

Notes for Remarks
To the Canadian Club of Halton Peel

“The Outlook for Ontario’s Electricity Sector”

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Thank you very much for that kind introduction.

In my remarks tonight, I want to touch on some of the issues that Ontario's electricity sector has dealt with, including the blackout of August 14, 2003. It's ironic that I have spent my 25 plus years in the sector keeping the lights on but the topic I speak most about is the day the lights went out.

I expect that everyone in this room ... in the vein of "where were you when" ... remember where we were on August 14, 2003 when the blackout occurred. But how many remember where you were when the blackout of 1965 occurred, cutting power to 30 million people in the Northeast?

The magnitude of that incident was easily eclipsed by the blackout in 2003. Shortly after 4:00 p.m. on August 14, 2003, a series of power surges over a 12-second period triggered a cascade of shutdowns at more than 100 generating plants throughout eight U.S. states and Ontario. The result was the biggest blackout in North American history. More than 50 million people were without power.

I will revisit the events around the blackout and outline what we have done to prevent a similar event from occurring.

I also want to talk about what kind of shape we are in right now from a reliability perspective, what our future outlook is like. I am also going to try to give you a better understanding of electricity prices; and more importantly, get you thinking about what you can do to take control of your electricity costs, both at home and in your business.

Ontario's Electricity Sector

Let me start with a brief explanation of what my organization, the IESO, does and where we fit in Ontario's electricity sector.

To prepare for the opening of a competitive market, the old Ontario Hydro organization that had existed for almost 100 years was broken up in 1999 and split into successor companies including: Ontario Power Generation, Hydro One and the Independent Electricity System Operator. Since then, a new organization, the Ontario Power Authority, has been created.

While there are a number of different organizations in the industry today, all of them have their own set of accountabilities. Simply put, OPG generates electricity, Hydro One delivers electricity, the OPA is responsible for planning, the Ontario Energy Board is the regulator and the IESO is the market and system operator.

There is also your Local Distribution Company, Oakville Hydro, Enersource, Milton Hydro and Burlington Hydro that service customers in this area. Dave Collie, the President and CEO of Burlington Hydro is with us tonight.

Dave's LDC and the others distribute electricity to homes and businesses in their area. The LDC ensures the reliability, safety and integrity of the local system, responds to local power outages and bills customers for the electricity service they receive.

At the IESO, we manage reliability of the bulk power system, directing the flow of power throughout Ontario's 30,000 kilometres of transmission lines. We monitor electricity demand, 24 hours a day, seven days a week, and schedule enough generation to meet that demand through supply from domestic generators or through imports.

We manage the balance of supply and demand through our electricity market that determines the wholesale price of electricity. In that way we are somewhat like a commodity exchange.

And while some of you may have businesses that are exposed to the market price of electricity ... and I will talk more about that in few minutes ... it is our system reliability responsibilities that are the most visible.

Ontario is part of a bigger electricity market. In fact, the North American market that Ontario is part of stretches as far west as the Rockies, as far as east as the Atlantic and to the Gulf of Mexico in the south. The North American power grid has been described as the largest single machine ever built by humans.

All of us are connected, all of us are dependent upon one another, we support one another during times of need, but we are also vulnerable to incidents that occur in other areas.

When there is a problem in New York, we may feel it. When there is a problem in Ontario, it has the potential to affect someone in Pennsylvania.

Coordination is essential among all of us. And there are about 20 organizations like us in North America that coordinate reliability.

We have relied on this coordination and cooperation to keep the lights on in this province. Imported power from these other markets has helped us maintain reliability of Ontario's power system and keep prices down.

But that interconnection can also result in the cascading of problems from one region to another.

Case in point is the blackout of 2003.

The Blackout of 2003

The blackout had a huge impact on Ontario. Almost the entire province was blacked out and the economic impact was very severe.

It was made more severe because even though we restored power to most customers within a day, complete restoration of normal supply was delayed for over a week. This was due to the generally tight supply situation Ontario faced that summer.

It became clear that we couldn't reliably meet the demands forecasted for the week following the blackout.

This prompted the provincial Government to request a voluntary curtailment by all consumers. I hope all of you remember sweating through some hot days that August because that would have meant that you actually cut back on electricity use.

We were extremely lucky that this blackout happened in mid-summer. For most people it was an unwelcome change to their lifestyle but not truly threatening. If this had happened in mid-January, the length of the blackout would have been significantly longer and it could have been a public health and safety disaster.

It was particularly disturbing to me that many of the events in Ohio that initiated this blackout were the same things that had initiated past blackouts.

The cause of the blackout can be summed up in three words: trees, tools and training.

Trees weren't properly trimmed to keep them far enough away from transmission lines, monitoring tools normally available to help operators in the Midwest understand what was happening in their system failed that fateful day ... and worse still, the operators didn't know they had failed .. nor did they have the proper training to deal with the problem.

