

# Geothermal heating research paper examples

[Environment](#), [Electricity](#)



## 1. Introduction

The geothermal is the type of ground energy, which is used to produce heat by using the earth's geothermal heat. This type of energy is being drilled in the particular place on the earth. The geothermal heating is the direct type of geothermal energy. Humans have some advantages on the Geothermal heating. 28GW of the geothermal energy is currently presented in our earth. The thermal efficiency is high because no energy originates from the heat retained within the earth from the original formation of the earth. The high temperature energy is used to originate from the tectonic plate boundaries. It can be found with the temperature higher than the target temperature. The ground water can be found with the temperature higher than the target temperature. More than half of the geothermal energy is being used for the space heating and the other entire are being used for variety of industrial purposes. The geothermal energy can be benefit from the economic point of view. The space heating power is often distributed to the multiple building. The direct geothermal heating is better than the geothermal heating and it is less temperature dependent. The steam under pressure is being used as the deep geothermal resource is also been used to generate electricity from the geothermal power.

The geothermal resources are used in many ways, some resources are being used to generate electricity and some resources are being used for heating application. The effective use of geothermal resource is necessary for reducing the use of the non renewable energy resources.

## 2. Geothermal Heating

The Geo- thermal works by the principle of the heat transfer mechanism

using the naturally available renewable energy. The temperature of the earth's crust is the heat source. In heating mode, the approximately 50 to 60 degree of the heat is available in the deep earth. The refrigerant fluid is the medium, which is used to carry the heat from the ground to the required place. The refrigerant fluid is circulated in the copper building inside the deep base. The natural heat is transferred to the refrigerant fluid to the systems' compression, in which the fluid is compressed. Thereby, it is used to raise the temperature and pressure. It transforms the nearly 55 degree of temperature and over 100 degree F. The hot refrigerant is then circulated through the tubing with an air handler. The air absorbs the heat. The hot air is transported to the room via fan. The ground supplies the heat for free. The geothermal heat pump works with a conventional heat pump using the high pressure refrigerant to capture and move the heat between the indoor and the out. The difference in the convection system acquires the heat. The temperature inside the deep of the earth is constant 50 degree C. The geothermal heat pump just takes only one kilo watt hour of electricity using the geothermal heat. The geothermal system are twice more efficient than the top rated air conditioner and almost 50% more than the gas furnace. The advantage is that there is no need for the noisy outdoor fan and it passes more air through the compressor coil. Most of them are with 10 years of warranty.

## **Benefits and Disadvantage of Geothermal Heating**

The advantage of the geothermal heating is low heating costs; the cost saved is more than 80% compare to the fossil fuel. It is also using the electricity than the good heating systems. The geothermal uses the earth's

heat than the renewable energy resources. The geothermal energy is more efficient than the gas furnace and even 75% more efficient than the oil furnace. There are some low levels of the air pollutants. There is also some uniform heating. Geothermal only heats the house, but it cools the wall. The uniform heating is achieved with the help of the geothermal energy; means there is no cold and hot spots. The main disadvantage of the geothermal energy is on high installation cost. It also requires the big land for the horizontal installations. The installation of the geothermal is quite tough so it is necessary to hire the certified installer; the cost is more than the regular installations. The geothermal is not the 100% clean energy source. The geothermal heat is used in many ways one in form of power generation and another in the form of heating. The installation cost of the geothermal energy is one of the biggest disadvantages on the energy sources. The careful installation is required for any form of energy.

The installation cost of geothermal heating is about \$70, 000; it is recommended to reduce the installation cost. Once the cost gets reduced, then it is easy to find this system in the market

## **Conclusion**

The geothermal energy is used in different form; this paper speaks about the particular form of energy that is geothermal heating system. The heating system is always recommended to use in the effective way to save the energy of our earth.

## References

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