

*"We had storage heaters at our property which had no thermostat control on them, so the house never seemed to get warm. Once the heat pump and radiators were fitted along with a new thermostat controller our house was lovely and warm throughout. We have never had anything for free before, so it was great to have this funded under a grant. I would certainly recommend the installation heat of a heat pump to anyone thinking about it."*



**– Mrs Q – Gosport, Hampshire**

*"It is honestly a dream come true. Before I heard of the programme all I had was old electric heaters. The house was always freezing. We had a running joke in my family that if you're ever hot come to my house to cool down. I had to put blankets over the bedroom windows to try and stay warm at night and I had to turn on the hot water well in advance of having a shower or doing the washing up – even then it wasn't even hot."*




*Having our new air source heat pump has made the world of difference to our lives. Our installer Greg from Aura Heating was so professional and tidy. We barely noticed that he was there, and he was so polite. He installed the air source heat pump in just four days! The heat pump is so easy to use. We barely notice when it's on and have had no complaints about noise from the neighbours. It has helped to reduce our energy bills and has also added value to our home. I'd definitely recommend applying to the programme if you meet the eligibility criteria."*


**– Miss H – Winchester, Hampshire**

*"I recently had installed an air source heat pump which is worked solely by electricity. The installation went well, the team arrive promptly each day and worked very hard, in extremely cold conditions, to ensure the job was completed on time. My central heating has now been working for almost one month and I am very happy with the result, both heating and for hot water. My home now feels warm and welcoming to when I enter."*

*I was unsure what to expect and am greatly relieved and please with my new system. It suits my needs very well. I am grateful to Aura and their workforce who were always very helpful."*

**– Mr C – Port Solent, Near Portsmouth**

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Heat pumps are becoming an increasingly popular option for people who wish to heat their homes in a more environmentally friendly way. However, before making the switch, you'll want to be sure it's the right choice.

So, our heating engineers have put together this comprehensive guide to

## **Air Source Heat Pumps.**



# A COMPREHENSIVE GUIDE TO AIR SOURCE HEAT PUMPS

## What is an Air Source Heat Pump?

A Heat Pump uses electricity to capture heat from outside and move it into your home. It's a highly efficient way of heating your property since the amount of heat delivered is far greater than the electricity needed to power the system. No fuel is burned, and no carbon dioxide is emitted, making an **Air Source Heat Pump** more eco-friendly and cheaper to run than traditional boilers.

## How Does an Air Source Heat Pump Work?

You can think of an air source heat pump as something like a fridge operating in reverse. First, outside air is blown over a network of tubes, which are filled with a liquid refrigerant. The refrigerant then warms, becoming a gas, and passes through a compressor; as it does so, the pressure increases and heats the gas even further.

The hot, compressed gases pass into a heat exchanger, which transfers the heat to the water in your radiators – in the same way as a traditional boiler – and is then circulated around your home. As the refrigerant cools, it condenses into a liquid and is ready to start the cycle again.

## Using an Air Source Heat Pump at Home

In the same way, a fridge has to work harder in warm weather; a heat pump has to work harder in cold weather. That said, heat pumps can effectively heat homes in external temperatures of as low as -15 degrees.

Heat pumps have a lower output than a traditional gas or oil heating system, meaning they're best used for heating a home slowly over a long period. An Air Source Heat Pump is an excellent choice when the heating is designed to run at a lower temperature. But that doesn't mean you can't install the system if you plan to keep your radiators; it may just mean you may need slightly bigger ones. This has been the norm, and mandatory, since new building regulations were implemented in June 2022.

Heat pumps can also heat your hot water, but to a lower temperature than a boiler, meaning that if you're running a bath or having a shower, you'll need to mix less from the cold tap, which can be more efficient in the long run. To safeguard against Legionella, the system will perform an automatic weekly sterilisation cycle which heats the water in the hot water storage cylinder to above 60°C.

## Air Source Heat Pump Benefits

There are many benefits to investing in an Air Source Heat Pump – here are some key advantages of choosing one over a traditional system.

- **Highly efficient** – the high efficiency of Heat Pumps means they use minimal electricity to heat your home and water, should result in reduced energy bills.

