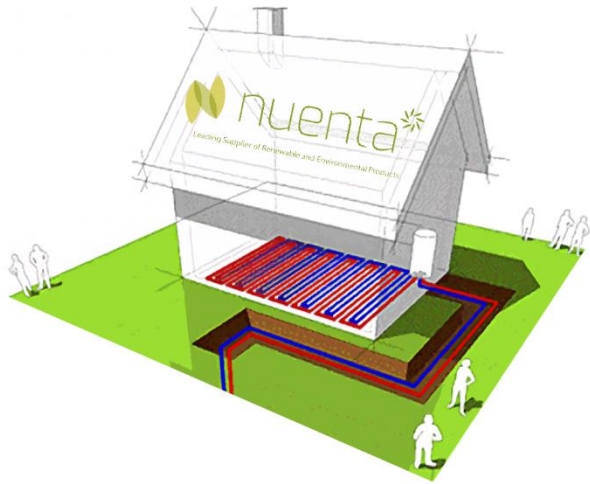


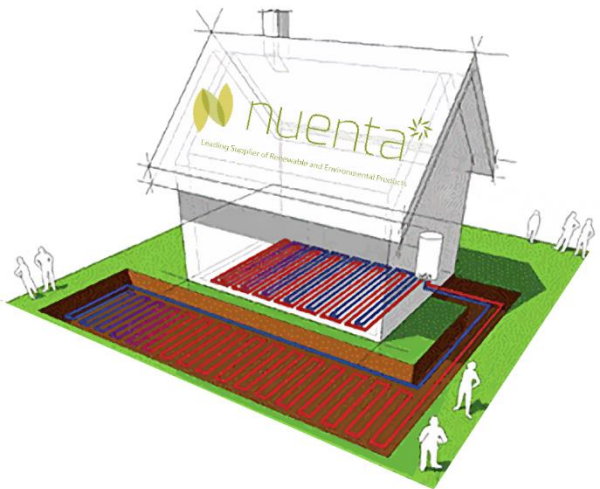
Ground Source

What is a ground source heat pump?



A ground source heat pump uses electricity to capture heat from the ground outside of the home and draw it inside. Sometimes they're referred to as ground-to-water heat pumps, which can heat water for hot taps and showers. If so, the hot water is stored in a hot water cylinder.

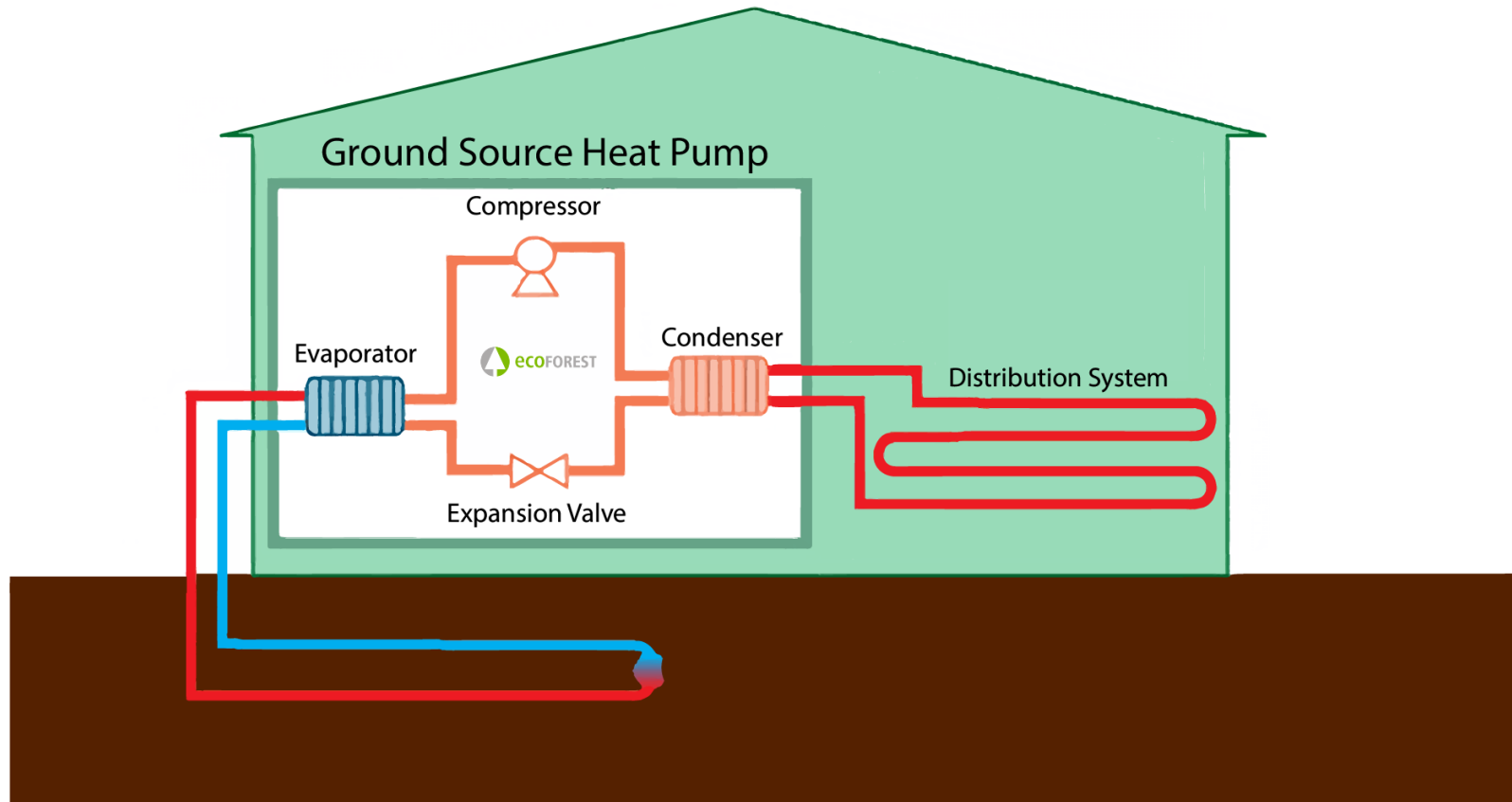
With such a heat pump, you would also need to install a loop of pipe buried outdoors.



