

Ontario's Electricity Outlook
Ontario Energy Network Luncheon
January 19, 2006

Notes for Remarks by
Dave Goulding
President and Chief Executive Officer
Independent Electricity System Operator

Thank you very much for that kind introduction.

Those of you who are regular attendees of the OEN luncheons will have seen me up at this podium before and I appreciate the opportunity to be here once again to talk about the electricity sector -- the successes that we have shared and the challenges we all face.

I want to recognize a few of the many guests that have given up their lunch hour to be here today including several members of the IESO Board -- Glenna Carr, Chair of the IESO Board and Directors John Wiersma and Rudy Riedl.

There are a few themes I want to touch on today. Call me nostalgic but I want to look back at the history of the Ontario electricity sector ... given that 2006 represents an anniversary of electricity service in Ontario -- but I want to focus the majority of my remarks today on the future challenges for this sector.

I am still convinced that a market driven, competitive sector is the best way to provide for the future of this industry and I will be asserting this, and what is needed to make it happen in Ontario at various opportunities this year.

But not today. Today I want to focus on reliability issues that we need to address in the short, medium and longer terms.

A Century of Excellence

It was in May 1906 that the Ontario Legislature passed An Act to Provide for the Transmission of Electric Power to the Municipalities. The legislation created the Hydro Electric Power Commission of Ontario which evolved into Ontario Hydro and then into successor companies – such as OPG, Hydro One and the IESO.

Over the past century, the development of a reliable province-wide electricity network brought Ontario into the Industrial Age ... becoming a catalyst for innovation, creating jobs, providing an economic advantage for the province and improving our quality of life.

Along the way, the ratepayers of this province were served by some of the best people in Ontario, identifying the needs, providing the supply through existing and new technologies and building the transmission and distribution system to deliver that power ... successfully meeting the challenges every step of the way.

There are a number of folks in this room who are planning a more formal recognition and celebration of the past 100 years. I look forward to taking part in those events.

But we have also become victims of our own success. That century of growth has also left us with a culture of waste ... where we use more electricity than we need. I have often said that next to water, electricity is the most wasted commodity. We need to recognize that we cannot treat electricity this way. While the electricity system served Ontarian's well over the past 100 years, we now need an electricity system that will support the behaviour changes that are required for the next 100 years.

New Challenges Ahead

The past 100 years has been full of challenges and there have been periods such as post World War Two, where demand was outstripping the availability of supply. But I would suggest that our biggest challenges are still ahead of us. For example, as we noted in our 10-Year Outlook released last summer, the coal replacement plan represents the most significant transformation this industry has ever undertaken.

The issues facing us today are just as complex as those in the past but with a new set of barriers that our predecessors didn't have to face.

January 19, 2006

Sixty years ago, when the coal plants were starting to be constructed, Banana was simply a fruit to be enjoyed ... it didn't stand for Build Absolutely Nothing Anywhere Near Anything.

Furthermore during those earlier days and over subsequent decades there was abundant hydroelectric capability to be developed, the opportunities for exploiting, the hundreds of years of coal supply available were not challenged as being environmentally unacceptable and subsequently the young nuclear industry was not viewed with the level of scepticism and mistrust that has arrived following cost overruns and less than promised performance.

We also had a monopoly organization responsible for identifying the need, developing, and building new facilities free from the discipline of competition. Now we need to ensure that the various entities from the IESO, to the OPA, to the OEB, to the government and the appropriate market participants all work together.

And yes the need to develop new sources of supply has never been greater.

Summer of 2005

The urgency of the situation came to the forefront last summer when we were hit with high but not extreme temperatures and drought-like conditions in parts of the province, creating record demands for electricity and limiting the amount of available hydroelectric capacity.

On 12 different days we were forced to appeal to consumers to cut back on their electricity consumption to try to reduce the strain on the system. Five per cent voltage reductions had to be implemented on two consecutive days in August and the IESO operated under emergency conditions for more hours than I liked.

We relied heavily on imports to meet demand. In fact, in 2005 the Ontario Demand plus the Operating Reserve that we require to carry to cover off against contingencies and changing conditions, exceeded the available domestic capacity in 593 hours ... a 30 per cent increase over 2004.

That is not a summer that I want to experience again. We have taken some steps to improve the situation in time for the summer of 2006. Working with stakeholders we have developed a design for a Day Ahead Commitment Process which will allow imports and domestic generation to be committed a day ahead, providing more assurance of delivery when required.

The rules for the Day Ahead Commitment Process were approved last week by the IESO Technical Panel comprised of stakeholders in the industry for recommendation to our Board, and we are now working with stakeholders on the implementation phase.

