

## The Sensible Environmentalist

(NAPS)—**DEAR DR. MOORE:**  
**I've heard that I can lower my utility bills by tapping into energy that exists in the earth below my house. How does that work?**



Dr. Moore

Considering the cost savings, it's surprising that more people aren't familiar with geothermal energy, which is simply solar energy that's absorbed into the earth. Any homeowner can tap into the stored energy beneath their home.

Although air temperatures fluctuate, temperatures just a few feet underground remain relatively constant at 45 to 70°F, depending on latitude. By installing a ground source heat pump (also known as a geothermal heat pump or GeoExchange system), homeowners can use this energy to heat and cool their homes and meet some or all of their hot water requirements.

The system includes a main unit (about the size of a typical furnace) that's connected to a loop of durable piping installed underground. In winter, a water solution is circulated through the pipes, absorbing geothermal heat and pumping it into the home. In the summer, heat

is extracted from the home and pushed back into the earth.

Ground source heat pumps cost more to install than other systems (though prices are coming down), but the investment is recovered quickly. According to the U.S. Environmental Protection Agency, they're about 40 percent more energy efficient than air source heat pumps, 48 percent more than natural gas furnaces and 75 percent more than oil furnaces. This translates into utility bills that are 30 to 50 percent lower than conventional systems. Among their other benefits, they also significantly reduce emissions of carbon dioxide and other pollutants.

As a sensible environmentalist, I believe in using renewable energy and materials wherever possible. Ground source heat pumps are a way for individuals to make use of a naturally renewable, nonpolluting energy alternative, while at the same time reducing costs. For information and a list of models that meet U.S. Energy Star guidelines, visit [www.geoexchange.org](http://www.geoexchange.org).

*Dr. Patrick Moore has been a leader of the environmental movement for more than 30 years. A co-founder of Greenpeace, he holds a PhD in ecology and a BSc in forest biology. Questions can be sent to [Patrick@SensibleEnvironmental.com](mailto:Patrick@SensibleEnvironmental.com).*