

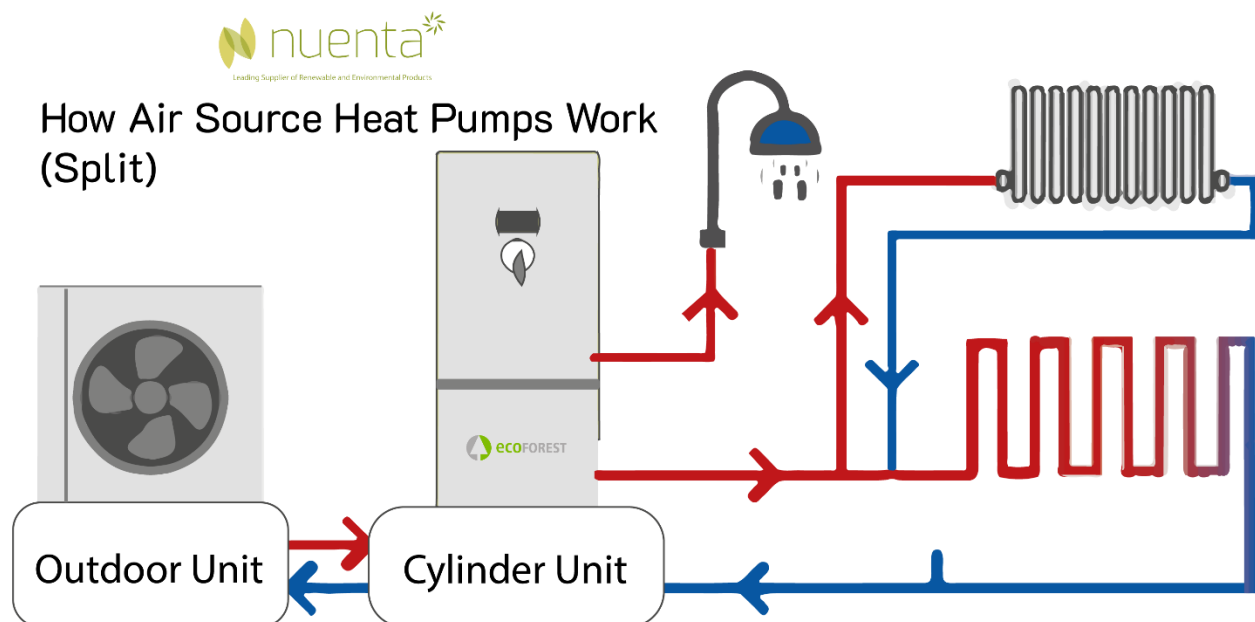
Air Source

What is an air source heat pump?

They're sometimes referred to as air-to-water source heat pumps. They essentially transfer heat from outside the home to water. The hot water then heats your home through your radiators or underfloor heating. You can also store hot water for later in a hot water cylinder. Stored water will then be directed to your hot taps and showers.

When heat from the air outside is absorbed into the fluid in the system, the fluid passes through a heat exchanger inside the pump. The temperature rises and transfers the heat to the water.

How does an air source heat pump work?

