

actsmart[®]

choosing a heating system

Heating makes up a large 60% of the average Canberra home's annual energy costs, so having an efficient heating system is one of the best ways to minimise your bills while staying warm in winter.

This factsheet provides important information and tips on choosing the best heater or heating system for your needs. Also read our **Staying warm on less energy** factsheet for ways to reduce your need for heating. A well-sealed and well-insulated home will mean you could install a smaller, more affordable heater.



Important considerations

When choosing a heater/heating system for your home, consider these important questions:

- ✓ What are the running costs?
- ✓ Do you want a ducted or non-ducted system?
- ✓ What is the purchase price?
- ✓ What are the installation costs?
- ✓ Is it electric or gas?
- ✓ Can the system cool and heat?



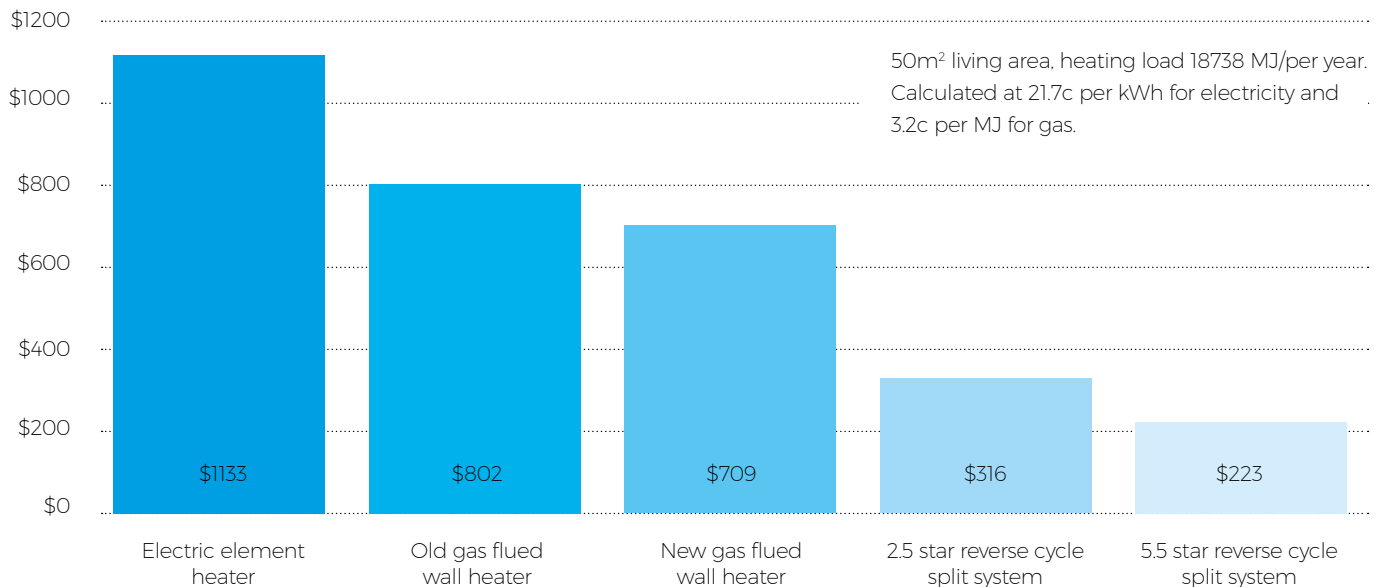
TIP

The length of time that your heater is on and the temperature you set it at have a big impact on your energy bills. To keep costs down, turn it off over-night and keep the thermostat at between 18–20 degrees. Every degree warmer, costs you around 10% more.

Running costs

This graph compares the approximate costs of heating a large living area in Canberra to a comfortable temperature over a 12-month period, with some of the most common heating systems shown. This is a guide only. Your annual running costs will depend on your patterns of usage and may be very different.

Approximate annual cost to heat a large living area in Canberra





Reverse-cycle air-conditioners

As this graph illustrates, reverse-cycle air-conditioners (ACs) are the cheapest type of heating to run. These wall-mounted units, also known as split-system ACs, are around 300 to 600% efficient (check the model's energy rating label for the number of stars). This is because they capture the energy that's in the air and pump it into your home. This means for every 1 unit of electricity used they produce 3 to 6 units of heat.

