Note for Remarks
To the Toronto Board of Trade

Ontario's Reliability Outlook

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Thank you very much for that introduction. I am pleased to be here to speak at the Power Breakfast and in particular speak about the reliability outlook for Ontario's electricity sector.

The Power Breakfasts were started ten years ago, when David McFadden was chair of the Board's Electricity Task Force. The MacDonald Committee Report had just been released and I know David wanted the broader business community to be informed and part of the discussion around the major reforms being considered.

I understand from David that the Breakfasts were intended to identify some of the issues facing the province's energy sector and what opportunities might be created as the sector was being restructured. I think they have certainly accomplished that.

I am told that the Power Breakfast Series has been the longest running and most successful series ever launched by the Board of Trade.

Congratulations David. I think that speaks to your insight. Now if you could just tell us how the next ten years are going to unfold.

Speaking of the next 10 years, as the title on my opening slide indicates, this morning I am going to talk to you about Ontario's Reliability Outlook. My comments come as we are about to release our Ontario Reliability Outlook … in fact a copy of this report will be provided to you as you leave this morning.

This is our third Outlook of this type. And I am extremely pleased to say that the needs that we identified in the first two are largely being addressed.

The first Ontario Reliability Outlook that we produced a year ago focused primarily on the issues facing Toronto and the Greater Toronto Area. Since then, construction has started on the Goreway and Portlands generating plants, and the Halton Hills project has been announced.

Our second Outlook, released last June, focused primarily on the challenges facing the coal replacement plan. Shortly after that report was released, Minister Duncan referred the planning for coal replacement to the Ontario Power Authority (OPA) and the IESO.

Even though the government clearly took some political heat for that decision, it was the right one for reliability reasons.

The shutdown deferral, together with the planned new supply and other initiatives, account for the improved reliability picture we are providing in the Outlook being released today.

About 7,000 MW of new or refurbished supply is planned to come into service by 2011.

In addition, targeted Conservation and Demand Management savings totalling more than 1,000 MW are being pursued by the OPA and Local Distribution Companies.

There is no question of the potential for CDM initiatives in helping to meet future needs. This is not to suggest that CDM resources are exactly equal to supply resources. For example, CDM savings don't offer voltage support, nor can we always be sure of the location in the province where these savings can be achieved. Some of these programs will take time to demonstrate their full potential.

This is another reason why I think the right decision was made around coal.

The change in status for the coal phase out will help us maintain reliability even if there are delays in either the completion of the planned facilities or achievement of savings from the CDM initiatives.

Wind

Some of the 7,000 MW of planned new supply will include wind. Approximately 400 MW of wind is currently installed at four locations around the province.

Wind has already begun to show value in the short time it has been operating in Ontario. The experience to date should help to offset some of the criticism that we have heard about wind.

It is still in the early days, but over the past 11 months, the energy capacity factor for wind has averaged 25 per cent. The monthly average capacity factor for the entire wind fleet in the month of December was 37 per cent.

Several wind projects are under development and are expected to be completed within the next couple of years.

A wind power working group has been created consisting of a variety of members in Ontario that have a special interest and focus on wind generation. This group is working with us to address any additional integration issues.

Load Following Requirements

While there are significant supply additions planned, there is a need to ensure that some of that future generation has the ability to rapidly increase or decrease its output to match demand. Load following requirements are highest during early morning when demand rises quickly and in the evening when demand quickly drops off.

If you take a look at the daily demand on our web site, you will see a jump of about 3,000 MW between 6:00 and 8:00 a.m. as we get up and get ourselves ready for work or get the kids ready for school. Then at night, you will see demand drop by about 2,500 MW between the hours of 9:00 and 11:00 p.m.

The capability to follow the load is found in certain types of supply such as coal-fired or gas-fired generators and some hydroelectric generation.

Over half of Ontario's installed capacity is non-manoeuvrable, including nuclear, certain hydro facilities and wind. This type of generation has to be used when it is available and does not have much flexibility to be dispatched up or down to meet the demand.

The IESO is currently studying the potential impact of proposed changes to the supply mix on the load following capability of and requirements for dispatchable generation and load in Ontario.

Our study will determine a quantifiable measure of load following requirement based on historical demand and market data. We can then simulate how well potential supply mixes will meet these requirements.

