Rewiring Australia

Healesville CoRE
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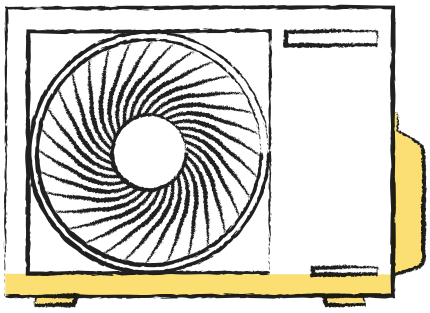


FACT SHEET

Space Heating

Snapshot

Emissions Saved	High
Lifetime	15 - 20 years
Average upfront cost (before rebates)	$3,000 - $10,000 installed for average sized home
Potential bill savings (with solar)*	$10,250 over 15 years ($570/year in 2024)
Potential bill savings (without solar)*	$8,300 over 15 years ($470/year in 2024)
Rebates available	Yes (NSW, ACT, VIC, SA)
Difficulty of installation	Moderate
Electrical upgrade required	No (generally)
Installers	Licensed air conditioner installer

Assumptions: Average space heating energy use from the Residential Baseline Study 2021, adjusted to performance of different 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 heater 80%, COP for heat pump 400% average.

Introduction

Space heating and cooling is one of the largest energy uses in the average Australian household, accounting for 37% of a home's energy use (excluding vehicles). This varies based on climate, with colder states like Tasmania and Victoria spending an even greater share of their energy bills on heating their homes. Space cooling in Australia typically requires significantly less energy than space heating, meaning warmer states spend less on heating and cooling. The good news is, the same efficient appliance can be used to both heat and cool your home. Alongside water heaters, space heaters are generally the biggest users of gas in a home, making it a key household appliance to electrify for health, cost and emissions savings.

Space Heating

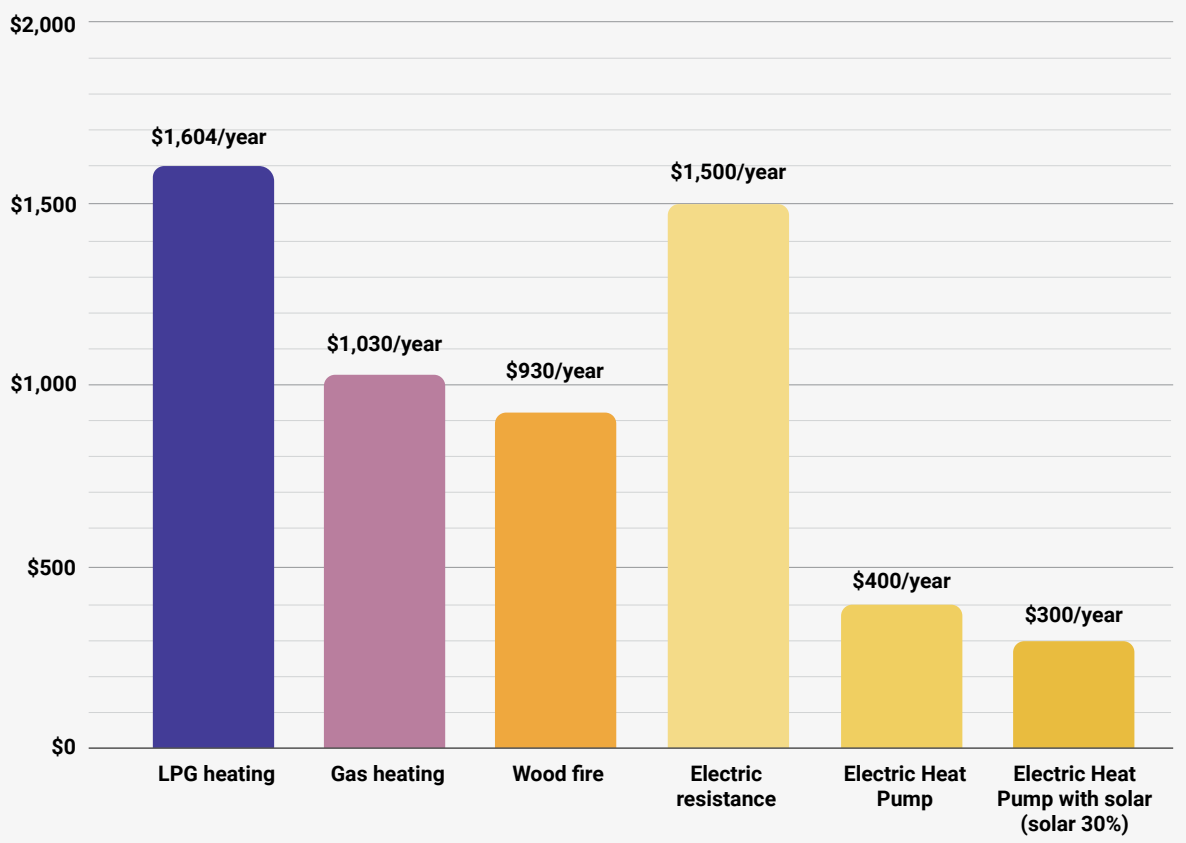
While air conditioners are a common appliance to cool homes, they are underutilised in the heating department and this is where the main benefits are. Space heaters vary greatly in size, fuel source and technology but in general the most efficient way to heat your home is with a reverse-cycle air conditioner, these are also known as split system' or heat pumps and use the same type of technology as electric water heat pumps.

