

AIR SOURCE HEAT PUMPS



Clean, efficient heating for a low-carbon future

Air source heat pumps (ASHPs) provide heating and hot water by extracting heat from the outside air — even in cold weather — and using electricity to boost it to a usable temperature. They are a key technology for cutting emissions. Heating homes is responsible for around 14% of total greenhouse gas emissions, mostly from gas boilers. Replacing gas boilers with ASHPs is essential for reaching net zero.

Key Climate Benefits

✓ 1. Major Emissions Reductions

- A typical UK home switching from gas to ASHP can cut heating related emissions by 60–75% today.
- As the electricity grid continues to decarbonise, these savings will increase further over time.

✓ 2. Extremely High Efficiency

- Gas boilers are typically 85–90% efficient.
- Air source heat pumps are 300–400% efficient. For every unit of electricity used, they deliver 3–4 units of heat. This efficiency is what drives both carbon and cost savings.

✓ 3. Compatible with Renewable Electricity

- Heat pumps run on electricity, which is increasingly generated from renewables. When paired with a renewable electricity tariff or rooftop solar they can provide near-zero-carbon heating.

✓ 4. Lower and More Stable Running Costs

- With good insulation and correct system design, heat pumps can offer similar or lower running costs than gas boilers. Heat pumps also protect households from future fossil fuel price volatility.

✓ 5. Improved Comfort

- Heat pumps provide steady, even warmth rather than short bursts of intense heat.
- Homes feel more comfortable and maintain consistent temperatures throughout the day.

✓ 6. Better Air Quality & Safety

- No combustion means no nitrogen dioxide (NO₂), no carbon monoxide risk, and no flue or gas leaks. This improves indoor air quality and overall household safety.

✓ 7. Future-Proof Heating

- Gas boilers are expected to be phased out for new installations in the coming years. Installing a heat pump now prepares homes for future regulations and increases heating resilience.

Costs & Support (UK)

- Typical installed cost: £8,000–£12,000 (before grants).
- The Boiler Upgrade Scheme currently provides a £7,500 grant toward installation in England & Wales.