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Welcome Home

Southeastern Wisconsin Living Magazine

Genevan Gothic

Divine revival amidst pagan vogue

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TALKIN' GREEN

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What is a 'geothermal utility' and what's in it for me?

What if you could heat and cool your home with a Geothermal Utility BTU system instead of buying gas and electricity? A Thermal Purchase Agreement is the first step to accomplishing this as well as lowering energy bills. Let's face it, you want heating, cooling and hot water, but today's utilities require you to purchase equipment that is powered by electricity or natural gas which then converts these fuels into the usable thermal energy you want.

At present, the cost for your thermal energy is impacted by two main factors:

1. The installed cost of the furnace, air conditioning unit and hot water heater. There is also the annual maintenance, repairs and replacement in about 8-10 years. Isn't it fun owning a home?

2. The cost of the fuel - whether you use natural gas or electricity. Of course the efficiency rating of the equipment that converts the fuel into thermal energy has a huge impact on your monthly cost. Most new systems are rated 80% efficient or higher, but the higher the efficiency, the more expensive the unit. Homeowners also have no control over the actual cost of fuel. We are all at the mercy of the utilities' prices. In fact, as everyone puts in more efficient equipment and uses less energy, the gas and electric utilities raise their rates.

A geothermal HVAC system is a real solution that can save energy and help the budget. This renewable energy system is great for the environment, and reduces the load on the national electric distribution system; however, it is one of the least used green technologies today - probably due to the initial cost.

Geothermal heating/cooling systems use electrically powered ground-source heat pumps to take advantage of the earth's thermal capacity



and constant 50-55 degree temperature. The thermal pipe loop consists of 4- to 6-inch wells drilled 300 to 600 feet deep that hold a water-based solution. Typically the vertical or horizontal wells for the geothermal system represent about 55% of the total cost of the installation. The heat pump relies on the stable underground temperatures and uses it as a thermal energy source in the winter and a place to dump and store excess heat in the summer to provide cooling. A geothermal system is generally 40 to 70 percent more efficient than conventional heating and air conditioning systems.

Geothermal Utility

Solar electric panels once had a high investment cost like geothermal HVAC that kept them

from becoming main stream until long term investors realized they could purchase the solar panels and then sell the electricity to the consumer at a slight savings to the local utility. The solar companies basically became a little electric utility. Although geothermal HVAC is growing worldwide (about 3 million systems installed) the concept of a geothermal utility might be the thing that takes it mainstream. With a geothermal utility, you purchase the thermal energy for heating, cooling and hot water at a discount from the local gas and electric utility cost with No Investment. Typically this option provides a 10% savings for the customer on the energy in addition to maintenance savings. A geo-utility also frees up the CapEx budgets to be used for other projects. This option though, is typically reserved for larger users that consume thermal energy 24/7 such as a resort, hotel or hospital. The second option for non 24/7 users including residential is for the building or home owner to buy a geothermal heat pump and hook up to the geothermal utility's thermal pipe loop and wells.

Just like the gas or electric utility, you pay a monthly meter fee plus an energy charge; however, you can save up to 30% on energy costs. Currently there is available a 10% commercial Investment Tax Credit (ITC) and a 30% residential ITC. Since the thermal loop and wells have a life span of 50 years or more, they are similar to other utility infrastructure like pipelines and electric power lines. Since the geothermal utility capitalizes and invests in providing the thermal loop, it lowers the cost of entry for consumers while proving a long term investment return for the geothermal utility itself. And just as we saw in the growth of solar when the cost was greatly reduced or removed, we expect geothermal utilities to power the growth of this technology.

Fritz Kreiss is President of Alternative Utility Services, Inc.; a nationwide licensed energy aggregator and consulting company for municipalities and commercial businesses. He has been involved in energy procurement and the field of sustainability for close to twenty years, with expertise in alternative energy development, including the development of Community Virtual Solar Gardens nationwide.

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