

# Geothermal Energy a Good Investment?

## Should you install a geothermal energy system in your home?

Six to ten metres below the earth's surface, the temperature is no longer influenced by weather changes and remains constant at 8-10 degrees. Geothermal systems use heat pumps to take advantage of this by heating cool air in the winter and cooling warm indoor air in the summer months. A home or condo building that utilizes geothermal systems can look forward to reducing their heating and cooling costs by [50-60%](#).

### Kinds of Geothermal Systems

There are several kinds of geothermal systems and a professional can help you to choose the one that suits your property best.

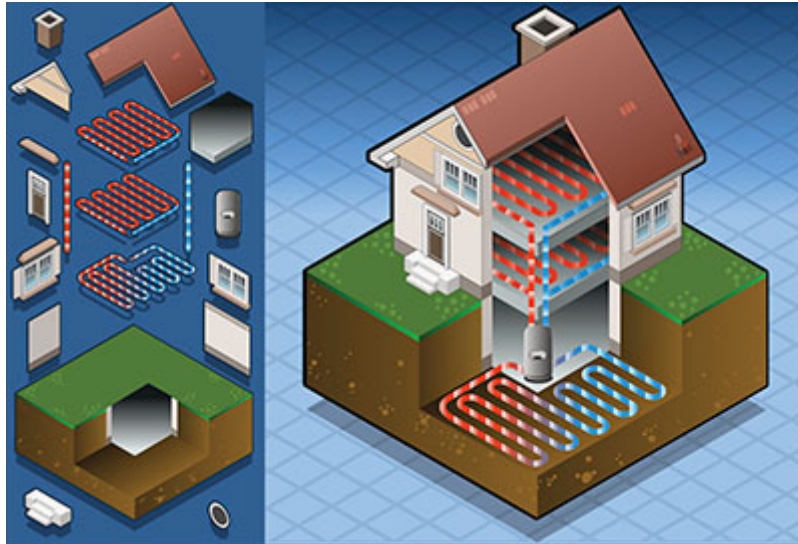
**Closed Loop Systems:** These systems have continuous loops of [underground piping](#) that are filled with anti-freeze liquids that transfer heat from the ground to warm your house in winter. In the summer, this process is reversed and heat from the home is transferred underground to be cooled. Closed ground loop systems can be installed either vertically or horizontally depending on the size of your property.

**Horizontal loops:** Here pipes are laid in trenches that vary in length from [100-400 feet](#). These trenches can only be used with larger properties.

**Vertical loops:** Where the residential space is limited, vertical loops provide the perfect solution. Here the pipes are laid in vertical trenches that are 75 to 300 feet deep.

**Pond (lake) loops:** Properties that have bodies of water can use them to heat or cool the home. Where bodies of water are present, there is no need for excavation and coiled pipes are placed at the bottom of the lake or pond.

**Open loop systems:** These are the most [economical systems to install](#). Here ground water from an existing source, like a well or a pond, is heated from below the earth and pumped up through the house where it provides heat.



Geothermal systems are an excellent way for homeowners to reduce their carbon footprints and save money on new builds. By installing a geothermal system, you can prevent about [five tons of greenhouse gases](#) from entering the earth's atmosphere every year and that's about the same as a small family car.

The costs of geothermal systems vary wildly from province to province and home owners can expect to pay anywhere between [\\$45,000-\\$70,000](#) for a residential system. These systems are [expensive to retrofit](#) and may not be a good investment if it's not a new build as they have a long-term return on investment. The environmental benefits are still there, but if you are considering a retrofit, a more robust building envelope or a solar installation may provide a better investment.

If you are considering buying a condo, look for a building that [uses geothermal energy](#). While residential homes can benefit from a geothermal system, the real savings come when this renewable energy source is used in bigger projects like condos.

You can check if your province offers incentives for geothermal installations using the website [here](#). When considering features or renovations that will give you the best return on your energy-saving investments, use our [home energy savings calculator](#) to find where to get the best value for money.

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