## How Efficient are Air Source Heat Pumps?

**Air Source Heat Pump efficiency** is far better than an LPG, gas or oil boiler. While a traditional boiler will run at 92-94% at best, a heat pump can deliver over 300% efficiency. An Air Source Heat Pump can produce 3Kw – 4Kw of heat for every 1 Kw energy consumed.

The Seasonal Performance Factor (SPF) will help you determine the running costs of your heat pump over a whole year. Before the **Air Source Heat Pump installation**, engineers will calculate the SPF based on the Seasonal Coefficient of Performance (SCoP), which is the anticipated efficiency of your heat pump over a year using standard climate data across Europe. It considers the average temperatures at your location, the construction of your home, the size of your radiators, and more. The installer should share their calculation with you before beginning work so you know what to expect regarding running costs.

Once installed, the heat pump delivers remarkable efficiency. Compared with a new gas boiler, which runs at 92-94%, Air Source Heat Pump's minimum efficiency is around 300%. For every unit of electricity used, three units of heat energy are generated, making heat pumps the better choice both environmentally and from a cost point of view. In addition, lower flow temperatures (for example, with running underfloor heating) efficiency can increase to 450% – 500%.

- **Low carbon emissions** – Heat Pumps operate using electricity and no carbon emissions are produced by them, which makes them much more eco-friendly.
- **Effective in cold weather** – Heat pumps work at temperatures as low as -15 degrees Celsius
- **Low maintenance** – Their robust design means heat pumps have a long service life – up to 20 years. We recommend that you Heat Pumps are serviced annually to protect from any damage, and wear and tear, and ensure that it is running at its most efficient.
- **Safe** – Air Source Heat Pumps run at a lower temperature, so the radiators don't get as hot, making it a safer system for families. However, extra care should be taken with young children as flow temperatures can reach 55°C.

## How much will an Air Source Heat Pump cost?

The cost of Air Source Heat Pump installation depends on several factors. Firstly, the brand and output of the pump and your location in the UK can impact the price, and so can whether you need new radiators or switch to a wet underfloor heating system. You may also need to consider adding improved insulation.

On average, the cost of a typical installation in a 2/3 bedroom semi-detached house is between £8,000 and £14,000

We have worked in the grant-funded sector for over a decade and is pleased to be able to offer 100% grants to owner-occupiers and private tenants for Air Source Heat Pumps. Grant funding is available because we have access to Government **Home Upgrade Grant** (HUG) and **Local Authority Delivery** (LAD) scheme linked to the Energy Companies Obligation.

## How much will an Air Source Heat Pump save me?

In terms of cost savings over a year, there's no doubt an air source heat pump leaves you better off. Of course, energy prices fluctuate, but some performance estimates showing the potential savings from a few of our upgrades from August to October are as follows:

- In August, we fitted a new 8Kw Samsung Air Source Heat Pump to a three-bedroom semi-detached house previously heated by an oil boiler and radiators. Estimated annual energy savings **£1069**
- In October, we fitted a new 5Kw Samsung Air Source Heat Pump to a two-bedroom property previously heated by electric storage heaters. Estimated annual energy savings **£1203**
- In September, we fitted a new 8Kw Samsung Air Source Heat Pump to a three bedroom semi-detached property previously heated by electric storage heaters. Estimated annual energy savings **£1048**

\*Gas and electricity prices based on price cap rates UK average from 01/10/22. Oil price from Boiler Juice on 31/08/22. LPG price from LPGsave.co.uk. Elec. Heating comparison based on 85% night rate; 15% day rate. Tariffs are subject to change.

## Who is eligible for Grant Funding?

Eligibility is primarily based on household income and the existing energy efficiency of your home. The property must also have a valid Energy Performance Certificate (EPC) or you receive eligible benefits. Grant funding includes the cost of installing radiators, where required, however, it does not include the installation of underfloor heating.

## How to apply for Grant Funding?

As **MCS Certified Installers**, we can confirm your eligibility and apply for the scheme on your behalf. If your property does not meet the criteria, then we can advise you of the full costs and then make an application for the Boiler Upgrade Scheme (BUS) on your behalf which is open to all and will give you £5000 off the installation.

We have been operating across the South-Central region since 2005 so you can be assured that you are in safe hands.

SAMSUNG