

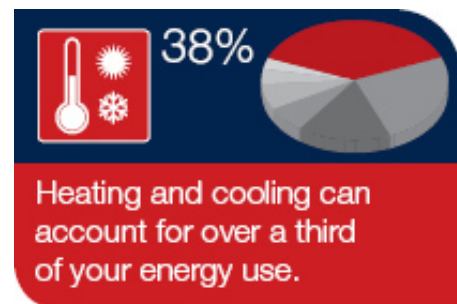
Energy efficient heating

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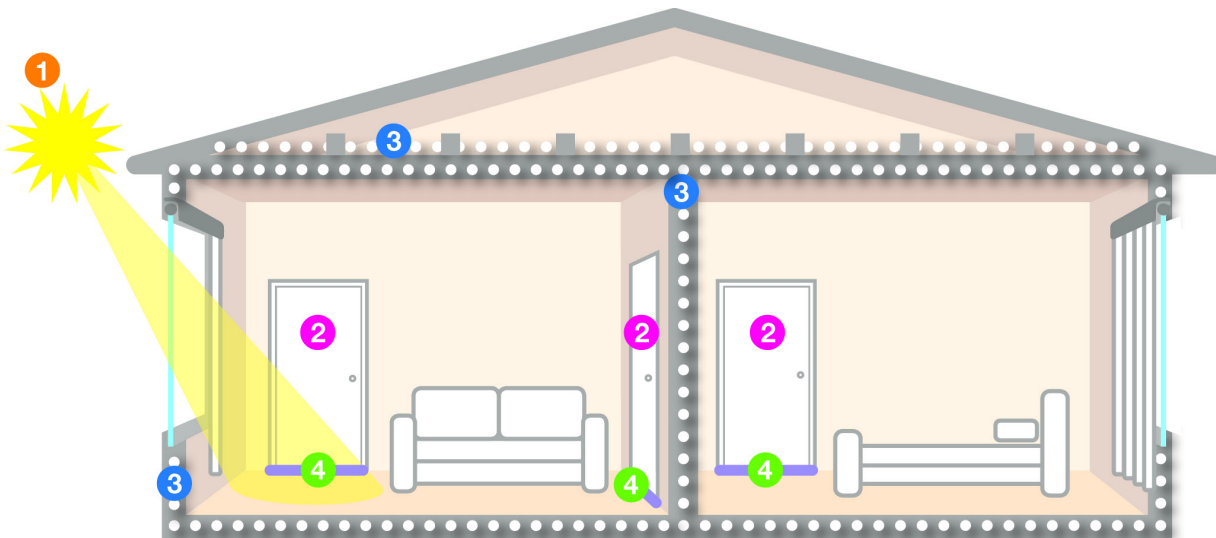
No one wants to spend more than they need to on heating their home. There are a number of ways to reduce your heating costs and many options for heating your home efficiently.

The typical South Australian home will use more energy for heating than cooling.



Improve the effectiveness of your heating

Before you turn on the heater, make sure your home is well-insulated, draught proofed and that you are only heating the areas you need.



1 Let the sun shine into your home

The cheapest form of heating comes from the sun. Using natural heating where possible to warm your home is known as passive heating.

On winter days the sun is low in the sky as it moves from east to west. Use the sun to help heat your home for free.

Open curtains and blinds during the day and move things blocking out light such as external shading. If

the sunlight warms a tiled or concrete floor, some heat will be stored and released later warming your home into the evening.

2 Only heat the areas you need

The larger the area you heat, the more energy you will need to use and the higher your running costs will be.

Dividing your home into sections, or zones, by closing doors allows you to only heat the areas you're using and reduce your heating costs. If you have a ducted system it may already be divided into zones - try to ensure you are only heating areas that are being used.

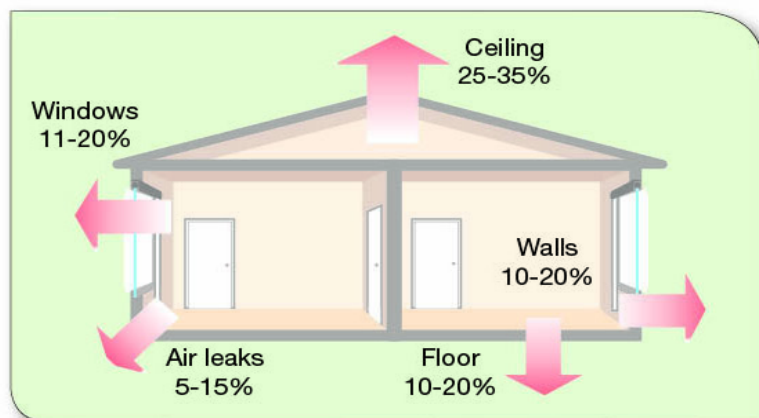
3 Insulation

In winter up to 50% of your heating could be lost through your ceilings and walls.