Why choose a reverse cycle air conditioner (heat pump)?

- **They use less energy** - Heat pumps are 3 to 4 times more efficient than gas heaters, and 2 to 3 times more efficient than standard electric resistance heaters, such as oil-column heaters/fan heaters/radiant-electric panel heaters.
- **They're cheaper to run** - Switching from inefficient heating systems that run on gas, oil, or traditional electric resistance can save households around $1,000 per year. If timed with rooftop solar production (for instance pre-heating a home during the day), running costs can be as low as $140 a year.
- **They're healthier in your home** - As highlighted by many leading health organisations, gas heaters and stoves emit noxious gases such as carbon monoxide, nitrogen dioxide and formaldehyde, impacting the health of residents. These gasses are especially harmful if the heater is unflued.
- **They're better for our climate** - A heat pump can reduce your heating-related fossil fuel use by 40% or more.
- **They're flexible** - Most models include timers so you can time when it's in use, for instance, running your heat pump when your solar is generating energy.
- **Can be used for heating and cooling**

RUNNING COSTS: SPACE HEATERS

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



Sources: Rewiring Australia analysis. Residential Baseline Study 2021, heat pump COP 4.0, resistance tank 1.0, gas/LPG 0.8, wood fire 0.65. 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

Reverse cycle air conditioners are either ductless split systems or ducted systems.

Split System Heat Pump (ductless)

These are a lower cost yet still very efficient option. The term ‘split’ means the two coils are split, with one indoors and the other outdoors. They are connected together by a refrigerant line that passes through the wall. The outdoor unit is about the size of a suitcase. You might have multiple units in different rooms to create zones with multiple individual outdoor units. These systems are mounted on indoor walls.

If you want multiple indoor units but only one outdoor unit, the multi-head systems fits this bill. However they are less efficient than split systems and the outdoor unit is larger.

Ducted Central Heat Pump

This is a system that uses ducts (generally in the ceiling) to distribute cooled or warmed air. The system has both an inside and outside unit. If your home already has existing ducts (perhaps for outdoor central air conditioning or central ducted gas heating), be sure to check with an installer to see whether these ducts are suitable for a heat pump. Ducted central heat pumps are more expensive and less efficient to run than split systems.

Getting It Installed

Research. 1

Familiarise yourself with the range of options available and identify the key areas in your home that should be targeted for heating.

Seal leaks. 2

It’s a good idea to also identify and seal up gaps where air leaks and look at other simple draught proofing measures.

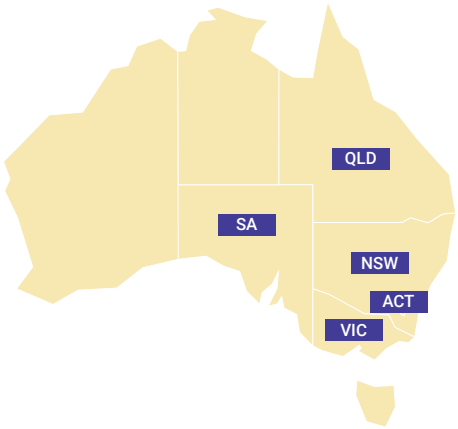
Quotes. 3

Receive quotes from licensed air conditioning installers to correctly size air conditioners for your home and needs.

