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Dow Jones 8,207.63

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S&P 500 843.76

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Building a company from the ground down

Geothermal heating and cooling systems can save you plenty in fuel costs

Dave Halliday, Special to The Journal
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Partners who began their careers as farmers now are looking to the earth for clean energy and business success.

Darren Winczura and Brian Vitek are partners in Alf's Geo and Drilling, a company that installs geothermal heating and cooling systems, drills water wells and tests water wells for the oil industry. The geothermal side of the business is showing strong potential for growth.

"Interest and demand is ever increasing with the economical advantages and the push for cleaner and environmentally friendly choices people are moving towards," the partners said.

"We can see this being our main and/or only business in the near future."

They said that interest in geothermal has grown from this time last year. In addition, a recent open house also provided a boost to the business.

In its simplest form, a geothermal system uses a heat pump to extract heat or cold from the earth and uses it to warm or cool living space.

The energy transfer is made possible by a water-antifreeze mix circulating through green plastic tubing buried in the ground or submerged in a lake or large pond. For example, when warmth is extracted from the fluid, it's transferred to the living space either through a forced-air or hot-water system.

GeoSmart Energy of Cambridge, Ont., supplies the geothermal units Winczura and Vitek install for their customers.

Whether it's a hot-water or forced-air unit, sophisticated microprocessors control the main functions of the units.

Stan Marco of GeoSmart said the units should have a 25-year lifespan, similar to furnaces in conventional heating systems.

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However, the green plastic tubing has a projected lifespan of more than 350 years.

"By packaging the very best components available, you can be confident that your home will have a system that fits your needs and provides the lowest operating cost, best comfort and most reliable heating and cooling system on the market," Winczura and Vitek said.

Although a geothermal system will double the bill for electricity, there are substantial savings for heating and cooling, depending on where in Canada the installation is made. In Ontario, the saving would be 60 to 70 per cent on a typical heating bill, compared with 35 to 45 per cent in Alberta due to cheap natural gas here.

Geothermal heating does not burn any fuel, resulting in a substantial saving on fuel costs. Geothermal systems take advantage of the fact that the ground is always several degrees above freezing. The heat pump extracts heat or cold from the ground, depending on whether heating or air conditioning is needed.

However, geothermal is not cheap initially, costing \$20,000 or more to install. However, a geothermal system provides both heating and air conditioning where conventional systems require installation of separate heating and cooling units.

A \$3,500 grant is available to Alberta homeowners from the federal government for retrofit geothermal installations. Other provinces match the federal grant, and utilities in those provinces may also offer a grant. In Ontario, grants could total as much as \$10,000.

Winczura and Vitek said that last year they handled a roughly equal number of new installs and retrofits. The majority were on acreages and farms.

The economics often look better for farms and acreages because of the high costs the property owners may face, for example, to have a natural gas line installed. Instead of spending thousands on a gas line, the property owner might decide instead to put that money towards a geothermal installation.

Farms or acreages have the space for a horizontal loop of tubing, while an installation in the city would likely need vertical loops due to the restricted space. Horizontal loops are buried in trenches dug for the purpose, while vertical loops are inserted into holes drilled by the company's drilling rig.

"Depending on the size of the project and the number of units installed, the average 1,400-square-foot home with a horizontal loop can be complete in about three days," the partners said.

"A vertical loop depends a lot on the type of drilling conditions."

They said tougher drilling conditions could add one to three days to the job.

Winczura took over the business in 1988 from his father, Alfred, who founded Alf's Drilling in 1975. When Vitek joined the business as a partner in 2006, the name was changed to Alf's Geo & Drilling.

When necessary, they hire part-time help, and their families also participate in the business. Vitek is still farming with a mix of grain and cattle. Winczura farmed up until 2004, then solely operated Alf's Drilling.

The partners are certified installers under the Canadian GeoExchange Coalition.

"In this business, we both believe in what we are doing and are hands-on from start to finish," they said. "We also pride ourselves on great service which we believe is as important as the equipment we sell."

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