



Notes for Remarks to the Ontario Energy Network luncheon

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IESO

Powering a reliable and sustainable energy future for Ontario

Check against delivery

Thanks Gord. It is a pleasure to be here. As you mentioned, it is a longstanding tradition for the IESO to kick off the OEN luncheon speaker series for the coming year. Bruce Campbell was unable to attend today but I am honoured to continue that tradition on his behalf.

By way of introduction, I have been with the IESO since 2010 when I joined the Board of the Directors and have served as Chair of both the previous IESO organization and the merged organization, having been appointed in July of last year.

Consistent with the turning of the year, my remarks here represent an opportunity to both look back at the year past and to look ahead to the year [and years] ahead, and the challenges and opportunities we can anticipate.

Last year, at this time, the IESO/OPA had just been formally begun. As we begin 2016, at the IESO we are well along in forging a new company with an expanded mandate for this sector and a vision that captures our intent to power a reliable and sustainable energy future for Ontario.

For the IESO, a key priority in 2015 was to forge an integrated organization that is now responsible for real-time operations of Ontario's bulk electricity, the planning and procurement of the resources needed to maintain reliability now and into the future, and for advancing conservation in Ontario.

Bruce Campbell and his team have largely completed the nuts and bolts work – everything from moving to one system for financial reporting, to one telephone system and so on. And, as per our commitment going into the merger, we've achieved significant efficiencies – we will be proposing a rate reduction in our upcoming OEB application.

Bringing all of this together has been a more complex and complicated process than any of us might have imagined a year ago. But throughout, the IESO has worked hard to make the transition seamless for market participants, customers and stakeholders.

## Events of 2015

Apart from the merger there are several other key IESO events in 2015 that I want to touch on.

In early December the IESO signed an amended agreement with Bruce Power for the long-term supply of electricity from the Bruce Power facilities.

This agreement secures 6,300 megawatts (MW) of electricity supply from the Bruce Power site and is a vital step in providing long-term, low-cost, emissions-free and reliable baseload electricity generation into the 2060 period.

It also adheres to the Long-Term Energy Plan negotiation principles, which formed our negotiation mandate. We have minimized commercial risk to the government and ratepayers – with Bruce Power agreeing to invest approximately \$13 billion of its own funds and taking the full risk of cost overruns on refurbishments of the six nuclear units.

The agreement includes strong provisions for contractual off-ramps. For instance, we can invoke these off-ramp provisions if we determine that there are more economic alternatives to meet Ontario's needs than the refurbishment of the units.

This agreement also secures Bruce Power's ability to provide about 2,400 MW of flexible generation, which is one of the unique capabilities of the Bruce units and a capability that is highly valued by a system operator.

In short, this is a foundational agreement – it secures one-third of Ontario's electricity supply for this and the next generation of Ontarians.

The second event I would like to note is the Demand Response Auction that the IESO just concluded.

This past December, we conducted Ontario's first demand response auction, a competitive process through which demand-side resources were selected to be available to reduce their electricity consumption.

It was a very successful first effort ... with the auction securing almost 400 MW for the summer and over 400 MW for the winter at clearing prices that are lower than other options.

Through these types of auctions, demand resources will have the opportunity to compete against other capacity providers such as generation and imports to cost-effectively meet Ontario's electricity needs. It is an important development as it shifts the procurement of DR resources from a contract structure to a market-based platform.

We will continue to refine the process and incorporate any key learnings from this first auction into future DR auctions. One of our objectives will also be to look to introduce residential demand response in a future auction. Our experience with the DR auction can be applied to our plans for a future capacity auction ... something I will touch on in a few moments.

Meanwhile, LDCs continue to make strides in achieving the 7 TWH target set out in the Conservation First Framework.

## Changing sector

Let me shift from the recent past to look forward.

Change has been a pervasive factor in this sector for a decade. Most of the changes have been policy driven and have affected the way we both generate and consume electricity. On the generation side, as you know, coal has been completely removed as a supply source and its capacity replaced by natural gas and renewable generation sources like wind and solar. That increased renewable contribution is a trend that will continue.

On the demand side, the DR auction I just spoke of is an example of the expanding role of demand management and demand response initiatives – another trend that will continue.

While policy choices have dominated the changes in the sector in the last 10 years, technology change will be a primary driver of structural adjustment in the electricity sector in the next decade. Improvements in renewable technologies, scope and scale economies and competitive market forces have caused costs of renewables to decline.

