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Taking Advantage of a Smarter Electricity Grid

Smart grids are moving past the visionary stage. As pilot projects are completed, their results will inform the development of new products and services. We sat down with Ron Dizey, President and CEO of ENBALA, a company that operates a sophisticated smart grid platform for consumers, to ask how consumers can take advantage of a smarter electricity grid.

Q: How will new smart grid systems work with existing energy management systems?

The most impactful of the new smart grid systems will directly integrate with the existing energy management system. A key promise of the smart grid is truly integrating the flexibility of willing and able consumers into the management of the power system. This represents a truly exciting new degree of freedom in how the system is managed - imagine a control room being able to dispatch the flexibility available in how large consumers use power to provide a new tool to help manage the power system. PJM (a system operator that serves over a dozen northeastern states) has already shown how consumers can be registered to deliver Regulation in their commercial markets - fully integrated with their own energy management system.

The opportunity for consumers to participate in the power system is the most exciting (and near term!) opportunity in the "smart grid". By far the most cost effective way of adding control to the power system is to connect existing consumers, with existing flexibility in their operations to the existing energy management systems. This only requires IT solutions that are

available with today's technology. We can provide energy shifting with 100% efficiency - because we can simply adjust when power is consumed, not how much power consumed.

Q: What is the potential for demand response in the business community?

ENBALA has done significant work in evaluating which types of consumers can participate more fully in the smart grid. The good news is that many loads have inherent flexibility in how they consume power - and with an intelligent platform, they can offer this flexibility without any impact on their operations. We haven't even scratched the surface of how consumers can participate in the power system - and many consumers can participate, because an intelligent system can manage their flexibility such that their operational constraints are never violated. This is really the key to much more significant participation by electricity users in the power system - new platforms that can intelligently offer their flexibility to the power system, without really affecting the users. This is the real smart grid.

Q: What are the next steps that businesses can look for as smart grid implementation progresses?

Businesses should always be on the lookout for new opportunities. Managing energy use and managing their own participation in the power system are both ways to lower the overall cost of energy consumption. This truly is a sector that is undergoing significant transformation in structure, pricing, technology and opportunities. Look to participate as soon as practical - and maximize the value you will achieve.

Managing Change

For the sixth year in a row, IESO President and CEO Paul Murphy kicked off the Ontario Energy Network's (OEN) annual speaker series. Paul recapped highlights of the electricity sector in the past 12 months and discussed the impacts of current industry changes and what the sector needs to do to successfully manage the transition. You can read the speech here: www.ieso.ca/OEN2012

Market Information Corner

Ontario is starting to see a slight shift in the off-peak use of electricity. Most of the 2.5 TWh increase in demand over the past two years has occurred off peak.



Power to Ontario. On Demand.

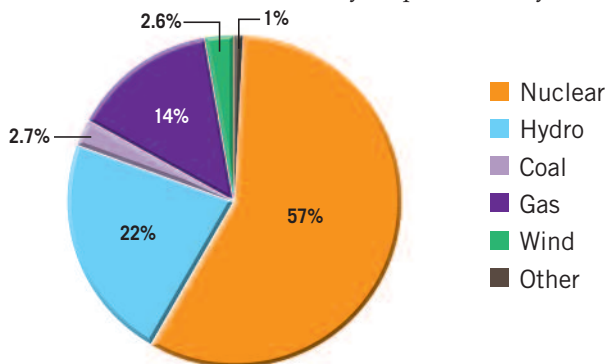
Electricity Market Year in Review

Three trends helped shape the management of Ontario's power system in 2011: increasing production from renewable resources, reduced dependence on coal-fired units, and a more active role for consumers in managing their consumption.

With a total installed capacity of more than 1,700 megawatts (MW) at year-end, Ontario's wind generators are playing an increasingly important role in meeting demand for electricity. Total production rang in at 3.9 terawatt hours (TWh) - up substantially from 2.8 TWh in 2010. November 2011 marked the highest monthly wind output ever seen in Ontario, with production in that month alone exceeding 0.56 TWh. In annual terms, wind generation represented 2.6 per cent of total output across all fuel types of 149.9 TWh.

Production from Ontario's nuclear units continues to supply more than half of Ontario's power needs. Nuclear generation rose slightly in 2011 to 85.3 TWh, an increase of 2.4 TWh from 2010. By contrast, output from Ontario's coal-fired units dropped to 4.1 TWh in 2011, two-thirds lower than it was the year before. After unusually low water levels resulted in reduced hydroelectric output in 2010, production rebounded to 33.3 TWh from 30.7 TWh. Natural gas facilities rounded out the mix, with production of 22.0 TWh, up from 20.5 TWh in 2010.

The table below reflects total electricity output in 2011 by fuel type.



Total electricity consumption in Ontario dipped slightly to 141.5 TWh, down from 142 TWh in 2010. A heat wave in late July pushed peak hourly demand to 25,450 MW on July 21 - a 375 MW increase from 2010's peak. This increase would have been even higher if not for demand response (DR) program participants, which include residential, industrial, commercial and institutional users that agree to reduce their consumption during peak periods with extreme weather conditions. During the peak hour, demand for electricity was reduced by more than 500 MW through various DR programs and pricing incentives.

The total cost of power in 2011 was 7.16 cents per kilowatt hour (kWh), up from 6.52 cents/kWh in 2010. This cost includes the average weighted wholesale market price of 3.15 cents/kWh and the average Global Adjustment of 4.02 cents/kWh.

Electricity Market Forum Completes Work

The electricity market will mark its 10-year anniversary in 2012, providing Ontarians with an open and efficient approach to managing the province's electricity system. Over that time, however, the electricity system has been changing.

In light of this ongoing change, the IESO created a forum to address the future role and development of the IESO-administered markets. With members from across the electricity sector, the Electricity Market Forum began its work in spring 2011. Their examination of emerging issues that impact market activity and the effectiveness of the price signal led to the development of actionable recommendations to improve the market. The Forum recommendations and full report of Forum Chair George Vegh, are now available at:

http://www.ieso.ca/imoweb/consult/evolving_ontario_electricity_market.asp.

Energy Savings Tip

When purchasing or renting new vending machines, specify ENERGY STAR equipment from your vendor. Efficient machines can save 30-50% over older machines.

The IESO is a not-for-profit organization that manages the reliability of Ontario's power system and operates the wholesale electricity market where the hourly price of electricity is set. Through its market education program, the IESO works with consumers paying the market price by creating educational material on the market and providing opportunities for consumers to learn about the electricity sector and how they can better manage electricity costs.

For more information on the IESO's market education program, please contact:

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