

Home guide to heat pumps

Finding an OFTEC registered technician

The OFTEC website enables you to locate your nearest registered technicians by postcode entry. OFTEC registered technicians are appropriately qualified and insured to work in your home. They can also advise on energy efficiency. For further information, please see www.oftec.org

About OFTEC

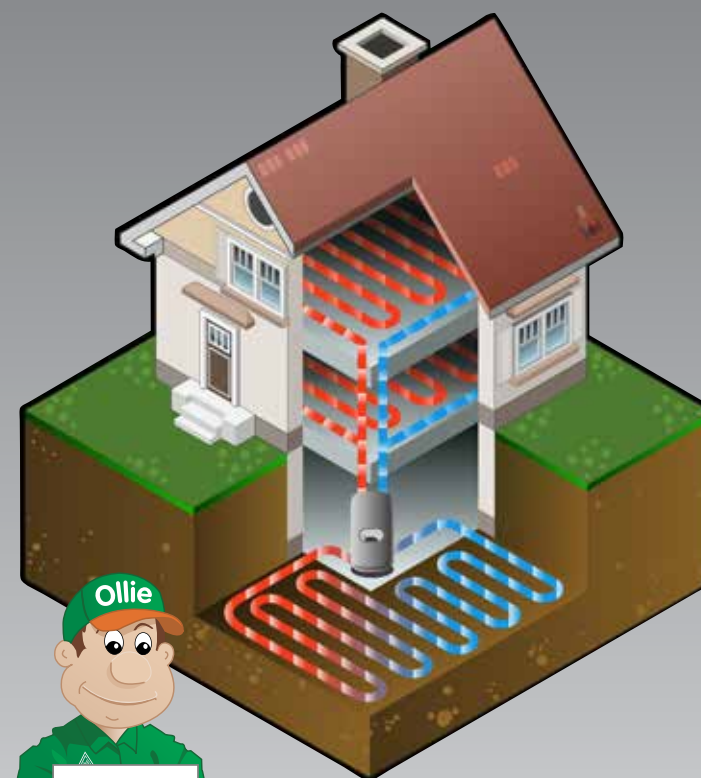
OFTEC plays a leading role in raising standards within the heating industries of the UK and Republic of Ireland. Our trade association represents the interests of oil storage; appliance and supply equipment manufacturers and we develop course and assessment material for training providers. We also operate a UKAS accredited competent person registration scheme for over 8,000 technicians involved in the installation and maintenance of oil, solid fuel, and renewable heating equipment and Part P electrical work. Our online shop, OFTEC Direct, supplies a range of technical books, equipment and clothing products for heating technicians.

installer will be able to provide details of any payment scheme available in your region and any acceptance criteria that you will have to satisfy. There may also be a requirement for the installer and equipment used to be registered with the Microgeneration Certification Scheme (MCS).

You may also be able to claim payments for the renewable element of a hybrid heating system providing the renewable element can be metered.

Maintenance

Heat pump systems require very little maintenance, but should still be checked periodically by an OFTEC registered heat pump installer who should leave written details of any maintenance work done and any observations. He/she may also advise you if there are any steps you could take to ensure that everything is working properly.



OFTEC

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This guide is intended to provide useful information for those considering the use of a heat pump for home heating and hot water production.

Building regulations

For reasons of safety and performance, the installation of heat pumps and associated heating systems is work covered by building regulations and should only be undertaken by competent technicians that have undertaken appropriate training and assessment. In some locations planning permissions may also need to be granted.

Heat pump systems

There are two common types of heat pumps for use in domestic properties:

- Air source heat pumps (ASHP), and
- Ground source heat pumps (GSHP)

Both are similar in design and operation, but as their names imply, an ASHP takes heat energy from the air around it, and a GSHP takes heat energy via large pipes buried in the ground. Having captured heat energy, the heat pump transfers it into a refrigerant gas, which is then compressed to raise its temperature. In the case of traditional water-based

heating systems, water is then passed over a heat exchanger which absorbs the heat from the refrigerant before it is distributed around the heating system.

The heat produced by a heat pump system is generally at a lower temperature than a traditional heating system. This makes them ideal for underfloor heating systems and in properties with low heat demand.

If you are considering a heat pump as a direct replacement for a traditional oil or gas boiler, you should be aware that the output of radiators will be significantly reduced due to the lower temperature of the heating system water. If the heat requirement for the room remains the same, it is probable that the radiators will have to be changed for larger ones to produce an equivalent heat output. Your OFTEC registered heat pump installer will be able to establish the heat requirement for each room to see if this is the case.

Hybrid heating systems

It is possible to combine an oil or gas boiler with a heat pump on the same system to form what is known as a 'hybrid heating system'. This has practical benefits in that the heat pump can be used in milder weather and the boiler can take over, or even run in parallel to the heat pump in the winter, when the building's heat load is at its maximum.

Such systems can be designed using individual off-the-shelf components or a manufacturer may provide a package comprising of a boiler, heat pump, integration components, and a control unit.

System controls

Heat pump systems are typically controlled by the end user via weather compensation or internal temperature control, such as a room thermostat, together with a timer or programmer to control space heating.



Hybrid systems that combine a boiler with a heat pump require more sophisticated controls. Typically, the manufacturer of the system components will provide a dedicated control system that is capable of determining the best technology to use, depending upon a set of pre-programmed parameters such as temperatures, unit cost of energy and equipment performance, to ensure your system is always working as efficiently, and economically, as possible. Your OFTEC registered heat pump installer will be able to offer advice on what controls best suits your needs or the needs of the system.

Government incentive payments

Heat pumps are regarded as being a 'renewable heating technology' in that they harness energy from the environment, thus reducing the reliance on fossil fuels to meet our home energy needs. The net result being a reduction in carbon dioxide emissions released to the environment – a contributing factor in global warming.

In some regions, government incentive payments are available to offset the high upfront cost of installing renewables technologies. Your OFTEC registered heat pump