

Notes for Remarks

Focus on the future
The Electricity Challenge in Ontario

An Electricity System Perspective

Paul Murphy
President and CEO
Independent Electricity System Operator

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- Thanks very much. I am pleased to be here to present the Electricity System perspective on the challenges facing Ontario.
- For those of you who don't know a lot ... if anything ... about the Independent Electricity System Operator, let me start with a few words about my organization and the role we play in managing reliability of the power system.
- We monitor the demand for electricity 24 hours a day, seven days a week, and dispatch generation to meet that demand. Every five minutes, offers are stacked in economic order, system capabilities are determined, dispatch instructions are issued and the market price is set by the last generator selected.
- As demand climbs, we often have to turn to more expensive forms of generation to meet that demand. That's why it is not uncommon to see higher prices for electricity during a hot summer day.
- Over the past decade, the increased use of air conditioning has been the biggest contributor to the jump in peak demand ... the time when electricity consumption is at its highest.
- Historically, Ontario had always used more electricity in the winter. Heating and lighting requirements during winter's

shorter days resulted in electricity use peaking during January.

- But that has all changed over the past 10 years with our increased reliance on air conditioning. I read recently that almost one of every two houses in Ontario has air conditioning. And of course every commercial building is air conditioned as well. On a hot summer day, air conditioning can account for more than 30 per cent of the electricity being consumed.
- Ontario's peak record for electricity was set on August 1st last summer, when for one hour in the late afternoon the demand for power averaged 27,005 megawatts (MW). We had never used that much electricity before.
- In addition to increasing the demand for electricity, a number of things happen to the power system during hot summer weather. Many generators run hotter in the summer and can't produce as much as they can in winter. Lake water temperatures are warmer and environmental considerations can limit the production from thermal generators that use lake water for cooling. Wind energy production is a lot lower in summer than with the denser winter air. Precipitation is often lower in summer meaning reduced river flows and less hydro generation is available. Our neighbouring markets in the United States often reach their peak demands at the same time as we do which can limit imports. Transmission lines run hotter in summer and therefore can't carry as much electricity.

- So at the very times that air conditioning is driving demand to record levels, we have less generation to meet that demand and more limitations on our transmission system. In other words the power system is stressed.
- Yet what's interesting is that when you look at the almost 9,000 hours in the year in 2006, we surpassed the 25,000 MW mark in only 32 hours of the year. All of those hours occurred during a hot summer day when air conditioning was no doubt running flat out.
- Price reflected the high demand on those days with the average price over those 32 hours at 15 cents a kilowatt hour (kWh), more than three times the annual average.
- The environment was also impacted with all of the available fossil plants running to meet those high demands.
- This brings me to where businesses can help.
- By reducing demands at these times, you can save money, or under programs that are available, be paid to conserve.
- If that demand is reduced and less generation is required, the environmental impacts are eased.
- In the longer term, lowering peak demand will help avoid the need to build new generation which would add to your electricity costs. As I have said before, do we really need to

build that generating facility that may only need to run in so few hours of the year?

- That's where demand response programs can help. Our counterpart system operator in New York, reported that more than 1,000 MW of demand response was achieved on August 2 last year. Peak demand that day would have climbed to over 35,000 MW without the demand response programs that were in place. But responding to the New York ISO's call for action, customers cut their consumption and kept the load on the system from rising above 34,000 MW. There are now almost 2,000 MW signed to participate in their demand response programs this summer.
- There is tremendous DR potential in Ontario. Conferences like this are terrific because they allow businesses to hear success stories from other companies, case studies that can work for them as well.
- We have been working with a number of associations and organizations to enable customers to better manage their electricity costs through initiatives such as load shifting. We have some of our brochures here and I would encourage you to pick them up.
- One brochure profiles Oxford Properties and their ability to better manage its consumption and reduce costs at Bell Trinity Square in Toronto.

- To tackle an expensive air conditioning load, Oxford Properties cooled the water for the chillers at night when prices were low which, when stored in a thermal water tank, was circulated to condition air and supply chilled water during the time of day when electricity costs were higher. They also put motion sensors on their lighting systems and installed variable-speed drives on their HVAC. These initiatives help them maintain a target of 24 kilowatt hours per square foot – when other buildings of similar size use 23 per cent more.
- Bell Trinity Square has been ranked one of the most energy efficient in its peer group of buildings and is a recipient of BOMA Canada's Certificate of Building Excellence.
- This is just one example of many for business leaders who are looking to improve their bottom line, ensure a reliable supply of electricity now and in the future and reduce their environmental footprint.
- Thank you very much. I look forward to your questions.