

Residential Consumer Advice

1. Your property

There is a heat pump solution, possibly more than one, for almost every home in the UK, regardless of age, size or construction. Identifying the best technical and financial solution in every case requires some careful thought because the heat pump sector in the UK is young and rapidly developing.

It is vital to recognise that heat pumps are different to the gas, oil and LPG boilers that homeowners are familiar with, but burning fossil fuels for heating and hot water has to stop completely for the UK to reach Net Zero by 2050. It is also really important to appreciate that almost all homes have heat pumps already. Families have relied on heat pumps to keep milk fresh (fridges) and peas frozen (freezers) for decades. Air-conditioning in cars and homes is another form of heat pump and heat pump tumble dryers are increasingly common.

Whilst not a prerequisite for a successful heat pump installation, ensuring that your home is as well insulated as is practical, taking a fabric first approach, usually contributes to obtaining the best value for money. In some situations, minimum energy efficiency standards are a requirement to access government financial incentives.

Installing loft and cavity wall insulation, along with draft-proofing for all doors and windows, is usually relatively straightforward and represents excellent value for money.

Installing double- or secondary-glazing can be effective but may be costly, with relatively long pay-back periods. Similarly with internal and external wall insulation.

Ground floor insulation, usually combined with under floor heating (UHF) is very effective in new properties but can be a costly retrofit investment.

With all insulation and energy efficiency measures a step-by-step approach is perfectly reasonable. It is not necessary to do everything at once. Having a planned programme of improvements can spread costs.

Being located in a Conservation Area, Area of Outstanding Natural Beauty (AONB) or having a Listed property may constrain insulation measures and some consents may be required.

2. Where to get advice

Many familiar outlets provide information on heat pumps. These include the Microgeneration Certification Scheme (MCS), The Energy Savings Trust, Which?, Citizens' Advice, The Carbon Trust, YouGen, central & local government, electricity suppliers and electricity distribution network operators (DNOs). However, these bodies are not specialists in heat pumps. More specific advice is available from the heat pump trade bodies, the Heat Pump Federation, Ground Source Heat Pump Association (GSHPA) and Heat Pump Association (HPA).

Technology independent advice is available from the MCS which provides installation standards for all heat pump types, solar thermal, biomass boilers, solar photovoltaics (PV), battery technology, wind turbines and micro combined heat & power (CHP).

3. Choosing a heat pump installer

The trade bodies and many heat pump manufacturers have lists of installers on their websites. In most cases, these are not technically vetted so, in itself, a listing is rarely sufficient. However, registration with manufacturers and support for trade bodies does usually suggest a stronger level of experience and responsibility. Trade bodies and manufacturers also provide high level technical support to members and to registered installers.

Certification for an installer under the MCS scheme is a mandatory requirement to access most government financial support and may be an insurance requirement. There are two ways which installers can operate with MCS compliance. Either the business is individually certified (the MCS website has a searchable listing) or the installer can operate under an MCS umbrella scheme. These are usually provided by the manufacturer, distributor or training body with which the installer is affiliated. It is important for the homeowner to understand which type of MCS cover is being offered. Certification under MCS also provides the homeowner with cover under one of the two recognised Consumer Codes. These provide certain financial protections (e.g.: for deposits) and can assist homeowners with contractual problems.

Selecting a heat pump installer needs more consideration than choosing a plumber to replace a boiler. This is merely a reflection of the relative maturity of the two technologies. Do not feel too constrained by geographic location. Most experienced heat pump installers cover wide territories. Instead, take the time and care to identify an installer you feel you can trust. Apart from registration and certification, talk to friends, family or associates who have had heat pumps installed and look for recommendations.

The specification and design of a heat pump system has to more closely match the demands of the house than with a fossil fuel boiler, so careful attention has to be given to determining what these are. A qualified heat pump installer will do this for you but it is prudent to ensure that key areas are covered and appropriately explained to you.

A simple installer selection check list should include (in no particular order):

- Check for experience with your type of property and requirements
- Confirm memberships, registrations and certifications
- Check for financial stability
- Is Professional Indemnity insurance cover in place (ask to see certificate prior to entering into contract)
- Ask for and take up references
- Is deposit protection provided?
- Agree arrangements for final payments and training on system use
- Consider including a surveillance visit six months after commissioning (could be remote if Internet enabled)
- Ensure that all warranties are registered, etc. Check for potential extended warranties
- Service contract options & on-going UK-based technical support (ideally product selected will have widespread service options for secure future support)

More technical discussion points could include (again in no particular order):

Discuss design conditions rather than relying solely on MCS Standard conditions (temperatures in the home, etc. Inform prospective installers of special weather conditions such as your location being in a frost pocket)

Is the heat pump Internet enabled for improved servicing and trouble-shooting? (Who monitors this and is it chargeable?)

Are any licences or consents required? (It is the home owner's responsibility to obtain these, but most consumers would expect robust advice from the chosen installer)

Is the existing electricity supply capable of supporting the heat pump and future EV charging (is an upgrade to supply required)?

Are the existing heat emitters suitable? (Radiators, UFH, fancoils, trench heaters – all, including combinations, can be compatible with effective and efficient heat pump operation if correctly sized)

What temperature will the radiators be compared to previous fossil fuel boiler set up?

What is the best control strategy for my needs?

Is cooling required? If so, does this impact on technology choice and how is the cooling to be delivered into the house?

Is the projected financial modelling at reasonable utility costs for electricity and the displaced fuel type?

Am I getting sound advice on electricity tariffs?

Should time-of-use electricity tariffs be considered and, if so, how does this influence system specification and operational guidance?

Should I get a smart meter? These are not a prerequisite for heat pump deployment but, where fitted, should be SMETS2 specification

4. Which heat pump?

The selection of appropriate heat pump type depends on a range of factors including:

Total heat demand (peak power in winter and annual energy usage)

Availability of suitable space for an external air-source heat pump unit

Availability of suitable space for a ground-source heat pump collector array (horizontal or vertical)

Availability of a viable water resource (water-source only)

Space inside the house

Combination with other technologies (e.g.: hybrid heat pump systems or solar thermal systems)

Incoming electricity supply

Current fuel type (this impacts on the potential fuel cost saving)

Personal preference

Budget

5. Applicable Standards (not all are appropriate for all heat pump projects):

MCS MIS 3005 (installer standards)

GSHPA installation standards

Drilling standards

Borehole finishing best practice guidance

TrustMark

6. Potential consents and permissions

Distribution Network Operator (DNO) connection consent (unless the heat pump device is on the Energy Networks Association connect & notify register)

Coal Authority (if drilling in known coal regions)

Planning (unless the project enjoys permitted development rights)
Environment Agency (only needed if using borehole or surface water at a maximum rate above 20,000 litres/day)

7. Fossil fuel design by comparison

Almost all of the guidance above applies equally to fossil fuel boilers, but we have all become so familiar with gas, oil and LPG that we have forgotten the basics. Fossil fuel boiler installers should be applying the same robust design practices but seldom do, opting to use “rules of thumb” instead, which rarely optimises the performance. However, this is likely to change over the coming couple of years, as new installation design standards are introduced for all heating technologies. This will bring fossil fuel design and installation requirements in line with the best practices of the heat pump industry.

This information is provided for guidance only and should not be considered to be any form of guarantee of performance, either of a heat pump system or of an appointed contractor.