

Geothermal (ground Source heat pumps)

There is no doubt that ground source heat pumps are extremely efficient. We do offer them. But be aware, efficiency of the machine is only part of the story.

Ambient temperatures.

The advantage of a ground source HP is that the collection (Ground input) temperature is very stable

A ground source collector in NZ will typically pick up stable collection temperatures between 10 to 13 degrees C.

This is highly advantageous in colder climates but In many parts of New Zealand ambient air temperature will average a similar figure in some areas higher! So in effect any cold night time is countered by the warmer part of the day. With equivalent input, an Air source heat pump is just as efficient as Ground water at the Heat pump.

Circulation of the ground loop.

An additional circulating pump is required to circulate water in the collection loop this pump can draw anywhere from 0.6 to 1.2KW depending on the load. This adds a significant energy use which is often. Remember also that not all ground is good for collection Wet and sandy offers the best collection – Dry and stony the least effective

Higher Capital and installation costs.

A ground source heat pump may cost around 10 to 15% more than an air to water heat pump. The ground loop components and circulating pump could add another \$1000 plus the contractor cost to install the loop. The additional cost could be well over \$3000. It is highly likely you would not see payback on the additional outlay within the life of the appliance.

Maintenance.

A ground source heat pump has a greater amount of components and therefore more potential maintenance costs. The ground loop will also require a filter which will require regular cleaning.

Our advice.

A ground source heat pump may be worth considering if you live in an extremely cold area. Otherwise you have nothing to gain over Air to water. If you do require a ground source unit we are happy to offer a price and further guidance.