



## Ground Source Heat Pumps

### Use the warmth from the ground to heat your home or business

Ground source heat pumps circulate a mixture of water and antifreeze around a loop of pipe called a “ground loop” which is buried in your garden (or within a borehole). The water/glycol fluid absorbs heat from the ground as it circulates passing through the loops. The fluid then passes into the heat pump, of which there are three main parts.

The Evaporator takes the heat from the water in the ground loop (often around 12°C). The Compressor then moves the refrigerant around the heat pump and compresses the gas refrigerant to the temperature needed for the heat distribution circuit. The Condenser finally gives up heat to a hot water tank, which feeds the distribution system, which could be underfloor heating, oversized or low-surface temperature radiators. The required operating temperature of your heat pump will depend on your heat distribution system.

Our ground source heat pumps and underfloor heating systems are a common choice, as we’ll be able to provide an efficient primary source of heating, just operating at flow temperatures as low as 35°C.

The efficiency of a ground source heat pump is measured by a coefficient of performance (CoP) – the amount of heat it produced, compared to the amount of electricity required to operate it.

A typical CoP for a ground source heat pump is around 4.0 or 400%, but again this will vary depending on the level of insulation within your property and the type of heat distribution system you intend to have.

### Key features & benefits:

- **Renewable Heat Incentive:** significant savings can be achieved using ground source heat pumps, under the government’s new scheme the ‘Renewable Heat Incentive’ (RHI) allowing for an annual pay back rewarding those who invest in qualifying technologies.
- **Reduce your fuel bills:** ground source heat pumps run on electricity, so there’s no need to pay for other more expensive forms of heating using gas, oil or other solid fuels.
- **Cut down on wasted electricity:** heating your home with a ground source heat pump is much more efficient than other conventional heating systems.