Transmission

Let me turn to the transmission picture for a moment. With new supply being planned, many industry stakeholders and observers have been pointing to the need for new transmission facilities. Not surprising, this is a major theme in the Ontario Reliability Outlook.

New supply won't do any good if we can't deliver it.

Not having new transmission would eventually result in us having to operate parts of the existing grid near the maximum capability. There would be little margin for unexpected contingencies and we would require complex arrangements just to do routine maintenance on critical facilities. This is already the case in parts of the province.

As a result, new transmission facilities are a priority in some areas, particularly southwestern Ontario.

With the refurbishment of Bruce units 1 and 2, an additional 1,500 MW of supply will be available. That area is also considered one of the prime areas for investment in wind. But the transmission facilities serving that area cannot accommodate all that additional generation.

Some short term solutions are available to minimize potential congestion that could begin as early as 2009 with the return to service of Bruce unit 2. However, a new line is needed if we are to reliably incorporate the new supply.

There are a number of other areas throughout the province where transmission enhancements are required, in some cases to support planned supply additions in some cases to support load growth.

In York region, the transformer station capacity has been exceeded due to rapidly growing loads in the Newmarket and Aurora area. Hydro One plans to have a new transformer station in service in 2008 to address the immediate needs.

But that only buys us some time.

Longer term, transmission constraints are expected to occur as early as 2011 and local generation is needed to address these constraints. Work to procure this generation must begin soon.

Our Report outlines the transmission plans that are being developed to address the needs we have identified.

Concerns

Reading the report, you will no doubt quickly realize how much things have improved over the past year. But that doesn't mean we won't have our challenges.

The impact of the current approvals process on the planned infrastructure additions remains a question mark. Particularly given that we are in the early stages of the largest electricity infrastructure change this province has ever seen.

We have already seen projects delayed by various municipal permitting or environmental screening requirements.

Consultations with various stakeholder groups may have an impact on both the nature and timing of specific project initiatives.

Some changes have been made. But until the approvals process is demonstrated to be effective, there will continue to be a risk that projects will not be available when needed.

The Interconnected Market

I mentioned that the positive supply situation we are anticipating can provide some insurance in the event projects are delayed. Another contributor to reliability that we have relied on in the past is the interconnected market we are part of.

In the summers of 2002 and 2005, Ontario at times, relied quite heavily on our neighbours to help meet demands in this province.

And of course we also benefit from those interconnections from an economic perspective, with imports able to offset the need for more expensive domestic generation.

But some of our neighbouring jurisdictions are beginning to face the prospect of declining supply margins. According to NERC's 2006 Long-Term Reliability Assessment, there is expected to be a general decline in reserve margins over the next decade, including in those areas directly connected with Ontario.

Although the benefits of being interconnected continue to exist, in the longer term we may not be able to count on the same level of support.

Climate Change

While the Reliability Outlook outlines some of the challenges we expect to face, there is one challenge it doesn't specifically address that is rapidly increasing … the impact of climate change on our industry.

As Energy Minister Dwight Duncan said recently, "climate change and global warming are real and are here. Canadians want less talk and more action."

The good news is that we have already made a good start in Ontario. The actions in this province to date include:

- The introduction of a number of conservation and demand response programs;
- A commitment to almost 16,000 MW of renewables by 2025.

- And the direction to phase out coal.

All of this stands this province in good stead going forward.

But, awareness of the climate change issue has quickly accelerated to the point where you can't pick up a newspaper without reading about the challenges and the different calls for action.

The climate change concerns are not unique to Ontario or Canada. Last week, I had an opportunity to speak at the National Association of Regulatory Utility Commissioners in Washington. Environment and energy efficiency dominated the discussions. We also heard recently that the Australian government is banning incandescent light bulbs by 2010. Jurisdictions in the United States are also considering similar actions to address climate change concerns.

Seven Northeast and Mid-Atlantic States have indicated their willingness to participate in the Regional Greenhouse Gas Initiative. At the heart of this proposal, is a multi-state cap and trade program with a market based emissions trading system. Beginning in 2009, emissions of CO_2 from power plants in the region would be capped at the current levels. The cap would stay in place until 2015 when the states would begin reducing emissions incrementally to achieve a ten per cent reduction in 2019.

That's just the start. As more and more people become aware of and concerned about climate change, the impacts on our industry – and the need to do even more than we are doing now – will become increasingly profound.

