

Room heaters

Options for extra heat

Room heaters are used to heat a small space and are normally portable or fitted to a wall. Most room heaters use gas or electricity.

Room heaters are convenient appliances that provide focused and localised heat which is particularly suitable in a room for people that are elderly, ill or with limited mobility. But they can be expensive.

Room heaters consume a lot of gas or electricity, and if used over a long period of time are likely to cost a lot more than a central heating system.

Ideally, room heaters should only be used as a secondary or supplementary source of heat. Even then, you should use the right heater for the space you want to heat, and carefully control the temperature and the time you have the heater on. Heaters that have these controls are often cheaper to run.

What kind of room heater?

When you're deciding on what room heater to use, consider first what purpose you want it to serve.

1) Heating a whole room for a few hours or more

For this, you should use a convector heater. These work by



Image description: Electric halogen heaters are relatively cheap when heating a small area

warming the air immediately next to them which then naturally circulates relatively evenly around the room. Convector heaters are a good choice if you need a supplementary heating source to warm up a room for a few hours at a time. They take a little longer to work, but this type of heater can be easily controlled with a timer and thermostat, so you don't overheat the room and you save money

2) Heating a room for a short period of time

For a quick blast of warmth, or for more directional heating, you should use radiant heaters. These work quickly and are useful if you want to warm up only part of a room for a short period, as they tend to heat only what is in front of them. Unlike convector heaters, they don't achieve an even level of heat throughout the room, so often don't bring the same level of comfort over time. They rarely have thermostats or timers, which can make their running costs more expensive over long periods.

Electric room heaters

Electric heaters are all considered to be 100% efficient, because they turn all the electricity they use into heat, but this does not mean they are cheap to run. To calculate the running cost you need to look at the power rating of the heater, shown in kilowatts (kW). The higher the power rating the more heat will be produced, but also the cost will be proportionally higher.

The table below shows typical running costs for a range of electric room heaters. Costs are for heaters used on the highest setting, and which are producing heat for the whole hour.. However, heaters with a thermostat will automatically turn off when the required room temperature is reached, meaning in reality the cost will be lower over several hours.

Electric room heaters

Pic.	Heater	Heat source	Typical power rating	Running cost per hour*		
				Single-rate meter	Economy 7	
					Night	Day
(1)	Bar fire	radiant	2 kW	29p	15p	34p
(2)	Convactor heater	convactor	2 kW	29p	15p	34p
(3)	Oil-filled radiator	convactor	1.5 kW	22p	11p	26p
(4)	Fan heater	radiant	2 kW	37p	18p	43p
(5)	Halogen heater	radiant	1.2 kW	18p	9p	20p

*Running costs assumptions: Single-rate meter, 14.6p/kWh; Economy 7 (night), 7.2p/kWh; Economy 7 (day), 17.0p/kWh To calculate this yourself times the heat output of your electric heater by your electric kWh unit cost.

Hot parade (electric)

- 1) radiant bar fire,
- 2) convector heater,
- 3) oil-filled radiator,
- 4) fan heater,
- 5) halogen heater.



Electric room heaters are all expensive to run and not appropriate as a main heat source. Chose a type of heater depending on how you intend to heat the room, because otherwise you may have a high running cost but not feel an increase in comfort from the heat. Halogen heaters tend to be the cheapest radiant heaters as they have a low power rating (but also produce less heat), while oil-filled radiators are often the cheapest convector heater because there is a thermostat to control the temperature.

In general, if you have to use an electric room heater, use it only when necessary and consider the following:

- Use a timer if it has one, if not, you can buy a timeswitch for the plug from a hardware shop.
- A thermostat will reduce running costs, though how much it reduces costs by depends on lots of factors, such as room size, insulation levels and making sure the thermostat is not turned up too high.
- If you are on Economy 7, avoid using heaters for long periods within the peak hours if you can. It's better to use night storage heaters that are charged at night.

Image description: Oil-filled radiator. These are often the cheapest electric heater when running over several hours



Gas room heaters

Gas heaters are different to electric heaters in their efficiency, as not all the gas is converted into heat output into the room (some is lost as exhaust gases, moisture and the creation of light). However main gas is around three times cheaper than electricity, meaning that the running cost is often comparable'

Gas heaters can be run on mains gas, or LPG (liquid petroleum gas) also known as bottled gas. If you are considering purchasing a gas heater you will need to check current safety regulations

as some fixed heaters require flues or chimneys, to ventilate combustion gases and moisture out the home. Portable gas heaters don't need flues, however you still need to make sure the room is well ventilated. Otherwise there is a risk from carbon monoxide, while the water vapour gas heaters produce can cause condensation and if not ventilated can lead to damp and mould problems.



Image description: Modern radiant gas fire

Hot parade (gas) 6) radiant gas fire, **7)** gas convector heater, **8)** open decorative gas fire, **9)** closed decorative gas fire bottled gas fire **10)** bottled gas heater



Gas room heaters

Pic.	Heater	Heat source	Typical output	Average efficiency	Running cost per hour*	
					Mains gas	LPG
(6)	Radiant gas fire	radiant	5 kW	60%	35p	84p
(7)	Gas convector heater	convector	3 kW	60%	21p	50p
(8)	Open decorative gas fire	radiant	2.5 kW	28%	38p	90p
(9)	Closed decorative gas fire	radiant	4 kW	60%	28p	67p
(10)	Bottled gas heater	radiant	4 kW	92%	n/a	73p

* Based on 4.2 kWh for mains gas and on Oct 2018 Sutherland tables calculations for LPG. To calculate this yourself (output ÷ efficiency) x 100. Multiply the result by your gas kWh unit cost.

Gas heaters are sold with a heat output rating and an efficiency rating, which should be looked at in conjunction with each other. Heat output is an indication of how much heat will be provided into the room. If you look at two heaters with the same heat output, the heater with a higher efficiency will be cheaper to run than the heater with the lower efficiency. This is because it will use less gas to provide the same amount of heat.

The table below calculates the running cost for heaters using mains gas and LPG, based on the average heat output and efficiency rating of various heaters. Actual costs will vary, but what's important is how they compare with each other. These are

based on the heaters being on full power for the hour, without a form of thermostatic control.



Who we are

We're a charity supporting people and organisations across the UK to tackle the climate emergency and end the suffering caused by cold homes.

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