We have also been working with stakeholders to develop a Reliability Demand Response Program consistent with the programs offered by our neighbouring markets and which can be activated early enough in the sequence to reduce the need for other actions such as voltage reductions and emergency purchases.

And while that will improve prospects for this summer, the reliability concerns have not disappeared.

Toronto Concerns

In the short term, the biggest concern that we need to address revolves around our ability to supply electricity to customers in central Toronto with the level of reliability that this city warrants.

Toronto is one of the few, if any, North American cities of its size and strategic importance that does not have generation located within its borders to meet a significant portion of its own demands. With all due respect to the wind turbine on the exhibition grounds, Toronto is entirely reliant on power generated outside the City. Compare that to New York City, where 75 per cent of its demand can be supplied if necessary by generators located within the city.

Over the past four decades, the demand for electricity has continued to grow in Toronto while two major sources of generation in the GTA have been retired. The capacity of the Hearn Generating Station – which was retired in the 1980s – was 1200 MW and the retirement last spring of the Lakeview Generating Station, originally 2400 MW but with half the units retired some years ago, took the final 1200 MW of supply away from the Toronto area.

At the same time, the city's population and commercial centre has continued to grow -- so has the demand for air conditioning to the point where commercial and residential air conditioning load now sets the annual peak capacity

requirements of the electricity system in central Toronto, and not winter heating and lighting loads, as used to be the case.

The two transmission paths serving central Toronto were at or near capacity during the summer of 2005 and the potential for overloading will increase during high demand periods. As a result, and as early as the summer of 2008, Toronto businesses and residents will soon be left exposed to the possibility of rotating load cuts during times of high demand. One only needs to look back to last summer to realize that those high demand periods do occur.

Specifically, Toronto needs 250 MW of firm generating capacity available by the summer of 2008. Looking out to 2010, that amount of capacity needed is forecast to grow to 500 MW.

This new generation would buy us some time to develop further transmission reinforcement. We need to get on with bringing in a third transmission path early in the next decade in order to provide additional supply and diversity to the city and to maintain reliability during extremely hot summer weather conditions.

The IESO is working with the OPA and others to address the Toronto situation and we are well aware of the need to work with the community and the appropriate stakeholders both to address legitimate concerns and to ensure necessary actions are taken.

The situation in the Western part of the Greater Toronto Area is also tight although not quite as onerous as in the city but we are by no means out of the

woods. The planned two Goreway natural gas units being brought into service over the next three years will reduce but not eliminate reliability risks in the west GTA.

However, a combination of additional generation facilities and enhanced transmission capability is still required to address the remaining risks that exist over the next two to five years.

Coal Replacement

In the mid-term, the coal replacement plan will be a key focus of the IESO, OPA and other sector participants. Let me take a minute to recognize that the government has been very active around this.

The government has put in place an aggressive plan to replace coal-fired generation with cleaner sources of power. Considerable steps have either been taken or are planned to allow these coal units to be retired. But the government has also been clear about the need to maintain reliability throughout this transition.

Yes there has been significant progress made and yes the government and others need to continue to maintain the pressure to move forward.

We must be clear about the need for prudence as the government's coal replacement policy is implemented. When operating a power system, adequate reserves are required on a minute by minute, hour by hour, day by day basis to cover off uncertainties and to be robust when faced with contingencies. This is

also the case when looking ahead to the mid term when we need to be assured that plans are in place to accommodate uncertainties.

We are operating under some very tight timelines and a considerable amount of action is required involving a number of organizations. Close coordination is essential.

As we asserted in our 10 year assessment there is no question that meeting this schedule will be a challenge.

As I said, I recognize the government's need to be aggressive on this issue. I also believe it is the IESO's role to provide advice to the government and others as to the prudent steps that need to be taken on the schedule that has been set for the coal retirement.

Preparing to retire the coal units is not as simple as replacing the 6500 megawatts of capacity that coal now represents with supply and demand side initiatives. Other characteristics provided by the coal-fired generation must also be maintained to support the overall adequacy and reliability of the power system.

For example, there is a need for generators at the Nanticoke station to meet reactive power needs to sustain voltage levels. At present, this is achieved while the units operate as coal fired generators. In future, the generators can be converted to synchronous condenser mode without the need for coal to be burned to generate megawatts.

As more Bruce units return to service and as we bring in more wind power from the Bruce area, the need for reactive support, currently supported by Nanticoke, will increase. Longer term, additional transmission reinforcement will be required to utilize power from all eight Bruce units and from the new wind turbines planned for the area.