But one of the positive things out of the blackout that it caused us as industry to focus on preventing a re-occurrence.

A joint U.S.-Canada Task Force had 46 recommendations aimed at preventing another blackout. Ontario was ahead of the game, having in place much of what was recommended. For example, the first recommendation for mandatory and enforceable reliability standards, was already in place in Ontario since the market opened.

The industry has responded. For example, in Ontario, we have implemented the recommendations that we could do ourselves. But across North America reliability has been strengthened and we are in a much better position to prevent this from happening again.

Since then we have had some other challenging times, particularly during the summer of 2005.

Summer Peaks

The way we consume electricity in Ontario has undergone a significant change in the past decade.

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. In fact, if you look back over the last century, you would see that the peak usually occurred during this particular week in January.

But that has all changed with our increased reliance on air conditioning. Nowadays, the winter peaks rarely approach the high levels of use we experience during those hot days in June, July or August. For example, our peak

this week was 23,200 MW, well below the record peak of 27,005 MW that we set last August 1.

On a hot summer day, air conditioning can account for more than 30 per cent of the electricity being consumed. Dealing with the air conditioning impact is one of our challenges.

While air conditioning has an impact on demand, what is significant is the short amount of time Ontario actually experiences those really high demands. For example, while demand peak reached 27,000 MW last summer, we exceeded 25,000 MW for only 32 of the 8,760 hours in 2006 ... all as a result of the air conditioning effect.

So what is the best way to meet demands that occur in so few hours over the year?

Traditionally we have built generation to meet demand. But does it make sense to build a 2,000 MW generating plant that may run only 32 hours of the year? As we gain more experience with demand response, we may be able to more effectively address these peaks through programs targeted at reducing the impact of air conditioning. Some local utilities such as Toronto Hydro are doing just that.

Improved Reliability Picture

The electricity supply situation in Ontario has certainly improved over the past few years. In the summer of 2005, there were 12 different days when we asked you and other electricity customers to cut back on your use of electricity because we were at risk of running short.

On two occasions, we were also forced to take the more drastic step of reducing voltage levels by five per cent across the province. Cutting voltage levels reduces the amount of electricity consumed and is one of the emergency measures we take if the system is becoming increasingly strained. It also one of the last steps before we are forced to take the more drastic step of actually cutting electricity in parts of the province to prevent the system from becoming overloaded.

The improved supply conditions were evident last summer when we were able to meet Ontario's electricity needs on August 1st without incident despite setting a new peak record of 27,005 MW.

In fact, during that week in the summer, we were actually able to offer help to our neighbours who were also experiencing high demands. It has been a long time since we were in that position.

We have typically relied on our neighbours to supply us with electricity to help keep our lights on and air conditioners running. It is one of the advantages of being part of a bigger market. When we are short we can count on them, and when they are short, we can help out. This year, for the first time since 2000, Ontario was a net exporter, reflecting how much the supply situation has improved in Ontario.

While we had the one week where demands were very high, overall, electricity demand was down last year, reflecting the mild weather conditions we experienced. Nuclear generation continues to meet most of that demand and the increased nuclear production and lower demand meant that coal-fired generation was down last year, and so were the emissions.

The issue of carbon emissions is not going to go away. I believe that as more and more people become aware of and concerned about climate change, the actions that are taken and the impacts on Ontario will become increasingly profound.

New generation is going to be needed in order to continue to reduce the use of coal-fired power and the corresponding emissions. The good news is that some of those plants are being built today and there are commitments for more generation.

One of the new sources of power for Ontario is wind power. In 12 short months, wind has gone from a few small generators to more than 400 MW of installed capacity in Ontario's system. That's about the size of a coal-fired unit.

And there is more wind to come. A study the IESO co-sponsored last year recognized the potential for wind in meeting the province's demand.

One of the issues is that the wind doesn't blow all the time. But by spreading the wind generators across a large portion of the province, we can better expect that a certain amount wind power will be available to help meet demands.

Toronto-West GTA

Those of you that have followed electricity issues will know about the concerns we raised last year about supply to Toronto and the western part of the Greater Toronto Area.

Since then, construction has started on the Portlands Energy Centre to meet the needs of downtown Toronto. The first phase of that project is expected to be in service by the summer of 2008.

But we also identified concerns in West GTA. Action has also started here including the construction of the Goreway generating project in Brampton. The first phase will be operational in time to meet demands this summer. Just a few weeks ago, the OPA also announced that construction will soon start on the Halton Hills Generating Station. These two projects, together with transmission upgrades, will help address the concerns in this area.

Electricity Prices

The improved supply picture has had an impact on the price of electricity. The average annual market price last year was under five cents per kilowatt hour ... the lowest we have seen since the market opened in 2002 and a sharp reduction from 2005.