You would then find thermal transfer fluid (water and antifreeze) around the coil, which can either be a long or a coiled pipe buried in trenches. Long loops are often called probes, inserted into a borehole spanning a diameter of 180mm.

Naturally occurring heat underground is absorbed by the fluid. The fluid then passes a heat exchanger and travels to the heat pump. The process raises the temperature of the liquid first, which is then transferred to the water.

How does a ground source heat pump work?



Ground source heat pumps are so efficient that for every 1kW of electricity used to power the system, around 4kWh of heat energy is produced. This marks an efficiency of 400%. With an efficiency that good, it's clear how you could save significantly on your utility bills.

FAQs

What are the advantages and disadvantages of a ground source heat pump?



Energy efficient
Supplies renewable energy
Reduction in your carbon footprint
It provides both cooling and heating



You need a trusted installer
Installation costs
Requires sufficient outdoor space

What are the advantages of ground source heat pumps?

- **Energy efficient** – The energy output is far greater than the energy required to run the system.
- **Supplies renewable energy** – As GSHPs absorb heat from underground, there's no requirement for traditional gas boilers.
- **Reduction in your carbon footprint** – The system produces no carbon emissions. They're a perfect choice if you're looking to lessen your footprint or create a more carbon-neutral home. If you power a GSHP using a PV array, your heating system won't produce carbon emissions.
- **Provides both cooling and heating** – You rarely find a heating system that can supply both in residential properties. The technology can cool using a reversing valve which changes the direction of the fluid.



What are the disadvantages of ground source heat pumps?

- **You need a trusted installer** – In comparison to traditional heating systems like gas boilers, we don't have as many installers trained in this specific tech as we would like to see. To feel confident in your choice of installer, check out our [installers page](#).
- **Installation costs** – The installation is more costly than traditional heating systems. There is an investment requirement. However, there are government grants available to help.
- **Requires sufficient outdoor space** – You will need a garden to install the pipework underground. We can advise on any situation and are always up for a challenge.

Do ground source heat pumps work in winter?

The frost and cold weather predominantly affect the topsoil. Therefore, your pipework underground will go unaffected. Ground source heat pumps continue to work as usual in the colder months.

Do ground source heat pumps heat radiators?

You may need to fit appropriate radiators, as they tend to be larger to deliver the correct flow temperatures, but otherwise, yes!