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## Geothermal Heating 'Rocks' in Sweden



*Pfizer maintenance engineer, Stefan Eriksson in front of his geothermally heated home*

A maintenance engineer for Pfizer Global Manufacturing in Strågnäs, Sweden by day, Stefan Eriksson of nearby Åkers styckebruk is committed to reducing his carbon footprint on his off hours. Eriksson, who is responsible for Pfizer's Global Reliability program at the site, also plays a role in the company's efforts to reduce carbon output and energy use.

So when it came time to update his old oil-based home heating system, it was only natural that he chose to take a more eco-friendly route: converting to geothermal. Despite the need to drill through 130 meters of solid rock, geothermal proved to be the most cost-effective of the environmentally-friendly systems he evaluated.

"My old oil-based heating system was costly to run, so I decided to replace it with a system that is environmentally friendly, cost-effective and has a reasonable payback period," said Eriksson. After considering several options, including solar, Eriksson's best option turned out to be geothermal energy.

Eriksson has been able to reduce the amount of carbon emissions that result from heating his residence by a remarkable 95 percent. Eriksson's old oil-based system burned approximately 925 gallons (3,500 liters) of oil per year— producing the equivalent of 9.4 metric tonnes of CO<sub>2</sub>. The geothermal system uses 6,700 kWh of electricity per year, which translates to just 0.3 metric tonnes of CO<sub>2</sub> in Sweden.

The system took about one week to install at a total cost of approximately \$18,600. With an operating cost of just \$970/year, the new geothermal system operates at a small fraction of the \$5,000/year Eriksson's old oil burning system cost. Eriksson estimates payback in approximately five years.

"The system is also very reliable, and maintenance is less costly and complex than the oil system I replaced," said Eriksson. The system has been in operation for four years, and Eriksson says the only maintenance issue was a minor replacement of a \$57 temperature indicator.

Aside from costs, Eriksson recommends geothermal, especially in his location in Sweden. "We have really cold winters here with temperatures that can drop as low as -13 degrees Fahrenheit (-25 degrees Celsius)." Eriksson says that many of his friends and neighbors have invested in geothermal heating systems. However, he recommends that anyone interested in geothermal heating first speak with several providers.

Eriksson says he's quite satisfied with his geothermal investment. "If I had to do this project again, I would absolutely choose geothermal energy, it's economical to run and environmentally friendly," adds Eriksson.