Install & Maintain. 4

After installation make sure you clean the filter once a year. This is essential as blocked filters can reduce the efficiency and operability of your system.

Government Assistance



National Under the federal government's Household Energy Upgrades Fund you may be eligible to apply for a loan with discountedfinance to afford the installation of appliances.

ACT The **Home Energy Support Program** provides up to $5,000 in rebates for concession card holders for energy-efficient products, including reverse cycle air conditioners and **Sustainable House Scheme** provides no-interest loans.

NSW **Energy Savings Scheme** and **Peak Demand Reduction Scheme** offers rebates (varied) for eligible households.

QLD Some incentives are available for South East and regional QLD for installing efficient, controllable air conditioners.

SA The **Retailer Energy Productivity Scheme (REPS)** offers incentives for for installing efficient air conditioners, focusing on low income homes.

VIC **Energy Upgrades for households** offers rebates up to $2,800 to replace inefficient heaters with reverse cycle air conditioners.

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

Renters

Renters make up a third of Australian households, and are left behind 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 efficiency 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 choose to purchase a window unit or portable reverse cycle air conditioner themselves or present information to their landlord to make the case for a reverse cycle air conditioner such as government rebates available, the requirement that gas equipment needs to be professionally monitored every two years (depending on state) and the health impacts of gas appliances. To minimise heating and cooling costs, renters could seal up leaks, purchase temporary window glazing, install external shading such as plants, shade cloths or blinds and close curtains and doors.

Space Cooling

On average, space cooling technology in Australia requires significantly less energy than space heating. Using shading, plants, blinds and other passive ways to cool a home are incredibly important, but with temperatures set to rise, many of us will need air conditioners and that's ok. Our current methods of space cooling are relatively efficient and are already nearly all electric. For these reasons we can leave them as they are in an electrified world, as long as we generate that electricity with renewables, and our air-cons will still get the cost benefits from cheaper solar electricity available in an electrified home. If you have solar but not a battery, it's a good idea to set timers to pre-cool homes during daytime solar production to reduce the load in the evening.

FAQ

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

- Make sure you clean the filter once a year to ensure it runs effectively and efficiently.
- If it is primarily for heating your home, you may want to have it mounted on or near the floor. This allows the heated air to flow across the floor, providing immediate warmth.
- Choose a system that has timer functions and/or wi-fi or bluetooth connectivity to ensure you can have flexible control and equip your home with smart technology (such as programming it to work only when the indoor temperature meets a certain temperature). You may also want to try and coincide your heating and cooling with solar production windows to maximise savings.
- Seal up any air leaks in your home.

Does a heat pump work in cold climates?

Yes! A heat pump can keep your home warm even when the temperature dips down as low as -10°C. In fact, heat pumps heat roughly half the homes in Norway, Finland, and Sweden.

Do I need to insulate my home first?

Getting off gas appliances is essential to reduce energy bills and household emissions and should be a key priority. Insulation will improve the efficiency of heating and cooling your home and may be a good idea if you live in one of Australia's coldest areas or a particularly leaky home. However, insulation doesn't need to be done before electrification and it isn't essential to experience the economic, health and environmental benefits of switching from traditional gas and electric resistance heaters to efficient electric heat pumps. To improve the thermal performance of your home, start by looking at the low hanging fruit such as sealing up air leaks, installing better interior window coverings, covering up windows and closing doors at night. You may want to also consider the big ticket items like ceiling, wall and floor insulation.

Does a heat pump require ductwork?

No. For homeowners with smaller homes, or for those with a need to heat and cool individual spaces within larger homes, mini-split or ductless heat pumps allow you to regulate the temperatures in individual rooms. Mini-split systems are perfect for retrofitting homes with non-ducted heating systems.

What finance options are available?

Besides government rebates, there are private finance options available that may help you afford the upfront 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

→ **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

→ **Better Health**
Health impacts of gas heating
betterhealth.vic.gov.au/health/healthyliving/gas-heating-health-and-safety-issues

→ **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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