The Nanticoke retirements will take into account the time it will take to convert the units into synchronous condensers, the requirements associated with the Bruce units, additional wind generation from that area and other factors. Much as we require flexibility in the near and short term to accommodate uncertainties, in order to ensure that delays or other unexpected circumstances such as outages or reduced performance of existing facilities do not compromise reliability in the mid term, the IESO is reaffirming the position that was put forward in our 10 year assessment and was recognized by government and others that provisions should be undertaken to allow the Nanticoke and Lambton units to maintain the capability to operate beyond the announced shutdown dates as a hedge against such circumstances. This provides the comfort against uncertainties that the IESO has found to be of value in the past.

Our focus throughout this transition period will continue to be on the reliability of the power system. The IESO will monitor the progress of the coal replacement program and will advise when circumstances are such that the units can be removed from service without compromising reliability. It is important to note that while earlier retirements can be accommodated if circumstances permit, it is problematic and often not possible to extend the period of reliable operation if the necessary fuel, staffing and maintenance plans have not been put in place ahead of time.

We will issue a Reliability Report which will identify the status, challenges and some necessary actions required to maintain a reliable and secure supply of electricity in the province.

Longer Term

As I have been saying for the past few years, in the longer term Ontario needs between 20 and 25,000 megawatts of new supply and necessary transmission enhancements over the next 20-25 years. The OPA is now charged with the development of an Integrated Power System Plan aimed at ensuring that adequate demand and supply side resources are put in place to meet the future needs. We will be supporting the OPA in providing the analysis needed to develop that plan and in assuring that the mix of resources in the plan provide an operable system with the rapid response, load following and voltage support necessary to maintain a reliable system.

The Ontario grid is tightly interconnected with the North American grid east of the Rockies. We will continue to make use of this network both to support and be supported by our neighbours in times of need as well as to transact for economy. We have certainly called on that support to help us get through this past summer and will need to call upon it again in future.

With the increased focus on reliability, adequacy and security that followed the August 2003 blackout, there is an increasing pressure on ensuring that all jurisdictions have operating and system plans and facilities available such that the reliability of the network is not jeopardized. The current moves towards the

formation of an international electric reliability organization setting strict standards and the development of broad regional plans are examples of where the spotlight will be shone across the network and areas of weakness will be highlighted. It is incumbent upon us in Ontario to be able to demonstrate that we have robust plans in place to accommodate the uncertainties and unexpected in real time operations, over the coal retirement and long term timeframes so as to remain a member in good standing in that community.

In order to demonstrate that we are making the necessary preparations we have to work together.

Since its inception a year ago, the OPA and IESO have developed a good ... indeed essential working relationship. It will be important for the two organizations to continue to work together and support one another to ensure that short and medium term plans and activities do not jeopardize longer term plans and that longer term plans take into account the impact on real time operations.

Approvals

Earlier I had mentioned that our predecessors were not constrained to the same extent by public issues or concerns that we need to deal with in our plans. Now I am not suggesting that we return to that world ... stakeholders have genuine concerns that must be addressed.

But I am concerned that the current regulatory approvals process is too complex. Schedules are very tight and already at risk in some cases.

There are a number of needed transmission projects that cannot be completed in time if we have to follow the current approvals process to the letter.

One of the top priorities for the OPA, Hydro One and the IESO is to see an expedited but thorough approvals process developed soon to ensure that new facilities can be implemented, where they are needed, when they are needed, without unnecessary delays.

Conclusion

I have heard some reporters say that electricity will be at the forefront of everyone's attention in 2006. And while we have become somewhat accustomed to the pressures and challenges upon us, we are now staring in the face of some challenging times. If there were any doubts, the summer of 2005 brought this home.

Reliability needs, public and stakeholder concerns, pricing impacts, new generation and transmission facilities, the phase out of coal, and a need for aggressive conservation and demand management initiatives ... all of this is on the horizon in the short, the medium and the longer terms.

At the same time, we need to continue to evolve this industry for the benefit of all Ontarians, getting more investment and reaping the advantages of competition.

January 19, 2006

For us to get through these challenging times and continue to provide the service that Ontario ratepayers have enjoyed for the past 100 years, all of us in this sector will have a role to play to work together. Although we have different accountabilities, our activities, our plans, our programs must complement one another.

As Gord mentioned in the introduction, I have advised the IESO Board that I intend to step down as President and CEO. I have agreed with the Board's request to stay on to allow for a search for a new President and CEO.

The decision to retire was a difficult one for me to make, given how much I enjoy what I do and what I continue to learn.

As I said at a recent conference in Niagara Falls ... this business is a must for new career-minded graduates. Where else can you get 20 years experience in six months?

After leaving the electricity supply sector after 17 years in the U.K. to work in a more stable environment, it has been an amazing 30 years for me in working in Ontario's electricity sector and it has got more interesting with each passing year. But I think it's time for someone else to have all the fun.

Thank you very much for your time. I look forward to your questions.