups/996387660405677/search?q=heat%20pump%20hot%20water%20systems>

6 Government rebate

The installer usually applies the rebate to make things easier. The rebate should be itemised on their invoice.

Visit the federal government website to see which brands are eligible [here](#):

<https://www.rec-registry.gov.au/rec-registry/app/calculators/swh-stc-calculator>

7 Long warranty period of heat pump systems

Warranties vary by manufacturer. Read the conditions carefully, especially those concerning labour. Some warranties require professional installation, regular servicing, and adequate water quality. Generally, the warranty period of a split heat pump system is 5 years for the evaporator/fan and up to 10 years for the water storage tank.

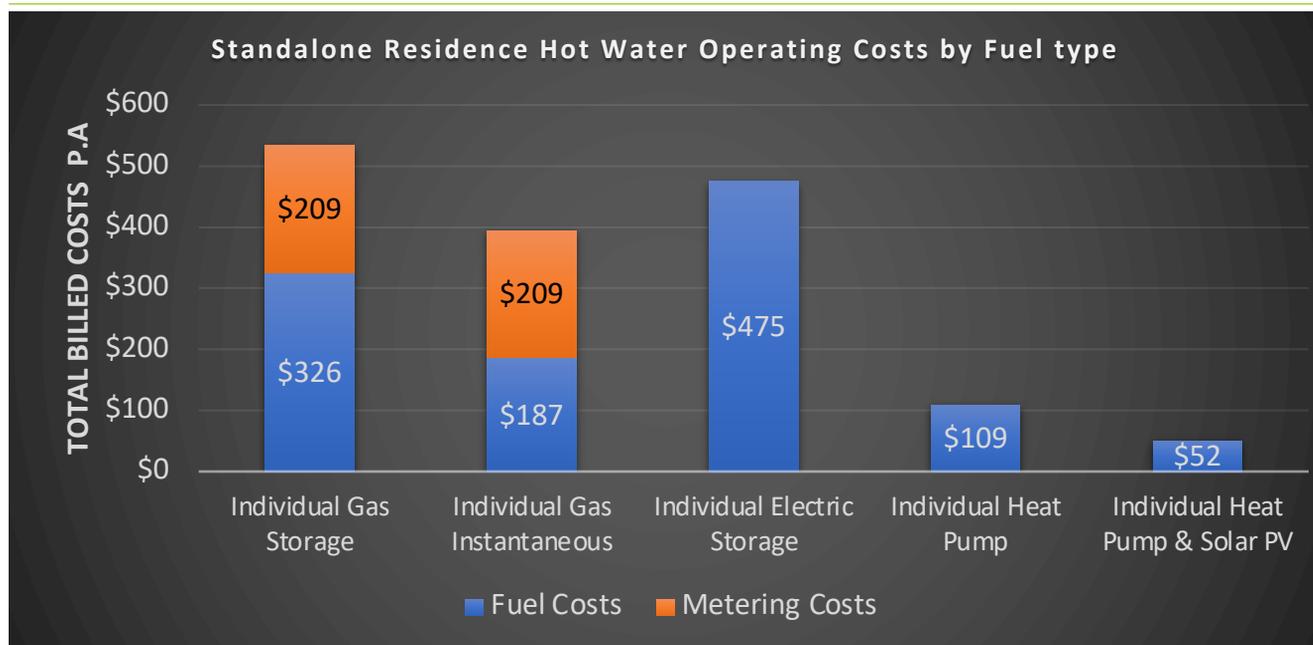
8 Noise level of a heat pump system

In general, the noise level of a heat pump system is between 25dB (noise level inside a library) to 50 dB (quiet suburban traffic). Like the outdoor unit of an air conditioner, heat pumps do make some noise. Modern heat pumps are usually quiet enough to fade into the background of a quiet suburb.

Make sure you always check the decibel level of a particular model before purchase - to ensure a quiet heat pump.



9 How do heat pumps compare with other methods of heating water for standalone residences on cost?



10 Looking after your heat pump

Heat pumps are low maintenance. The main task is to clean the dust and cobwebs off the fan coil unit. The other task is to release the Pressure Release Valve (PRV) on an annual basis, which is easily done by any homeowner.

11 Heat pumps use renewables in their own right

Heat pumps use the ambient air temperature (or in some unique situations temperature in the ground or in a water reservoir) to transfer this heat into a domestic hot water system or a pool. The ambient air temperature is a renewable source of energy in its own right.

Heat pumps for hot water differ from solar thermal hot water panels which have been installed on many Australian rooftops since the 1950's and physically pipe water through the roof panels to heat the water.

Heat pumps use a small amount of electricity, usually during two cycles of about 4.5 to 6 hours each day, depending on whether it is summer or winter.

12 Heating your pool with an electric heat pump

Heat pumps are also the most efficient way to heat the water in your pool or spa. A separate heat pump system is required for a pool/spa heat pump from the heat pump for your domestic hot water system. While many pools already have solar thermal heating on the roof to heat the pool, the best way to optimize heating of your pool is to decommission this solar thermal pool heating system and move to a heat pump. A heat pump for a 4m x 8m pool might cost between \$4,000 and \$6,000. Freeing up the roof space which was previously used for solar thermal pool heating can make it available for the installation of solar photovoltaic panels. Generating local electricity can reduce pool heating costs to effectively \$0 p.a. for 12 months of heating.

13 Adding solar photovoltaic to your heat pump

Over 21% of freestanding homes in Australia have installed solar photovoltaic panels to generate electricity. There are now more than 2 million rooftop solar systems in Australia.

If you decommission a gas hot water system and install a heat pump, you will increase your electricity consumption. The installation of solar photovoltaic panels with a heat pump is a great combination of systems which can actually give you access to the cheapest hot water available in Australia.

A high quality heat pump will have a control system which will let you set one of its two daily heating cycles to coincide with the sunny part of the day, when a solar system is generating the maximum amount of free energy.

If you already have an existing solar photovoltaic system, you may want to increase the size of it after installing a heat pump.

14 Heat pumps are resilient

People are often unaware that even if they have a gas storage hot water service, this hot water service may use electricity to fire the gas boiler.

During a power outage, a heat pump will actually provide hot water for a longer time to a building than a gas hot water service, as heat pumps typically have more hot water capacity and store more hot water in reserve. This extra storage of hot water can be thought of as a type of battery.

For further information visit North Sydney's Futureproofing Apartments [website](https://www.northsydney.nsw.gov.au/Environment_Waste/Get_Involved/Futureproofing_Apartments):
https://www.northsydney.nsw.gov.au/Environment_Waste/Get_Involved/Futureproofing_Apartments