<u>Conservation and Demand Management</u>

I mentioned Ontario's focus on Conservation and Demand Response. Our Outlook looks at the contribution that conservation and demand response is expected to play in the future. Aggressive targets have been set and the OPA and LDCs have introduced a number of programs to try to achieve the desired savings.

As CDM measures become more prominent, the IESO will closely monitor their contribution during peak demand in order to reliably and efficiently schedule resources and operate the system.

We set a peak demand for electricity last summer, topping out at just over 27,000 MW. But when you look closer at the numbers last year, you see that we exceeded the 25,000 MW mark only 32 of the almost nine thousand hours in the year.

Effectively addressing those 32 hours is a priority. But does it make sense – environmentally or economically – to build … as we have in the past … generating facilities that will only be needed for such short periods?

As we gain more experience with demand response, we may be able to more effectively address peaks through Demand Response programs … particularly programs targeted at air conditioning. Toronto Hydro and other LDCs have certainly made some headway in that direction.

And the OPA is in the process of taking these initiatives province wide.

Small Infrastructure

I talked earlier about the size of the infrastructure change taking place in Ontario.

For most of us, when we think about infrastructure change, we think about big infrastructure; nuclear plants, hydro dams or transmission lines in the electricity industry; pipelines, sewers, roads and bridges in other industries. But infrastructure doesn't always have to be big to be important. The little meter on the side of our house is often the last thing we think about. But it is a critical piece of our electricity infrastructure. And it is undergoing a change just as profound as our "big" infrastructure.

I still remember Sally Hunt, energy economist and author of Making Competition Work in Electricity, telling me many years ago when we were designing Ontario's market that we should start with the meter. She said if you figure out how users of electricity are going to pay for it and how suppliers are going to get paid, many other things will just fall into place.

Ten years later we are paying a lot of attention to the meter at the small customer level. In Ontario, more than 4.5 million meters, most based on a technology that hasn't changed in decades, will be replaced in the next four years as part of the Province's smart meter initiative. LDCs will be installing 800,000 smart meters throughout the province by the end of 2007, and for all Ontario customers by the end of 2010.

And the meters themselves are just the start. The advanced metering infrastructure measures and provides information about electricity use on an hourly basis.

This combined with prices that reflect the time of use can provide customers with a powerful opportunity to take control of their electricity use. It will encourage customers to curb their use of electricity during peak periods. This investment in "small" infrastructure should avoid larger investments in "big" infrastructure like peaking generators in the future.

Conclusion

Having listened to many of the speeches over the past 10 years, it is clear how far this industry has come in a relatively short period of time. In fact, it may be easier to answer what hasn't changed, instead of listing what has.

But let me try … at a high level … to outline some of what we have seen over the past decade.

In 1997, we had over 300 municipal utilities in the province … now there are approximately 90.

Ten years ago, the sector was dominated by Ontario Hydro, which had the power to set its own rates and to prevent customers from choosing their electricity supplier, while accumulating almost 40 billion dollars in debt.

Now we have a number of generators competing to meet our daily energy needs. The Ontario Energy Board has real regulatory authority, and there are many retailers willing to provide services to consumers.

Since this breakfast series has started, we have gone from a fully regulated model, to an open competitive market, to the hybrid market we are now operating under.

We have seen customers move from a rate structure that had one fixed rate regardless of how much electricity you used or when, to a variable rate, back to a fixed rate and now to a two-tiered rate designed to promote conservation.

And one thing is for certain, all of us in this industry are very well aware of the needs of the end use consumer … something that I don't think we could have said 10 years ago.

The industry structure we have now is working. And while more market enhancements are required, the current hybrid market is achieving what it set out to do. Many directions set out in the 2004 report from the Electricity Conservation and Supply Task Force are in place.

Ahead of us are more challenges … bringing on line new generating stations new transmission facilities, and new metering.

Given the magnitude of the infrastructure requirements ahead us, and the amount we all have on our collective plates, that is where our focus has to be … getting the required infrastructure in place.

As our Outlook suggests, we are in an improved situation as we look forward… the crisis of a few years ago has eased.

We have the ability to give what we have in place in this sector today, time to work. Additional changes should be incremental, as reflected in our approach to market evolution. We have the time to move thoughtfully and make sure what we plan today will work for our customers tomorrow.

Thank you very much for your time. And again, I would like to thank the Board of Trade for the opportunity to be here this morning.