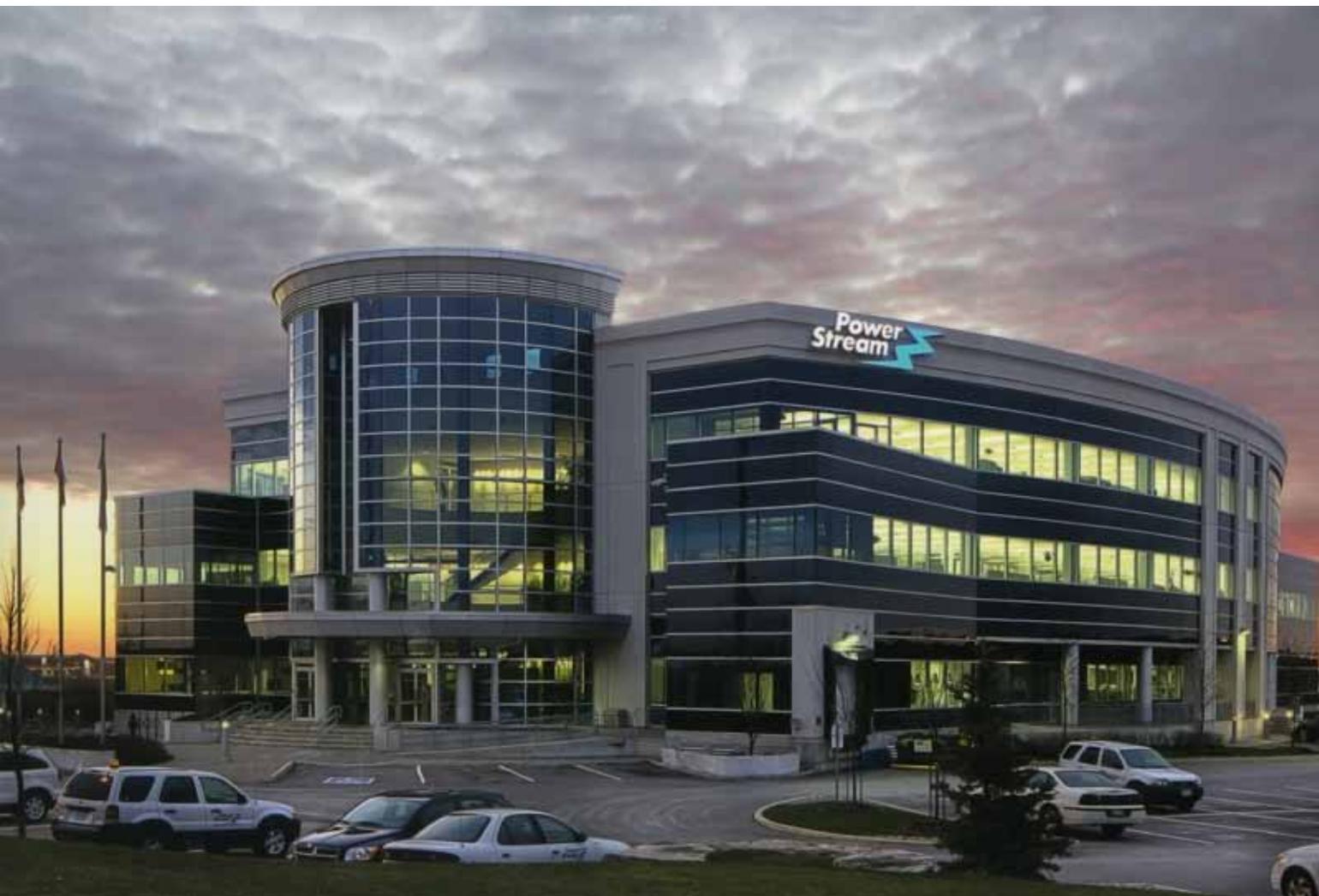


PowerStream

SKATING TO THE PUCK





PowerStream

SKATING TO **THE PUCK**

PowerStream is a relatively recently formed energy supply company but it has already shown the way to leverage new technologies and business models in the interest of the customers and communities it serves

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PowerStream
maintenance crew

Deregulation (better described as re-regulation) came later to Ontario's energy sector than for example to the UK where it happened in the 1980s. The Energy Competition Act of 1998 (ECA) had as its ultimate goal the creation of a competitive market in the electricity and natural gas industries. Before then the power utilities supplying Ontario were discrete bodies located in various municipalities and in the years immediately following the act there was a frenzy of acquisition in the province, with Hydro One, one of the successor companies to the former provincial utility Ontario Hydro, buying up no more than 80 municipal utilities. In the cities too this was a good opportunity for other municipal utilities to come together to benefit from advantages

services provider, not just a larger electricity distribution company." It was, and remains to this day, the largest voluntary merger between municipal electric utilities in Ontario.

2004 might seem recent enough but the energy landscape has changed more in the last decade than in the half century preceding the birth of PowerStream. Technology is a huge part of that, and the biggest change has been the introduction of advance metering infrastructure (AMI), or smart metering systems of which more later. Today PowerStream taps into Ontario's diversified generation fleet, from which coal has been eliminated but which includes a balanced mix of nuclear, hydro and natural gas with a small but significant element of wind and solar.

But consumer choice and expectation have

“We’d like to get a little bigger and achieve additional economies of scale”

of scale in preparation for the new realities of the sector. To the north of Toronto, the municipally-owned utilities in York Region were no exception. Three utilities, Markham Hydro, Hydro Vaughan and Richmond Hill Hydro came together under a joint board, at which point it became clear that here were significant synergies of capital planning, operations and advocacy to be had if these utilities were brought together.