Ontario's hourly price was on average, the lowest price among our neighbouring U.S. markets.

I actually read an article recently that claimed that for a number of consumers, real prices are no different than they were 14 years ago in 1993 when prices were frozen by the former Ontario Hydro.

This was something I had to investigate further. I happened to still have a copy of an electricity bill from 1994. When I compared it to a recent bill, it confirmed that real costs, i.e. adjusted for inflation, are the same today.

While on the subject of prices, I want to ensure that everyone is clear about the rate structures currently in place – as there have been some changes over the past few years.

Now I am referring to only the energy price or the commodity price, not the other line items on your bill such as transmission and distribution costs which are regulated rates.

Homes and small businesses pay a fixed rate for electricity – 5.5 cents per kilowatt hour for the first 1,000 kilowatt hours each month and 6.4 cents for every kilowatt hour above that.

Businesses that use over 250,000 kilowatt hours per year ... or roughly equivalent to a monthly bill of about \$2,000 per month ... pay the wholesale market price for electricity.

This price fluctuates during the day, but also from day-to-day and season to season.

What influences the wholesale market price? Why can price fluctuate so much?

The answer is supply and demand. Electricity acts like any other commodity. Anything that affects supply and demand will influence price.

On the supply side, there are two main influencers – the total supply of energy available both within Ontario and regionally, and the type of available generation, as different generators have different cost structures.

Demand is influenced by weather, time of day and how much you use.

Since electricity can't be stored, generators need to produce how much is needed. The cheapest forms of generation are used first. But as demand climbs, more expensive forms of generation are needed and that drives up the price.

Managing Your Electricity Costs

The good news is that you can do something to better manage your energy costs.

Reducing your use is not the only way you can reduce your electricity costs ... although that is always a good idea.

Because electricity costs differ depending on the time of day, many customers have found ways to shift their use of electricity to off peak hours when prices are lower.

The first thing to do is to try to understand your energy costs, how you are charged, and where and when you are using electricity. The more information you have, the better you will be able to take charge of your bill.

One of the brochures we have available here tonight ... "Managing Your Energy Costs" can help but there is other material available on our web site at www.ieso.ca.

Smart Meters

I mentioned that residential customers and small businesses are now on a fixed price regardless of what time they use electricity. All of that can change with the introduction of smart meters.

Smart meters measure not just how much electricity you use, but when you use that electricity. Different prices can be applied to different times of the day. Residential customers can then save money by switching their use to those lower priced hours.

Electricity rates may become like long distance phone rates, where it costs more to use the system at the busiest times of the day. Much like phone rates, electricity will be cheaper on evenings and weekends.

Ontario's smart metering initiative calls for the installation of 800,000 smart meters this year, with every residential customer and small business having a smart meter by 2010.

As the power system operator, we are well aware of the system reliability and market benefits that smart meters can offer. From a reliability perspective, smart meters provide customers with a necessary tool to help them curb energy use during peak periods. This in turn, reduces strain on the electricity system.

We know that even small reductions in demand can produce large overall savings. Not only will consumers save money by shifting energy use to lower priced periods, but Ontario will benefit if we can avoid the need to build new generators as a result of reducing the peak demand. Not having to build a generating plant that would have been otherwise needed can save Ontario customers a lot of money.

Longer Term System Needs

Let me end my remarks tonight by talking about the longer term challenges that we face. I am cautiously optimistic about our immediate outlook. We have more supply, more variety of supply, increased transmission capability, more effective demand response programs for customers, more transparency and a competitive price.

In the medium term, to about 2011, the Ontario Power Authority has contracted for about 6,500 MW of new or refurbished generation and launched a number of conservation and demand response initiatives. That doesn't mean there aren't challenges. We are in the early stages of the biggest infrastructure change in Ontario's history.

Looking even further out, our generating stations are aging, we need to replace or refurbish them and increase the amount of transmission capability we have to deliver that power. The various approvals required today can take years before construction can begin. We also need to find ways for customers to become more energy efficient and shift their use of electricity to off peak hours.

The government has established the supply mix for the province looking 20 years out. That includes 14,000 MW of nuclear, or about what we have now, as well as a doubling of the amount from renewable energy sources to about 16,000 MW. Peak demand reduction is targeted at 6,300 MW.

Ontario's future energy needs are enormous. Billions of dollars of investment are needed in generation, transmission and conservation and demand response programs.

The Ontario Power Authority, as part of its planning responsibilities, is producing an Integrated Power System Plan that outlines our requirements to the year 2025. Developing a long term plan or road map will provide clear direction for Ontario's electricity sector in the future and improve our ability to meet future demands.

There will be no shortage of challenges. But there are tremendously capable people in this industry, committed to serving the people of Ontario with a reliable supply of electricity. We are up to the challenges ahead.

Thank you very much.