

Everything you need to know about air source heat pumps



What is an air source heat pump?

Air source heat pumps are a renewable energy source and can replace boilers as the heat source for a home. Heat pumps require electricity to run but the heat they extract from the air is constantly being renewed naturally. They are a proven technology and excellent for managing heating issues, specifically in off-gas areas.

How do they work?

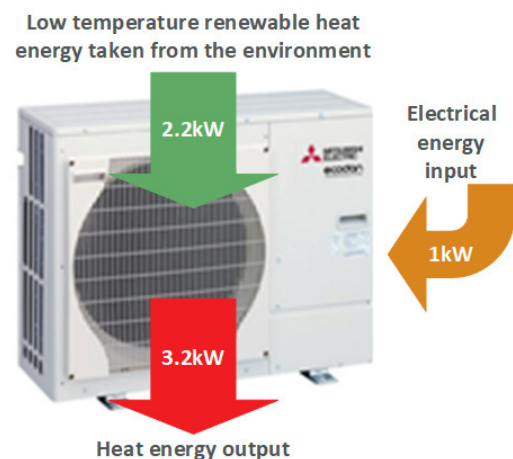
Heat pumps absorb heat from the outside air in the same way that a fridge extracts heat from its inside. This heat is used in a simple refrigeration cycle after which it can then be used to heat radiators and hot water in your home.

What happens if it's really cold outside?

A heat pump can create heat from the outside air even when the temperature is as low as -20°C .

Do heat pumps use a lot of energy? Typically they use less energy than a traditional heating system such as electric heating. E.g. If you buy one unit of electricity this will be turned into one unit of heat energy by a storage heater.

With a heat pump, for every unit of electricity it uses we will get approximately 3 units of heat energy in return, making it three times more efficient than storage heating.



Benefits of air source heat pumps

- Lower fuel bills, particularly when replacing an electric or oil heating system
- Lower carbon emissions
- No fuel deliveries required
- You can heat your home as well as your water
- Long life expectancy and high reliability
- They produce only the energy that your home needs to meet your chosen comfort levels, no heat is wasted
- Heat pumps provide consistent, energy and cost efficient heating for the whole house, which can reduce condensation and ensure higher levels of air quality throughout your home
- Low maintenance
- Easily controlled with optional wi-fi connectivity for remote control

Things to consider

- **Do you have somewhere to put it?** Air source heat pumps need plenty of space around them to get good air flow. Consider where the outside unit may be located, advice will be given at the initial site survey.
- **Is your home well insulated?** A well-insulated home is essential in allowing the air source heat pump to be most energy efficient. The better insulated your home is, the better the performance of the heat pump, and the more efficient the system will be.

Please be aware that the system may include the upsizing of the radiator circuit, and may result in new pipework and post-install decoration.

Maintenance

- A yearly householder check that the air inlet grill and evaporator are free of leaves or other debris
- Detailed check by a professional installer every year.
- Any plants that have started to grow near the heat pump unit should be removed
- Check the central heating pressure gauge in your house from time to time. You will be shown how to do this.
- Use anti-freeze in colder weather to prevent the heat pump from freezing. Levels of anti-freeze and its concentration vary but this will be explained to you by the installer.

Air source heat pumps are expected to operate for 20 years or more, however require regular scheduled maintenance. You can still live in your house while the air source heat pump is being installed. The existing boiler will be left until last minute and will take between an afternoon to one day to switch over to the new system.

What is the installation process?

Air source heat pumps can be either mounted onto a wall or positioned on the ground. They have relatively low disruption levels and will take roughly a week to install, depending on current heating system, time scales will depend on a case by case basis. However, you will be provided with a more accurate time scale once your house has been assessed.

Step 1:

Installing an ASHP in your home begins with an initial visit from the design team to collect information to assess if your property is suitable. They will also discuss with you the equipment and radiator positions, giving you an idea on how long the installation will take, what is involved and of course answer any queries you have.

Step 2:

This pre start visit is designed to confirm and approve the layout drawing showing equipment and radiator positions together with checking if any furniture or belongings will need moved prior to installation day.

Step 3:

The team will arrive and put in place dust protection measures and begin work. At the end of the first day we aim to have the hot water up and running (where necessary temporary heating can be left in place over night). By the end of day 2 your new heating will be operating leaving day 3 for final checks and a handover/overview of the new system by the installation team.

Step 4:

Following the installation a follow up visit will happen to make sure that the system is working to meet your needs, if required we will give further instruction on operating this.

Finally an up-to-date Energy Performance Certificate (EPC) will be produced incorporating the new renewable energy heating system.

Costs and financial support

Installing a typical system costs around £9,000 to £14,000. Running costs will vary depending on several factors including the size of your home, how well insulated it is and what room temperatures you are aiming to achieve.

Will air source heating systems result in lower fuel bills?

The heat pump will use less energy than traditional heating systems that use electricity or gas to produce the same heat output.

- Total savings will depend on a number of factors including:
- how warm you like your home and how much hot water you use
- how well insulated your home is
- the efficiency of your old heating system
- how much you heat your home at present; eg if you do not use your existing heating then there will not be a saving.

However in this scenario we would expect that you can now afford to heat your home due to the efficiency of the ASHP.

Renewable Heat Incentive (RHI)

The Renewable Heat Incentive (RHI) is a UK Government scheme set up to encourage uptake of renewable heat technologies amongst householders, communities and businesses through financial incentives.

What could I earn using RHI?

RHI cash payments are made quarterly over seven years. The amount you receive will depend on several factors and the installation partner will be able to advise further. You can estimate how much money you could earn through RHI using the Department for Business, Energy and Industrial Strategy's RHI [payment calculator](#).

You must apply within one year of the commissioning date of your system.



Our partners at Home Energy Scotland provide free, impartial advice on energy saving, keeping warm at home, renewable energy, greener travel, cutting water waste and more. They also offer an interest free loan to help fund home renewable systems.



For more information about funding and support, call Home Energy Scotland free on 0808 808 2282.

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