

Air-source heat pumps



The Benefits

- Can be 3x more efficient than direct electric heating
- Lower carbon footprint and energy bills
- Modern controls
- Can also provide air-conditioning
- Requires space for the external and internal units

How they work

Electric radiators are said to be 100% efficient i.e. 1kWh of heat produced from 1kWh of electricity. Air-source heat pumps (ASHPs) can produce 3 or 4kWh of heat from 1kWh of electricity. This is achieved through taking latent heat from the outside air and running it through a compressor to significantly increase its temperature. This extra efficiency is called its 'Coefficient of Performance' which can be up to 4 or 5 in modern systems, but this will fall significantly during colder than average weather.

Estimated savings from a BEE Anglia energy review:

Total number of electric heaters replaced	7
Savings per year	£760
Carbon savings per year	1.7
Capital cost	£5,785
Payback period (excluding grant)	7.5
Payback period (with 30% grant)	5.5



Small air-to-air ASHPs units (suitable for offices etc) can cost between £3,500 and £7,000. Complete ASHP systems are likely to be around £12,000 to £17,000.

Electricity savings compared to electric heating can be around 60%, with paybacks around 5 years.

ASHPs can also provide low grade hot water to wet heating systems such as underfloor heating or large low temperature radiators.

You can also get Ground- and Water- Source Heat Pumps. These are more expensive to install, and need more space, but can be significantly more efficient.

Further information is available on...

www.carbontrust.com
www.greensuffolk.org
www.beeanglia.org

