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Geothermal heat pumps trendy, save energy

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In desperate numbness, perhaps clutching crumpled utility bills, Southlanders fight winter and its annual wrath of snow and ice.

Fueled by the often-freezing temperatures and rising costs to battle them, there are the home remedies - plastic sealant over windows - to help keep warm.

Isolating heat in one room or buying corn- and wood-pellet-fueled stoves are other methods creative homeowners turn to in an attempt to stay warm without accumulating a massive utility bill, said Bob Vogl, Illinois Renewable Energy Association president.

"They can be a good, relatively low-cost option for consumers to save money and help the environment at the same time," said David Kolata, Citizens Utility Board executive director. "We're getting more and more interest from customers. The fact that there's an environmental component as well makes it sort of a win-win."

Homeowners who installed the systems in 2008 are also eligible for a tax credit, thanks to a clause in the mortgage bailout bill. Taxpayers can get a credit for 30 percent of the cost of their geothermal systems, up to \$2,000. Even without a tax incentive, experts say the geothermal systems are their own financial reward over time.

"Your yard is a bank," said Denise Feliszak, who along with her husband Bob, created Tinley Park-based Air-Ease Geothermal Heating & Cooling. "You're able to take your energy from your yard and bring it into your home."

Shortly after the Feliszaks started up Air-Ease, a similar energy crisis in the early 1980s prompted some people, as a recession is doing now, to think about energy alternatives that might lower their heating costs. The Feliszaks installed their first system 20 years ago and experienced sporadic interest in geothermal heating systems in the years since - until now.

This year, the company has installed 12, its all-time high.

"There was a period of time we didn't do any," Feliszak said. "Now that everybody's so concerned with how expensive it is, people are looking for alternatives."

The Energy Department says Air-Ease's recent spike in business is part of a trend. The agency, which tracks shipments of geothermal heat pumps, said more than 63,000 were shipped in 2006, compared with about 48,000 in 2005 and 44,000 the year before that.

The national Geothermal Heat Consortium estimates about 75,000 were installed this year. That's part of a 10 to 15 percent increase the group has seen in the past three years. The consortium also said geothermal systems make up about 1 percent of the heating and cooling market. While the housing market has stalled, commercial installations continue to become more popular, according to the consortium.

For Mark and Denise Baker, a geothermal system was just one part of the building of the their "dream home" in Joliet.

"From what we learned, our bill should be about a quarter to a third of what it would be to heat that house conventionally," Mark Baker said. "We don't want to be paying outrageous fuel prices in the future."

The geothermal system works because underground water is always a constant 53 degrees, no matter the

season - freezing or frying - said Bob Feliszak, who is heading up the installation of the Bakers' home.

The water travels through underground tubing into the home, where it goes into a compressor, which sends water to a tank that heats it to about 120 degrees for wintertime.

Hot water can be sent through tubing snaked through the various floors in the home, called radiant heat, or air warmed by the hot water is sent up through ducts in a home, like a forced-air heating system.

The system is renewable, continually reusing groundwater in and out of the home, and it also uses a small amount of electricity in comparison with traditional furnaces.

While the Bakers are jumping onto the trend, Craig Detjen can be considered a geothermal pioneer. His first system was installed nearly 25 years ago in his Beecher home.

"I wasn't with the times, definitely; I wanted to try something different and newer," he said.

Three years ago, Air-Ease installed an updated system in his home for \$5,000 to add newer and better technology since his first venture.

Detjen estimates he's saving one-third of his previous bill, which provided for savings already, and that it will pay for itself in savings in five years. The system, he said, will last about 20 years, and a permanent filter he had installed allows him to skip buying new filters in exchange for rinsing it out every now and again with a hose.

Price and knowledge of the subject are largely what stand in the way. Many of the installations done by Air-Ease are for architects and engineers.

Detjen's system was on the low end of the geothermal price tag scale that generally starts at about \$15,000. Much of the cost is in digging wells outside a home, and Detjen had already dug his own pond from which water is run in and out of the home. The Bakers' system cost \$95,000, but they also added extra features, such as the radiant heat through the home's flooring.

"It is new and it is expensive," Denise Feliszak said. "As more and more people demand this type of system, we're hoping it will bring the cost down."

But they pay for themselves in a fairly short amount of time - the Feliszaks estimate six years - and save about half of what homeowners pay for heating and cooling now.

"I believe it's the way of the future. I did back then, and I still do," Detjen said. "It wasn't that efficient back then, but they've improved the technology and efficiency so they're worthwhile. I'm hoping that everyone jumps on the bandwagon."

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Ways to save

If you're trying to save energy with a traditional furnace, here are some tips from the Citizens Utility Board:

- Set water heater to 120 degrees.
- Cover water heater with an insulating blanket.
- Clean or replace furnace and heat-pump filters monthly or as needed.
- Caulk leaky windows and seal up largest air leaks.
- Properly insulate an attic.

- Close doors to rooms not in use.
- Install compact fluorescent lightbulbs that use 75 percent less energy.
- Buy EnergyStar appliances to cut bills by 15 to 30 percent.
- Use a programmable thermostat to regulate heat and lower bills when not at home.
- Only run a dishwasher when it's full; turn the heated drying option off.
- Clean refrigerator coils and make sure doors are sealed tight.
- Turn off computer when it's not in use.
- Use the "sleep" mode on home office equipment not in use.
- Schedule a professional home energy audit with a utility company, local community organization or heating and air conditioning business.

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