PLYMOUTH ENERGY COMMUNITY FUTURE FIT PROGRAMME

Air Source Heat Pump (ASHP) FAQs

What are heat pumps?

Heat pumps absorb latent heat from the outside air and use it to increase the temperature inside your home. Air source heat pumps look similar to air-conditioning units. Their size depends on how much heat they'll need to generate for your home – the more heat, the bigger the heat pump.

How many types of air source heat pumps are there?

There are two types of air source heat pump. Air-to-water systems are more common; they heat water which is then circulated around the home via radiators or an underfloor heating system. They can also be used to heat water in a storage tank for the bathroom or kitchen. Air-to-air systems typically use fans to ciruclate warm air around the home and cannot be used to heat water.

Are heat pumps a renewable technology?

Because the air is heated by the sun, the energy that heat pumps produce is still classed as 'renewable', even though the pump itself is powered by electricity.

Is my home suitable?

Heat pumps are most effective in homes which warm up quickly and retains the heat. Therefore a well-insulated, air-tight home is important.

Will I need planning permission?

You won't normally need planning permission for an ASHP, but if you live in a listed building or conservation area, then you'll usually need the consent of your local authority.

How much space will I need?

While the heat pump itself doesn't take a lot of space, they need to be positioned somewhere outside with enough air flow. An ASHP contains a fan so makes a low background noise. ASHPs are usually

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positioned at the side or back of a property. Inside will be a unit containing pumps and hot water. They are less disruptive than ground source heat pumps, as they do not require digging.

How do they work?

ASHPs use the same technology as refrigerators, but in reverse:

1. The ASHP absorbs heat from the outside air into a liquid refrigerant at a low temperature.
2. Using electricity, the pump compresses the liquid to increase the temperature.
3. It then condenses back into a liquid to release its stored heat. Heat is sent to your radiators or underfloor heating.
4. The remainder can be stored in your hot water cylinder. You can use your stored hot water for showers, baths and taps.

Why might I need to replace my radiators?

Heat pumps produce heat at a lower temperature than a conventional central heating system so a larger area is required for the heat distribution – meaning bigger radiators may be needed.

How long does the install take?

This depends but installation can take between 3-8 days.

How much maintenance is required?

Maintenance costs for an air source heat pumps are low. They are reliable, work automatically and most will operate for 20 years or more. Your installer should advise on any maintenance required, such as an annual check by you and a service every few years by a professional.

Can I combine my heat pump with other renewable technologies?

Yes. You could combine heat pumps with other technologies to maximise your carbon savings and minimise your energy bills. For example, solar PV could be used to generate the electricity that powers the heat pump, and if this was coupled with a battery, stored power from the PV panels during the day could heat hot water for baths and showers at night.

How loud is a heat pump?

Unless the heat pump is working very hard (i.e. in cold weather or producing high temperature water), you can expect the noise to be a similar volume to a fridge, if you were standing within a couple of metres. You could easily hold a normal conversation next to it, without raising your voice. As it gets colder outside, this noise will increase while it's operating, but should still allow you to hold a conversation easily, only raising your voice a little.

Does a heat pump produce hot water?

Standard ASHPs don't provide hot water on demand like a combi boiler.