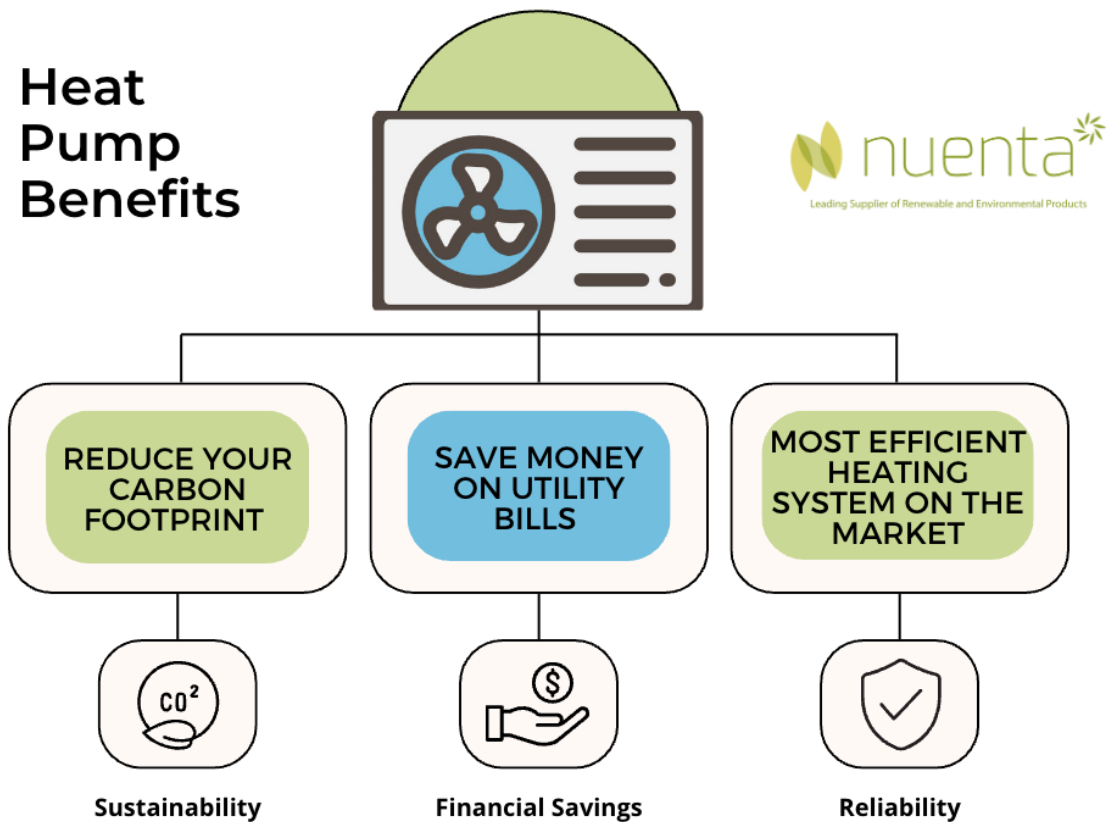


Everything around us, especially the air, contains thermal energy. Thermal energy is heat, rising naturally from warm to cold places. Air source heat pumps reverse the cycle to provide heat energy inside when outside is colder.

Pressure is a way to increase the temperature with lots of technology, and ASHPs are no exception—the same works when you decrease pressure. The temperature will drop too. This relationship is vital in how the system works.

Heat pumps use electricity to compress (increase pressure) the gas, called the refrigerant. When the refrigerant heat transfers to your home through the heat exchanger, it will cool slightly and begin to expand. Without this cooling, the refrigerant wouldn't be cold enough to absorb heat again.

The cold refrigerant begins its journey in the evaporator, which is the outside unit. It can absorb heat energy from air directed across the heat exchanger.



FAQs

What are the advantages and disadvantages of air source heat pumps?



Energy efficient
Environmentally friendly
Reduction in your carbon footprint
It provides both cooling and heating.



You may need planning permission
Installation costs
Not suitable for all properties

What are the advantages of air source heat pumps?

- **Energy efficient** - The energy output is far greater than the energy required to run the system.
- **Environmentally friendly** – As the main component used for your heating is air, it's entirely based on a renewable resource.
- **Reduction in your carbon footprint** - By relying less on the national grid, you reduce your carbon footprint.
- **Provides both cooling and heating** – A reversing valve can reverse the direction of heat.

What are the disadvantages of air source heat pumps?

- **You may need planning permission** – It's not guaranteed to require approval, but councils have different restrictions in different areas, so it's best to check.
- **Installation costs** – With any heat pump, you're investing. The money you'll save long term on your utility bills will surely pay you back in the long term.

Do air source heat pumps work in winter?

Yes! Enjoying all the benefits of an air source heat pump in winter is possible. They can easily manage temperatures of -10 degrees, with other models able to withstand temperatures far colder still.

Do air source heat pumps heat radiators?

Air source heat pumps work great with radiators and a combination of radiators and underfloor heating. You may need an upgrade if you've got very old radiators, but we can help with advice there.

