

# **Ground Source Heat Pumps:- Supply and Installation Services**

## **Ground Source South West**

Ground Source South West are a trading division of Aquasource (SW) LTD formed to provide Ground Source Heating Service to businesses and individual house holders throughout the South West of England. We have applied our expertise in water borehole drilling and groundworks to this new and exciting sector.

We carry out all drilling and ground works required for both horizontal and vertical ground collectors for renewable energy companies.

We only install individually factory tested and certificated PE100+, Crack Resistant Loops. in our boreholes with quality control an important aspect of our work.

We also offer a complete GSHP package in partnership with selected renewable energy companies and can arrange for the design and installation of complete Ground Source Heat Systems. We can integrate the Ground Source Heating with underfloor heating in most properties. Please contact us for details.

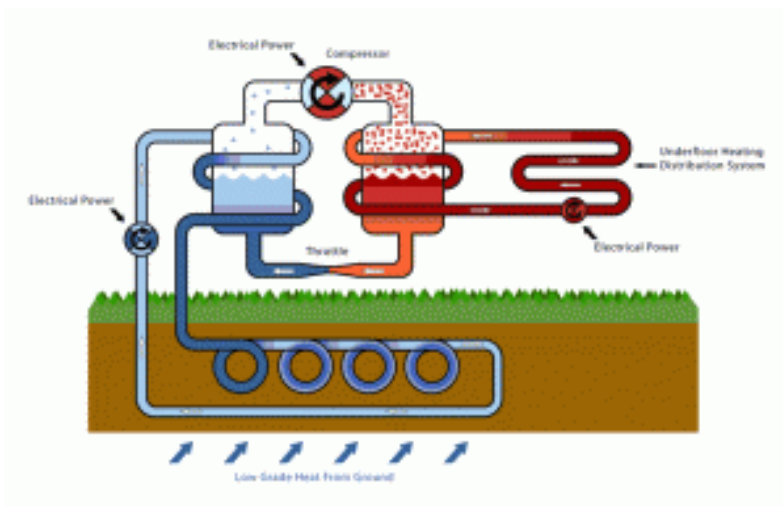
### **What Are Ground Source Heat Pumps**

The ground beneath our feet is like a giant heat storage battery which maintains a nearly constant temperature throughout the year. A heat pump exploits this natural phenomenon by using the ground to supply heating to your property. A water/antifreeze solution is circulated through

pipes in the ground and extracts heat. This is then upgraded by the heat pump to a usable temperature to heat the building.

The technology in the Ground Source Heatpump itself is very similar to that used in the refrigeration and air conditioning industries. Because of this in a well designed system up to 3kW of free heat from the ground can be obtained for every 1kW of electricity used.

The exchange of heat with the ground can be achieved by the installation of horizontal pipes in trenches (slinkies) or vertical pipes in boreholes.



Working Principle of Ground Source Heat Pumps



## **Horizontal or Vertical Collectors for Ground Source Heat Pumps :- Slinkies or Boreholes?**

Slinkies :- The trenches are typically 30-50m long and 1.2 to 2m deep.

Boreholes:- Crack resistant HDPE pipes are installed in one or more boreholes, drilled to a typical depth of 75-100m . These are then grouted in place.

<b>Horizontal Collectors:- Slinkies</b>	<b>Vertical Collectors:- Boreholes</b>
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Slinky Install in Cornwall



Groundsource Drilling in Cornwall

One or more coils of Polyester pipe are laid in trenches and the ends brought back to a manifold before connecting to the heat pump.

One or more near vertical boreholes are drilled and PE100RC pipes installed and grouted into place. Pipework is brought back to a manifold before connecting to the ground source heat pump.

Advantages :- Cheaper to install.  
Disadvantages:- Large area of land required. Large amount of disruption and reinstatement required.

Advantages:- Much Smaller footprint on site. Much less reinstatement required.  
Disadvantages :- Typically greater cost.

The pipe work from the slinkies or boreholes is brought to the exterior of the property. Using a flow and return manifold the pipework is then condensed down to two pipes .

Please click [here](#) for a more comprehensive review of the different systems available.

# Costs and Benefits of a Ground Source System

Systems can cost from £6000 for a small property and will attract government support through the newly extended RHI Scheme.

## **What is the Domestic RHI?**

**The Domestic Renewable Heat Incentive (RHI) grant is for ground source heat pump installations by self builders, homeowners and social landlords.**

Its purpose is to compensate for the cost of installing a ground source heat pump, providing a long term rate of return and fast payback.

End users will also benefit from the significant fuel cost savings brought with the installation of a safe, reliable, sustainable and renewable technology, providing a generous total benefit.

The Domestic Renewable Heat Incentive (RHI) is a UK Government financial support scheme for renewable heat. It is targeted at, but not limited to, off gas grid households.

Click [here](#) for more details on the RHI scheme .

Use the government's online calculator [here](#) for a free estimate of the likely returns

For more information on Ground Source Heating or a free quotation please email [roger@groundsourcesw.co.uk](mailto:roger@groundsourcesw.co.uk) or phone 01209 862874



Ground Source Heat Pump  
Drilling for a Commercial  
Venture