

# Local energy management technologies starting to gain traction in global intelligent power market

But widespread consumer and business adoption of smart-grid software awaiting initiatives from government and utilities to fill in the gaps of grid connectivity

CURT CHEREWAYKO

A few weeks ago, Pulse Energy Inc. spotted an anomaly in power use at one of its client's facilities.

The Vancouver company's energy visualization software subsequently sent an e-mail to the building manager, who discovered that a third-party contractor had disabled part of the building's automation system.

Because the contractor forgot to flip a switch before he left, the 12-storey complex was consuming an additional \$150 worth of power at night while it was vacant.

The problem could have gone unnoticed for months, but Pulse, whose software tracks a building's energy consumption, spotted it in a day.

It has other case studies of buildings running inefficiently because of human error or a lack of information about a facility's energy consumption.

"Those sorts of things – \$150, \$200 a day – that can go on for a month or six months and nobody notices," said David Helliwell, Pulse's co-founder. "It happens all the time because nobody's paying attention."

Pulse's software and other energy-visualization and management technologies are starting to penetrate the North American market.

"We're in hundreds [of facilities] right now," said Helliwell. "Whereas, a year ago, the whole market for



David Helliwell, co-founder, Pulse Energy Inc.: the City of Vancouver is using Pulse's energy visualization software to reduce energy consumption at city facilities

energy visualization software was probably around 100 buildings total."

Many of these emerging technologies are founded on the fact that, while new facilities are being built to meet modern sustainability standards, older buildings are the real power hogs.

B.C. players such as Pulse, Energy Aware Technology Inc. and SmartCool Systems Inc. are hitting milestones in their development cycle, but they're among the many energy management companies waiting for government and large utilities to fill in the gaps of the so-called smart grid.

On the smart grid, power transmission is overlaid with digital data to make the grid

function much like an electrically charged computer network.

The three B.C. companies have essentially developed the intelligent end-points of the smart grid, but large utilities and government are still working out the high-level policy required to connect the entire smart grid.

Vancouver-based SmartCool (TSX-V: SSC) manufactures a module that reduces energy consumption in refrigeration and air conditioning systems.

The company, whose technology optimizes the run time of compressors in refrigerator and AC systems, is expanding its international customer base and has sold more than 26,000

units worldwide.

Similar to Pulse, Vancouver's Energy Aware has developed a technology for passively monitoring energy consumption.

Unlike SmartCool's system and other active systems that increase energy efficiency, passive monitoring systems don't get inside an electrical system and make adjustments.

They instead collect information and rely on the consumer, the building manager or other technologies to make the adjustments needed to increase building energy efficiency.

"We think that increased awareness [of] how much you're spending on electricity is enough to motivate most people to do something about it," said Colin McKerracher, Energy Aware's director of sales and marketing.

The company's PowerTab energy monitor is designed for residents to use in homes, while Pulse and SmartCool are targeting industry and larger facilities.

Pulse has doubled its headcount to 40 employees this year (it had only three employees in 2007), doubled its sales in the last two quarters and raked in \$8.5 million in provincial and federal grants since April.

The University of British Columbia is slashing about \$500,000 off its energy bill annually by using Pulse's software in 100 buildings on campus.

The U.S. Department of Energy's Lawrence Berkeley

National Laboratory in California, which is considered a thought-leader in the energy management and smart grid technology fields, is also using Pulse's software.

It's expected to release academic reviews of the technology in the coming months.

VANOC will use systems from Pulse and Energy Aware in Olympic Games venues during 2010 to promote the Games' sustainability goals.

The City of Vancouver announced last week that it's installing Pulse's software in

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- Gregor Robertson, mayor, City of Vancouver

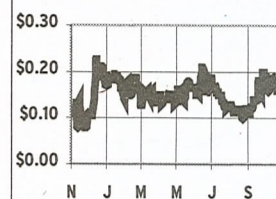
eight of its older facilities.

Vancouver Mayor Gregor Robertson said the deal is part of the city's initiative to become the world's greenest capital.

"We can't afford to do the massive retrofits at the pace we need to do them," said Robertson at the opening of Pulse's new headquarters in downtown Vancouver this month.

## SMARTCOOL SYSTEMS INC.

(TSX-V:SSC)



Vancouver

CEO: George Burnes

Employees: N/A

Market cap: \$7 million

P/E ratio: N/A

EPS: (\$0.13)

SOURCES: STOCKWATCH, GLOBE INVESTOR

"We have great leverage and great opportunity with energy management software."

Pulse is part of a Cisco Systems Inc. initiative to bring together the many players required to make the smart grid work at a national level in the United States.

Energy Aware has bid on contracts that are part of BC Hydro's project to implement a smart grid in B.C., but the project is still in the bid-selection process.

McKerracher said Energy Aware needs BC Hydro to roll out its own smart meter technologies before Energy Aware's wireless monitor can be used in B.C. homes.

"A lot of our business is in the United States, where some of the smart grid implementations are going faster, and in Australia, where they're also moving quicker than they are here in B.C." ■

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