Reporting to that board sat Brian Bentz, now President and Chief Executive Officer of PowerStream, the company created by the merger of the three utilities in 2004. “We had identified a number of synergies and made our business case,” he recalls. “We were aiming to take around 15 percent of costs out of the combined utility to create value, with the vision of building a full energy

both changed, especially around reliability and electricity pricing, says Bentz. The merger allowed PowerStream to grow big enough to specialise and invest in innovation and new technology, while staying small enough to be nimble; to move and adapt quickly, he says. “We’d like to get a little bigger. We have around 400,000 customers now, and would ideally like to be larger to achieve additional economies of scale.” Over the course of the last decade PowerStream has nevertheless been able to make real progress towards identifying and meeting the expectations of its customers. Customers in every community served by PowerStream have seen some rate benefit as a result of the merger, and some have seen distribution rates come down by a third. Reliability has improved and technology has given the



“We offer conservation and demand management programs to residential and business customers”

citizens a taste at least of the benefits that it is certain to deliver going forward. “We have implemented a 24/7 System Control Centre with state of the art technology leveraging our AMI system, understanding where outages occur by monitoring meters and voltage in real time, having automated distribution on the system, as well as automated switches and a SCADA system that integrates with all of these systems.”

There is a cost to innovation and installing new technology but there would be no change

if no risk were taken. The most important investment, he says, is of time and commitment on the part of PowerStream’s people in changing their focus and approach. “It is leveraging what we have now, and learning the art of the possible. Getting people to think from the customer’s point of view making best use of the building blocks we already have in the system. The question to be asked is, how can we change that value proposition to our customers and think of new ways to provide new energy solutions for consumers?”

Bentz's vision is for PowerStream to become Ontario's premier integrated energy services provider by 2020. The foundation is already in place, he says as he checks off some of the achievements to date: "We offer conservation and demand management programs to residential and business customers. We have built on our core distribution business. We have a rooftop solar generation fleet that soon will be delivering between 30 and 40 MW of power. We also operate a sub-metering business administered by a new affiliate

company, PowerStream Energy Services, a subsidiary." To sum up his approach to innovation he turns to an aphorism coined by the great Ontario-born hockey star Wayne Gretzky: "We want to skate to where the puck is going to be, not where it has been!"

Anticipating a 50 percent increase in demand over the coming 15 years, PowerStream is working with all the major energy stakeholders, especially large business customers and developers of residential and commercial property to forecast the shape

"There is no reason why developers shouldn't be planning solutions that will give them greater control over their energy requirements"



PowerStream system control centre



Aerial of solar panels at Barrie

of demand to come. A big new development will no longer just apply to be connected to the grid - it will be offered a comprehensive suite of energy services including conservation, demand management, building efficiency, energy efficiency, energy benchmarking and also energy production. There is no reason, Brian Bentz stresses, why developers shouldn't be planning solutions that will give them greater control over their energy requirements using the technologies now coming on stream. Solar, geothermal and CHP are quite well tried technologies. Battery storage on a project of civic scale and vehicle to grid (V2G) systems, which make sense when a fleet of vans and trucks can be connected to the grid when parked and used as a storage bank, are emerging from the experimental

Did you know?

- 400,000**
PowerStream's current customer base
- 50%**
Expected demand increase in the next 15 years

phase but are close enough to be included in planning.

Pulling these systems together and developing them jointly with commercial partners and communities was the inspiration for PowerStream's Micro Grid initiative which marks the next phase in the company's aim of supporting smart grid development at the provincial level and raising awareness for the need to leverage innovative 'smart' technologies in Ontario's electricity sector. PowerStream will be implementing the Micro Grid in two phases, over a two-year period. In phase one, the demonstration phase, working with GE and other technology partners, the company will draw electricity from existing assets - a solar array, a wind turbine, a natural-gas generator, a lead acid battery and a lithium battery - in order



Vehicle to grid
(V2G) system

“PowerStream’s forward-looking Micro Grid provides a benchmark for utilities across North America and globally”

to provide electricity from loads such as lighting, air conditioning and refrigeration at its head office location.

Electricity generated from this combination of clean and renewable sources will also be used to power the company’s electric vehicle charging stations (which energise the company’s fleet of electric vehicles) and to maintain a steady charge in the Micro Grid’s storage batteries. “We want to demonstrate that we can optimise the use of battery technology, NG generation, renewable sources, and electric vehicles (both charging and potentially discharging the vehicle’s battery back into the load),” explains Bentz. Phase two will see the roll out of what has been learned from what is essentially an in-house operation to commercial customers. The longer term goal, he says, is to deliver packaged, scalable Micro Grid type solutions that can be deployed on a mass scale.

PowerStream’s forward-looking Micro Grid provides a benchmark for utilities across North America and globally, but so does its management of the day-to-day job of keeping the lights on. As an example it has adopted Loris Technologies’ FileNexus enterprise document management technology to help it become more efficient, give better service and push out the boundaries as it evolves organisationally, picking up awards on the way. Most recently, on April 22, PowerStream was named one of “Canada’s Greenest Employers”. A few weeks earlier, the Electricity Distributors



Brian Bentz, President
and Chief Executive Officer

Association (EDA) awarded the company its “Environmental Excellence Award” for the third time in six years, at the same time presenting Brian Bentz with a citation for his outstanding, dedicated service to the EDA and the industry over an extended period of time. In January the company was named as one of the “50 Most Engaged Workplaces in Canada” for 2013 for the second consecutive year, and in 2013, among many other recognitions, it was proclaimed “Smart Community Employer of the Year” in north Toronto. **BE**

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