

Geothermal/Ground Source systems capitalize on the solar energy stored year round just beneath the earth's surface. This free geothermal energy is an unlimited, renewable resource. The lot surrounding a typical suburban home contains 10 times more energy than is required over an entire heating season. And this resource is constantly replenished by the sun, the surrounding earth and heat rejected while the geothermal/ground source system is cooling in the summer.

According to an EPA study titled "Space conditioning. The Next Frontier" (Report 430-R-93-004), the Department of Energy and the EPA recognized geothermal systems as the most environmentally friendly, cost-effective and energy efficient heating and cooling technology available. So you can make a significant contribution to a cleaner environment while saving up to 60% on your home's energy bills.

Geothermal/Ground source heat pumps help electric utilities achieve significant reductions in their peak demand loads. By reducing the demand on electric utilities, the need for new power plants is reduced, along with a reduced need for natural resources like coal or gas used to generate electricity. These systems also minimize the threats of acid rain, air pollution, the greenhouse effect and global warming problems directly linked to the burning of fossil fuels. A typical 2,500 square-foot installation with a geothermal/ground source system saves the electric utility company from having to burn more than nine additional tons of coal a year compared to an electric resistance heating system. And this savings increase with larger installations.

In fact, for every 100,000 residential units installed, more than 37.5 trillion BTUs of energy used for space conditioning and water heating can be saved. This represents an emissions reduction of about 2.18 million metric tons of carbon equivalents, and cost savings to consumers of about Rs. 33750 million over the 20- year life of the equipment.

Geothermal /Ground Source heat pumps strengthen Security of "Nation ". Every 100,000 homes with geothermal / ground source heat pump systems reduce foreign oil consumption by 2.15 million barrels annually and reduce electricity consumption by 799 million kilowatt hours annually.

Geothermal/ Ground Source units utilize some of the same technology found in your home's refrigerator. They are both devices that move heat energy. A refrigerator removes heat from food. A geothermal system / ground source removes heat energy from the earth to heat your home and removes heat energy from inside your home to cool it.

Both technologies rely on a scientific principle that states energy (heat) flows spontaneously from an area of high concentration (hot body) to an area of low concentration (cold body) "Heat flows from hot matter to cold matter. Never vice-versa. It's why ice cubes melt on a hot day, and why boiling water cools after you remove it from the stove. Energy/heat wants to naturally disperse, and it will do so unless hindered by an outside force.

This applies to geothermal heating and cooling systems. In nature, the ground serves as a giant solar collector, storing heat energy a few feet below its surface. Here, temperatures remain very constant and moderate, unaffected by fluctuating outdoor temperatures. Energy is exchanged using a series of pipes buried below the earth's surface (closed loop), placed in a pond (pond loop), or with well water (open loop).

In addition to being a smart choice for residential installations, many commercial and institutional buildings can utilize geothermal/ground source heat pumps including offices, retail, hotels, apartments/condos, resorts, schools, hospitals, assisted living centers and manufacturing facilities.

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