Ducted or wall mounted

Ducted heating systems, also known as central heating, are designed to heat a whole house, with warm air blowing out of vents in the floor or ceiling. The heat can be generated by a gas furnace or by an electric reverse-cycle AC. A gas system may heat your home more quickly, but a reverse-cycle system will have much lower running costs (per unit of heat delivered) and can also cool your home for summer.

Ducted systems are generally significantly more expensive to run than wall-mounted heaters of the same type. This is because they heat much larger areas and as much as 30% of heat they generate can be lost through the ducting. Ducted systems also reduce the thermal performance of your ceiling—outlet vents can be poorly sealed (a major source of draughts) and gaps are required in ceiling insulation for the ducting. Some installers now use better insulated ducting (for example R2), and you can seal around outlets to reduce losses.

While modern ducted systems may allow you to have as many as eight zones, you often end up heating rooms that aren't being used. If comfort in every part of your house is your main concern and you can afford the higher running costs, then a ducted system may be your best option.

Wall-mounted heaters, such as gas, electric element and split-system reverse-cycle ACs, are designed to heat one large room or a couple of adjacent rooms if there's good air flow between them.

How does this compare to other forms of heating?

- ✓ Electric element heaters, including all column, panel, blower and bar radiator heaters, are around 100% efficient. They only create 1 unit of heat from 1 unit of electricity.
- ✓ Reverse-cycle ACs are 3 to 6 times cheaper to run.
- ✓ Gas heaters cost 2 to 3 times more to create the same amount of heat as a reverse-cycle AC (based on current energy prices).

Did you know?

Using several split-system ACs or a couple of split systems with multiple heads (multiple indoor units attached to one outdoor unit) instead of a ducted system is generally:

- ✓ cheaper to buy and install
- ✓ cheaper to run (more efficient per unit of heat delivered)
- ✓ allows you to only heat and cool spaces that are being used
- ✓ enables you to set different temperatures in different areas of your home
- ✓ doesn't reduce the thermal performance of your ceiling or floor.

Split-system ACs typically cost between \$1000 and \$5000 installed, with the price increasing with the size, quality and additional features (such as humidity control). A good-quality system capable of heating and cooling a large living area might cost around \$3000 installed. Ducted reverse-cycle AC systems typically cost more than \$10,000 installed, and ducted gas systems more than \$5000.

By upgrading from gas or electric element heating to a split system, your winter bill savings could cover the purchase and installation cost in as little as three years.



Gas

Gas used to be the cheapest and most environmentally friendly energy source for heating, but it's not any more:

- ✓ The high-efficiency of modern electric ACs make them significantly cheaper to run than gas heaters.
- ✓ The ACT is moving to 100% renewable electricity, which has a much lower carbon footprint than gas.
- ✓ Gas heaters can also have an impact on indoor air quality. Maintaining good indoor air quality requires ventilation, which causes heat loss.
- ✓ Moving away from gas heating may also allow you to close your gas account (if it's your only gas appliance), saving you over \$300 per year on the supply charge.

Visit the Actsmart website: www.actsmart.act.gov.au to see if there are any rebates to upgrade to more efficient electric appliances.



Electric element heaters

Electric element heaters come in many types and sizes, including blower heaters, oil column heaters, bar radiators and infrared panels. While they have different ways of emitting or distributing heat, the rate at which they convert electricity (efficiency) to heat is the same—about 100% (1 unit of electricity produces 1 unit of heat). This means a powerful heater might use 4 units of electricity and put out 4 units of heat. A low power heater might use 1 unit of electricity and put out 1 unit of heat.

Because electric element heaters have relatively high running costs (see graph) you should ideally only use them in small rooms, for short periods. If you're going to use them for long periods, it might be more cost-effective to replace them with a split-system reverse-cycle AC.

If you use an electric element heater, make sure it distributes heat in a useful way. For example, a wall-mounted panel heater might put out a large amount of heat but if it's on the other side of the room from where you're sitting, most of the heat may be wasted heating the wall and ceiling above.

A heater with a digital thermostat can be set at a desired temperature. The thermostat will automatically switch the heater on and off to keep the room at this temperature. This means they're potentially cheaper to run because they're not on all the time.

Other resources

[Staying warm on less energy factsheet](#)

[Draught proofing factsheet](#)

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or call: 13 22 81**

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