Insulation is any material that reduces the amount of heat transfer in to or out of your home through the ceiling, walls, windows, doors or floor.

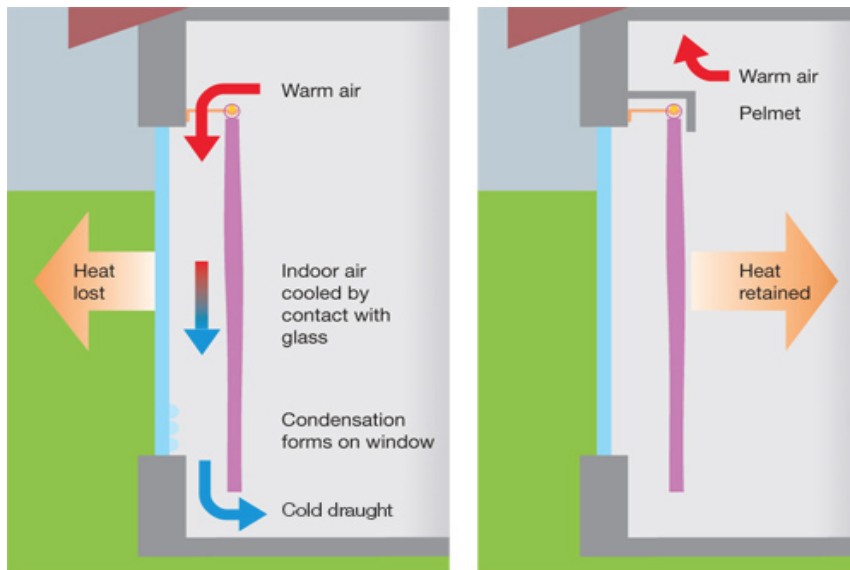
Insulation will help keep your home warmer in winter, reduce your need for heating appliances and lower your heating costs.

If you don't have ceiling insulation, consider having it installed. If you rent, ask your landlord if they will have it installed. Insulation can deteriorate over time so ensure it is replaced or topped up when it is no longer effective.



Typical heat loss from a home in winter from an uninsulated home. Source: yourhome.gov.au

Additionally up to 20% of your heating could be lost through your windows. Thick curtains and pelmets are an effective way to insulate windows, keeping rooms warmer.



Curtain without pelmets

Curtains with pelmets

For more information including insulation safety and recommended R-values for South Australia, see [Insulation, ventilation and draught proofing your home](#).

4 Draught proofing

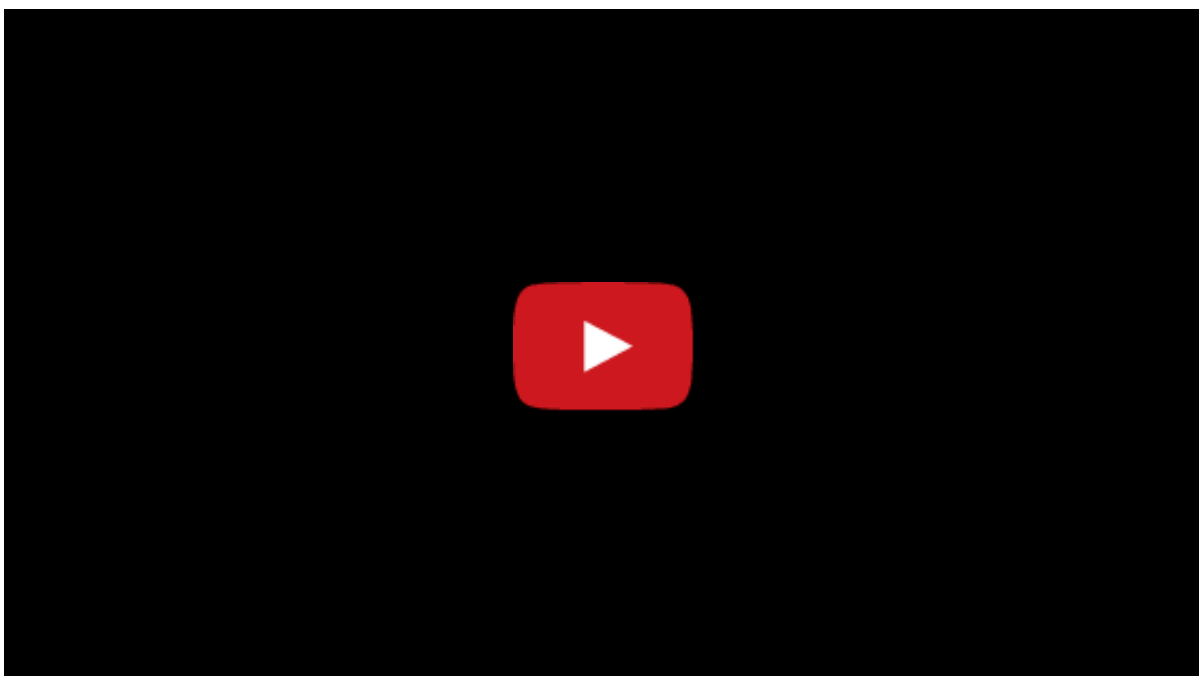
Cracks and gaps, for example around doors and windows, can cause draughts and lose large amounts of heat from your home.

