What's in a big idea

How Canadian energy innovation centres are tackling the challenges of change

by Brian McLaughlin

WHEN IT COMES TO INNOVATION, sometimes it's the little things that make the biggest differences. For instance, take the simple premise of Ontario's promotion of the Green Button initiative: to standardize energy data across all utilities. It may not sound like a radical idea, but the campaign — an initiative that first arose in the U.S. — gave 60 per cent of Ontarians the power to better manage their energy use and save money. And it did it for less than $1 million.

That's the type of progress Canadian energy innovation centres are striving for: impactful, affordable changes that make tangible differences. The challenge is that big change usually takes big money and time. Canadian innovation centres, however, are developing strategies to overcome these obstacles.

"We don't adopt industry technologies quickly enough," says Ron Dizy, managing director for the Toronto-based Advanced Energy Centre, noting that the Green Button initiative, which was launched in November 2012, is an example of the way things should be done. "At AEC, we're focused on rapid adoption of innovation technologies," says Dizy.

In its efforts to tackle the barriers to such fast-paced change, AEC has identified 23 reasons why energy systems are slow to evolve in Ontario — though the results are undoubtedly applicable nationwide. The challenges include misaligned economic incentives, a risk-averse culture and system complexities such as the multiple utility ownership structure in Ontario. Sometimes it's as simple as mismatches between needs and what's being invented, notes Dizy. Regardless, AEC reports that executives at Ontario utilities are eager to innovate quickly. And one major key to doing so is creating effective public-private partnerships.

Indeed, AEC was founded in February 2014 with funds from the Ontario government to develop innovative technological solutions such as the Green Button campaign, and to spur economic growth and job creation. According to Dizy, the best way to leverage Canada's interesting energy industry technologies is through effective public-private partnerships; the AEC, he says, is a particularly effective example when it comes to energy innovation.

Case in point: in Atlantic Canada, Colleen Mitchell, president of the Atlantica Centre for Energy agrees with Dizy's take on the importance of public-private partnerships. Atlantica encourages sustainable energy sector growth in Atlantic Canada, Ontario and Maine by connecting multinationals, such as Siemens, environmental engineering start-ups, such as Fundy Engineering, and schools, such as the University of New Brunswick, with local communities. The Atlantica Centre for Energy has had success partnering large global corporations such as GDF Suez, a French multinational electric utility company, with smaller companies in Atlantic Canada. The centre aims to develop and enhance innovative mindsets by creating such partnerships.

The logo for the Green Button campaign, an innovation that standardizes data across utilities, now used in Ontario.

In Canada's West, Alberta Innovates - Energy and Environment Solutions, is another group that leverages the power of public private partnerships. Backed by the province, the group searches for innovative ideas relating to energy and the environment and connects them with the private sector — but it doesn't stop there. "When working with industry, we're working as a true partner, not just a funding organization," says CEO Eddy Isaacs. The group is hands-on, he says, and monitors a project from the application writing stage to finished product, providing expert advice at each stage.

One such project involved working with scientists at the University of Sherbrooke in Quebec and the city of Edmonton to design a plant that coverts garbage into biofuels such as ethanol. After 12 years, the commercial-scale plant is operational and the group has also opened a testing facility that allows them to continuously test the technology for future applications. But, Isaacs says, despite many successful projects, the major hurdle with innovation is still funding, which is one reason why by looking for national and international partners they are able to take on more projects.

Back in Ontario, the province has already been capitalizing on its innovations. It has begun exporting its knowledge and expertise by implementing the Green Button program with South American utility companies wishing to introduce a similar initiatives. Little steps, sure, but ones that seem to be creating a culture of big change.

The evolution of innovation

Slated to open in the spring of 2015 in Toronto, multinational tech giant Cisco's Internet of Everything innovation centre will further foster local innovation and economic development. One of four international research and development hubs, though more are in the works according to Cisco, the IoE facility in Toronto will boost the city's tech credibility with its planned investment of up to $100 million over 10 years. The centre will help start-ups, established companies and entire industries, and explore what's possible with Cisco technologies, while fostering Canadian-based innovation.