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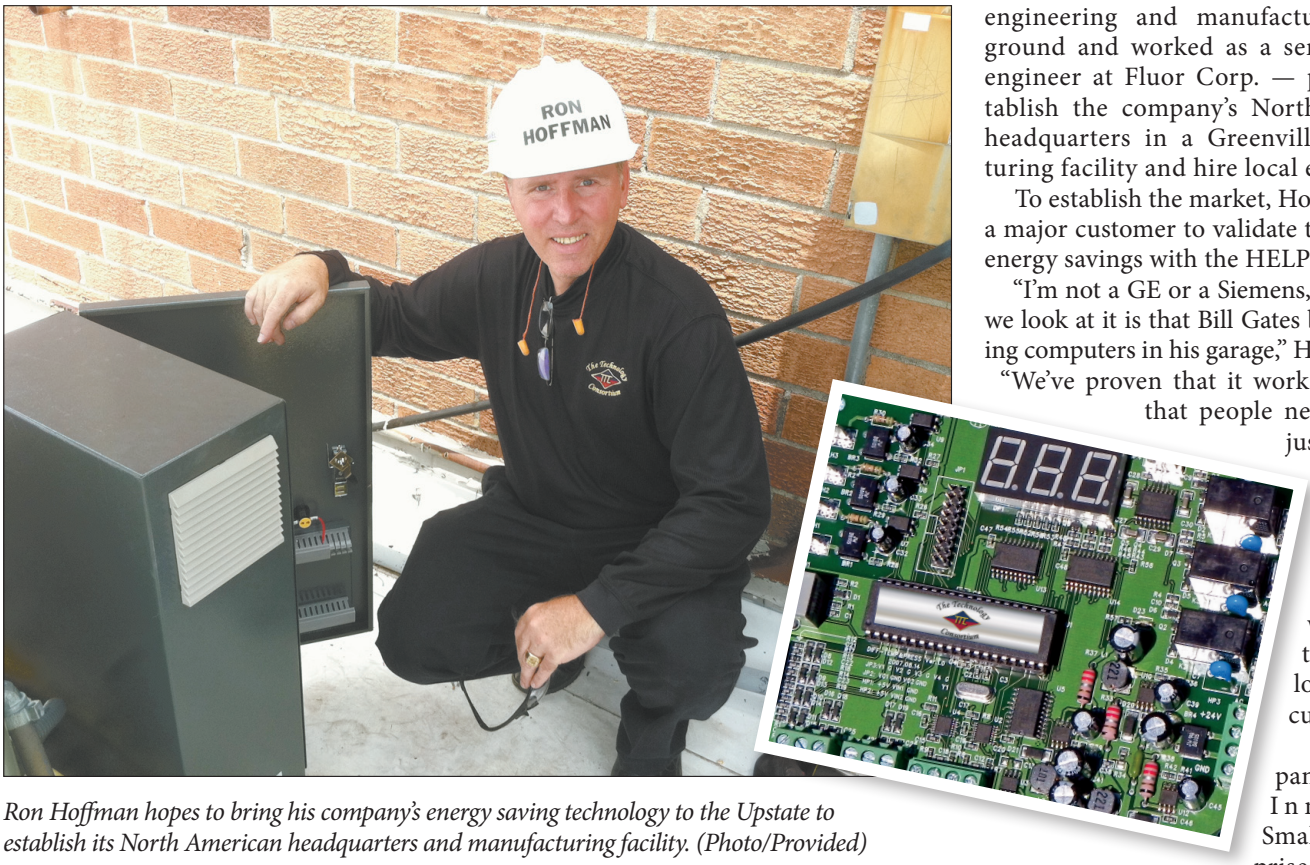
Entrepreneur offers energy savings option



Ron Hoffman hopes to bring his company's energy saving technology to the Upstate to establish its North American headquarters and manufacturing facility. (Photo/Provided)

by **Liz Segrist**
lsegrist@scbiznews.com

The Technology Consortium of Piedmont is waiting for its first big break.

President and CEO Ron Hoffman established The Technology Consortium Ltd. in 2007 as a design and engineering services and consulting firm in Greenville.

He then expanded in 2009 to include the HELP System, which stands for High Efficiency Local Processor. It can create energy savings for companies.

Hoffman discovered the smart microprocessor technology for the HELP System during a business meeting.

The Technology Consortium then gained the exclusive rights to develop and distribute the HELP System technology in North America from its Taiwan-based manufacturer.

The smart microprocessor, the only proprietary component of the HELP System, can improve efficiencies and increase energy savings on the drives used to control industrial and commercial motors, such as those in air conditioning units, pumps and fans.

Once the Upstate and North American market is established for this microprocessor, Hoffman plans to bring the technology to Greenville and begin manufacturing it locally.