Simple changes like using draught excluders under doors, sealing strips around doors and window frames and filling gaps could help reduce your heating costs.

For more information see [Insulation, ventilation and draught proofing your home](#).

If you are using a gas heater in your home, see [Important safety advice for gas heaters](#).

Choosing a heater and running costs



Heaters work in different ways, so choosing the best heater will depend on what you want to heat. The best heater for your needs table suggests the most effective heater types for different situations and














provides examples of estimated running costs for the heater in each room size. If you are using the heater in a larger room or area the running costs may be higher.

The first row shows heater options for one or two people staying in one space, eg watching television. These are best if your home has large living areas and your only heating option is a small heater which is not large enough to heat a the whole area. Radiant heaters and electric rugs heat you directly.

Be aware that portable heaters that heat areas, such as oil, column and fan heaters, while low cost to purchase, can be very expensive to run and ineffective if used to heat larger rooms. This is because they have to work harder to produce the required temperature. If a portable heater is your only option, you can lower running costs and make it more effective by reducing the size of the area you're heating or rather than heating an area, choose a radiant heater, or electric rug, which will heat you directly

The other rows show heaters that heat different sized areas and are best if people are moving around.

Table: The best heater for your needs

I want to heat	Suggested heater options and hourly running costs ^{A,B}			
1 or 2 people in one place	electric radiant heater (1kW)  33¢	electric heated rug  4¢	electric blanket  4¢	
Small room floor space 12m ²	small reverse cycle air conditioner  11-15¢	electric panel heater  40¢	electric portable heater  40¢	
Large room floor space 36m ²	reverse cycle air conditioner  33-40¢	gas heater  47-52¢	electric heat bank ^C (off peak)  54¢	small combustion fire ^E  47¢
Whole of house ^D floor space 200m ²	zoned ducted reverse cycle air conditioner  \$1.48-\$1.94	zoned ducted gas heating  \$2.40-\$2.72	large combustion fire ^E  \$2.60	

Notes: A. Estimated running costs are based on 33¢ per kWh for electricity (peak) or 3¢ per MJ for natural gas unless otherwise stated. B. Estimated running costs have been based on 0.36MJ/h (100w) of heating per m². C. Based on off peak electricity tariff of 15¢ per kWh. D. Based on a 200m² home with 150m² heated (this excludes bathrooms and garages etc). E. Based on a tonne of firewood costing \$350 and generating 4500kWh of heat.

More about heater running costs

The best heater for your needs table provides a guide for the estimated running costs for different heater types being used in different situations.

If your heater can be plugged in, you can get an accurate running cost by using a power meter, there is one provided free on charge in the Home Energy Toolkit available from most South Australian public libraries.

If you have recently installed or about to purchase a reverse cycle air conditioner, you can compare estimated running costs on the Energy Rating website.

For more information see Calculate your appliance running costs. Please note that these costs are only a guide, determining the actual running costs of any heater depends on:

- the size and efficiency of the appliance
- what you are heating eg one or two people, or if a room, the size of the area you're trying to heat
- the temperature set on the thermostat and how often the thermostat cycles the heater off and on again
- if your home is insulated and draught-proofed.

Heater buying advice

Use the best heater for your needs table as a guide to choose the best type of heater for your needs. For heaters that heat a room or area, the heating power required will be determined by the size of the area you need to heat.

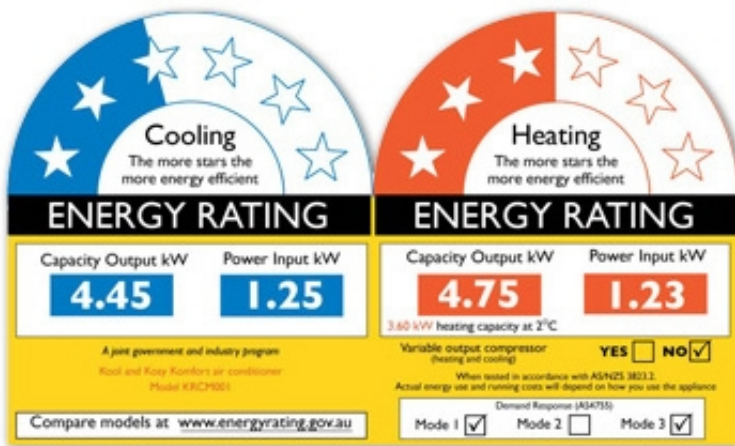
A heating specialist can help you with this decision however the following table can be used as a rough guide to work out the heat output (measures in watts or megajoules) required per square metre of your home.

