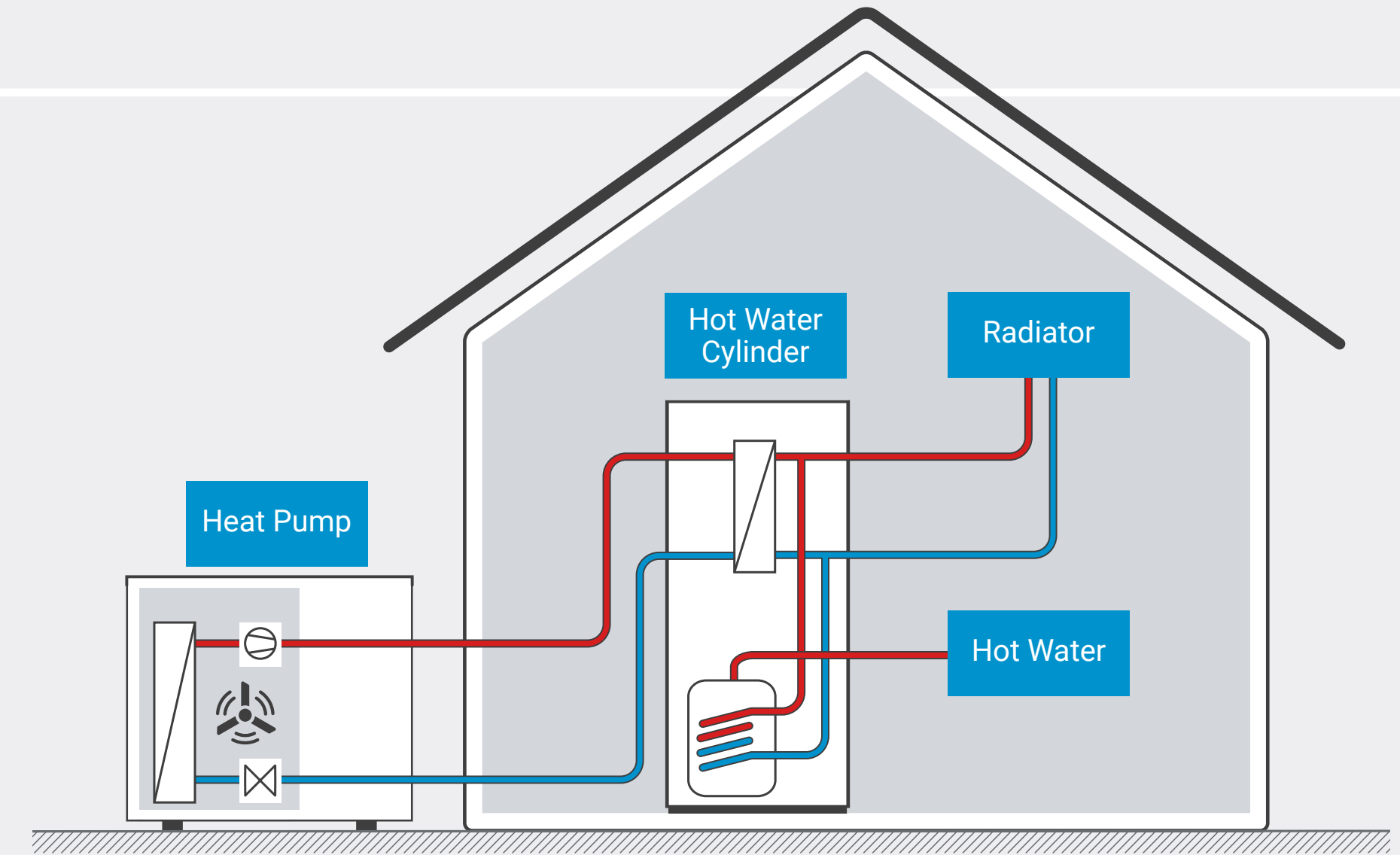


# Heat Pump

## How it works

Air source heat pumps (ASHPs) run on electricity to create heat that both warms the home and provides hot water. It takes heat energy from the air outside to heat water for radiators and taps. Refrigerant and compression technology is used to take the heat from the air (working like a fridge in reverse).

Heat pumps are three to four times more efficient than other heating systems – and they don't use fossil fuels. Unlike a boiler, the heat pump is set to a steady temperature all the time, working at a lower average flow temperature than a gas boiler. (The water in the radiators doesn't have to get as hot as the temperature doesn't go up and down as much, like when a boiler runs).



## Our experience

The heat pump<sup>1</sup> has reliably created a cosy internal home temperature. The kit takes up space (roughly 1-2 cubic meters), and whilst we did fit it in this property, this should be an early consideration which installers should discuss with homeowners. When running, the heat pump is quiet and unobtrusive and is left on all the time.

Shop around for an energy tariff - there are several geared towards homes with heat pump systems. For a well-insulated home, running costs are currently like those of a gas boiler system, due to current energy price policies (the cost of electricity in the UK is currently much higher than gas).<sup>2</sup>

## Installation

- Radiators with a larger surface area may be needed (with a flow temperature of 55°C or cooler) and heat pumps also work well with wet underfloor heating systems
- Larger diameter pipework may be needed (to support greater flow of water through the system)
- Space to house a hot water cylinder or a heat battery.
- Antifreeze may be added to pipes (glycol was added to this property's heat pump system)
- Microgeneration Certification Scheme (MCS) Certification is required to access grants and evidence correct installation (providing a recognised mark of quality)

## Benefits

- Reduced carbon footprint (further reduced through electricity generated by the solar panels)
- Better energy efficiency compared with a gas boiler system
- Consistently comfortable temperatures

<sup>1</sup> Heat Pump Manufacturer: Vaillant, Type: aroTHERM plus, Size: 5kW.  
Hot Water Cylinder Manufacturer: Vaillant, Type: uniSTOR pre-plumbed Hot Water Cylinder, Size: 200 litres.

<sup>2</sup> As at February 2025, the electricity price cap is 24.5 pence per kWh and the daily standing charge is 60.99 pence. Gas is 6.24 pence per kWh and the daily standing charge is 31.65 pence.