Hoffman — who has an extensive engineering and manufacturing background and worked as a senior project engineer at Fluor Corp. — plans to establish the company's North American headquarters in a Greenville manufacturing facility and hire local employees.

To establish the market, Hoffman needs a major customer to validate the potential energy savings with the HELP System.

"I'm not a GE or a Siemens, but the way we look at it is that Bill Gates began building computers in his garage," Hoffman said. "We've proven that it works. We know that people need it. We're just waiting for that first big break. Once we get that, we'll ride that into a lot of other customers."

The company won the InnoVision Small Enterprise Award in 2010 and had its first domestic installation of the HELP System at Ashland Inc. in Piedmont in 2011.

"Forty to 60 potential clients as well as the Department of Energy, and Department of Defense, are now considering the HELP System, he said."

How it works

The HELP System turns equipment into demand-controlled variable speed operations. The system operates motors based on need, not time, which substantially reduces the amount of energy and costs wasted by previous systems.

By using the HELP System's smart

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SAVINGS, *continued*

microprocessor, a small green solid-state computer control board, and its algorithm, motors can achieve between 30 and 50% of energy savings as they reach their efficiency potential.

"We took something that was well established and made it better by controlling it to a finer resolution," Hoffman said.

During the installation, the retrofit, turn-key equipment enables the motor to be operational in less than an hour with no replacement of existing equipment. Hoffman said the HELP System will reduce power consumption, maintenance and operational costs.

It can be used on all air conditioning, or HVAC and HVAC-R Systems, cooling tower pumps and fans, chiller pumps, air-handler fans, boiler feed-water pumps and any three-phase motor with a varying load.

As for the HVAC applications, the technology can be used on anything non-residential. Restaurants, retailers, schools, malls and manufacturers are just some examples.

Hoffman said he needs to target restaurants more, in addition to manufacturers, since the small-business owner is usually the one personally writing the utility checks.

Growing pains

The Technology Consortium is dealing with the "chicken or the egg" conundrum. The manufacturing facility can't be established without an established market, but the market is difficult to establish without local manufacturing operations already in place.

Some customers are apprehensive since few companies use it, while others are wary since the numbers seem too good to be true, Hoffman said. There are also issues, for some, stemming from purchasing from an overseas manufacturer.

The company struggles with visibility and publicity of its product. It is developing the North American market from its own budget.

"We still haven't gotten to the tipping point for someone to show it's great," Hoffman said.

To enhance visibility and credibility, Hoffman needs one larger customer to use the system and see the potential energy savings.

Hoffman is the only employee currently. He is looking to hire employees in the future, as well as interns from Clemson University for sales and marketing with the potential to have a future position with the company.

First customer installation

The HELP System was installed late last summer in Piedmont at Ashland Inc., a global provider of specialty chemicals and technologies for automotive, construction, energy, personal care, pharmaceutical and water treatment markets.

The system cost around $3,000 to install on Ashland's office HVAC unit, said Jim Mulkey, the Ashland facilities and maintenance manager. The system saved up to roughly 30% on energy for Ashland, according to a Duke Energy study of the system on the building.

The installation costs vary by facility and use. The return on investment can be seen within 24 months.

The Ashland corporate office continues to look into other applications for the system, Mulkey said, such as pumps and motors.

"As far as operation, you can't tell it's there. It maintains room temperature like it's supposed to, but it saves energy and will save us a lot more money and energy in the summer months," Mulkey said.

The technology has been certified and accredited by the SGS Group, an international certified conformance testing company for customer installations. The HELP System also qualifies for Duke Energy's SmartSaver Incentive Program, which reduces the cost of equipment.

The Technology Consortium is a tier-one supplier to the Defense Alliance and APEC, or the Advanced Power & Energy Cluster.

The HELP System works like cruise control

Industrial and commercial motors — such as those in air conditioning units, pumps and fans — have been controlled by Variable Frequency Drives, or VFDs, for more than 30 years. These early VFDs were the best possible way to reduce energy consumption by 10 to 20%.

VFDs are like the gas pedal on a car, enabling speed control and improved fuel economy. These early VFDs depended on a pre-programmed set of parameters to control the operation of the motor.

This required a unique "program" to be developed for each process being controlled, which resulted in additional costs to develop and incorporate the program. It also limited the efficiency of the VFD controlled motor.

The HELP System is like cruise control on a car. The smart microprocessor is operated by an embedded algorithm which does not require any programming.

This algorithm is a more efficient and accurate method of controlling the output of the VFD and optimizing the efficiency of the system. The HELP System operates motors based on need, not pre-determined program parameters.

The smart microprocessor and algorithm technology of the HELP System will eliminate between 30 and 50% of the energy that motors are currently wasting.

This is a direct savings in energy cost as well as better motor and process control, lower equipment wear and less maintenance. HVAC users can also expect less temperature fluctuations and decreased humidity.

SOURCE: The Technology Consortium