Home type	Required heater output per square metre of floor area
Uninsulated home	130 watts or 0.47 megajoules per hour
Insulated ceiling only	100 watts or 0.36 megajoules per hour
Insulated ceiling and walls	80 watts or 0.29 megajoules per hour
Energy efficient home	60 watts or 0.22 megajoules per hour
These figures are based on rooms with 2.4 metre ceilings.	

When considering the best heater for your needs it also worth considering your best options for cooling at

the same time.

Some heaters will have an energy rating label. You can use this to compare the energy use and efficiency of similar sized appliances. When comparing two equally sized appliances, choose the appliance with the highest star rating - it will be cheaper to run. You can compare estimated running costs of new appliances on the Energy Rating website.

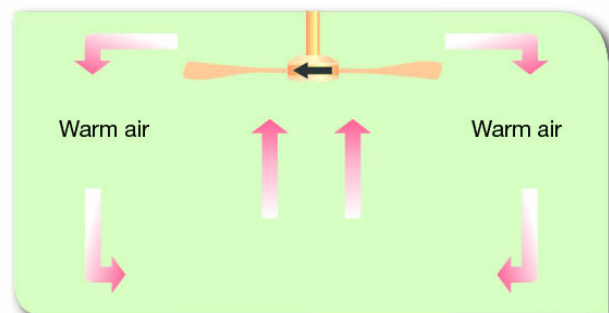


When shopping for a heater, obtain three quotes and compare prices. Keep in mind the cost of installation for fixed units. Ask about running costs and any ongoing maintenance costs. Maintain your heater to keep it working safely and efficiently.

Heating energy-saving tips

Saving energy by reducing the amount of heating you need can be as easy as making simple and practical changes. This includes:

- Setting your heater's thermostat to 18-21°C or as low as you feel comfortable with. Every degree lower can reduce the running costs by 10%.
- Adjusting your heater's louvres towards the floor because hot air rises. Also keep any reflectors dust free and clean filters regularly.
- Using a reversible fan to complement your heating by dispersing hot air around a room. Warm air rises and collects in a layer underneath the ceiling. If your ceiling fan has a reversing switch, use it to circulate this warm air throughout the room.
- Dressing appropriately for the weather. A jumper in winter will allow you to set your heater's thermostat to a lower temperature, saving energy.



Reversible ceiling fans can be used to improve the effectiveness of heating by moving warm air down into the room.

Watch our video to find out ways to reduce the amount of energy you use to heat and cool your home and save on energy costs.



Heater safety

Heaters can be dangerous if they are not used safely. Following a few simple heating safety tips can keep your home and the people in it safe:

- Don't leave heaters unattended as they can cause fires. Keep flammable materials at least one metre away from heaters.
- Never plug a heater into a powerboard, double adaptor or extension cords with other appliances as the powerboard may overload and cause a fire.
- Regularly service and maintain your heater according to the manufacturer's instructions. Check that your heater's power cords and plugs are in a good condition before using it.

Important safety advice for gas heaters

Carbon monoxide is a colourless, odourless and tasteless poisonous gas. It is produced when gas doesn't burn properly and is very hard to detect so it is often called the silent killer.

If you are using an unflued type of gas room heater in your home, ensure the room has fixed permanent ventilation to avoid the production and build up of dangerous combustion gases.

It is important that you always have gas heaters installed by a licensed gas fitter and be sure to get a certificate of compliance on completion of the work.

Never use outdoor gas heaters including camping heaters inside as they release dangerous combustion gases and are a high fire risk.

LPG cylinders should never be used inside. Where LPG appliances are used, the gas cylinder should be located outside with the gas supply piped inside by a licensed gas fitter.

For more information on gas heater safety see [Gas safety](#).

Related information

On this site

Energy efficient cooling
Energy efficient home design

Other websites

Heating and cooling - Your Home
Fair Air - Australian Institute of Refrigeration, Air conditioning and Heating

Downloads

Winter heating guide

Provided by: Department of State Development
URL: <http://www.sa.gov.au/topics/water-energy-and-environment/energy/saving-energy-at-home/household-appliances-and-other-energy-users/heating-and-cooling/energy-efficient-heating>
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