As a consequence, we're seeing tangible examples of how they are having a very real impact on electricity sector development in various jurisdictions around the world, including right here in Ontario.

Let's start with solar. The latest data for 2014 shows that worldwide installed solar capacity rose 28.1 percent from 2013. By June 2017, the end of our 18-month planning outlook, distribution-connected solar will have grown to over 2,100 MW. On the North American continent, Ontario is now second only to California in terms of solar penetration at the distribution level. And on the cost side, residential solar installation costs fell by eight percent in just the first half of 2015, according to the latest data from Lawrence Berkeley National Laboratories.

In fact, both solar and wind costs have been coming down significantly because of the technology advances and competitive processes to which I referred.

Combine that with the fact that distributed energy resources like wind, solar and conservation can be managed or coordinated within a micro grid of interconnected loads and small-scale generation technologies – the result is that micro grids have the potential to be a real game changer and North America is expected to see the most significant growth in micro grids in the medium term.

But as distributed generation continues to grow and the potential for customers to move off-grid increases, the more fundamental questions around the functional roles of the LDCs [e.g., will they become multi-service operations] and the evolution of their operating relationships with the IESO will also have to be addressed.

In California, as most distribution companies in the state approach the five-percent net metering limit for distributed solar, this has prompted a major rethink of how these numbers will expand beyond this point and the kind of distribution sector that will be needed in order to achieve that.

In New York, the Public Service Commission continues to drive forward with their consultations on the Reforming the Energy Vision (REV), which advocates for distribution systems to provide some form of local market platform for distributed energy resources.

Here in Ontario, the Ontario Energy Board has announced its intentions in regards to revenue decoupling in order to stabilize the LDC revenue base – eventually across all classes of customers.

### **What role will public policy be taking over the next five to 10 years?**

Ontario was at the forefront of the elimination of coal from the supply mix, a move that other jurisdictions are now following. We have been leaders in realizing the benefits of conservation, and we have been at the forefront of reliably integrating a significant amount of renewables into the system.

But we also find ourselves in a situation where most of the sector's costs are fixed and will be for the foreseeable future. This makes it difficult to bend the cost curve.

And while we do find ourselves in periods of surplus baseload energy, that positive supply situation bodes well for Ontario as we continue to deal with uncertainty.

Some of that uncertainty revolves around Ontario's [and Canada's] climate-change strategy and the province's proposed cap and trade market. After consulting with stakeholders late last year on design options, the government is now drafting regulation that is expected to be tabled early this year, with an implementation date of January 1, 2017.

The details are still being worked out, but what we do know is that the province has set ambitious targets for emissions reductions, including reducing emissions 15 percent below 1990 levels by 2020. And looking even further ahead, the targets become even more ambitious: a 37-percent reduction by 2030 and 80-percent reduction by 2050. This will cause many in our industry, from generators to large consumers, to reassess their operations and how to participate in the electricity market.

We also have the time, given the positive supply situation we expect to be in for the next five plus years, to determine how Ontario's electricity needs can be met in a way that increases efficiency and enhances reliability.

From a system operator perspective, flexibility is a key need for the future to deal with the rapidly changing environment we find ourselves in.

Yes, there will be a need to continue to procure a significant amount of our needs. The nuclear arrangements that are being made helps do that.

But there is also an opportunity to address the need for tools/mechanisms that add flexibility to decision-making [in both the public and private sector], and allow us to adapt effectively to changes whose speed and scope we can't accurately predict. We do not need to lock ourselves into long-term contracts or to technologies that may soon become obsolete.

Market mechanisms may be our best option to do that.

## **Market Development**

In conjunction with many of the people in this room, the IESO has examined options for improving Ontario's market design; for example, the Electricity Market Forum outlined some potential changes for us to consider.

The Market Surveillance Panel has proposed adjustments to market design and operation.

Our own experience with market operations and research on design options also underpins the potential to significantly improve Ontario's market efficiency and create opportunities through competition. As I mentioned, we are very pleased with the results of the first demand response auction, and we are going to continue to explore opportunities to improve on those results and look to access the residential market.

We have started working with stakeholders on a market development plan. It's a plan that we believe should in the short term include replacing the inefficient two schedule system that we have. As part of that market development plan, we also want to consider a day-ahead market, more frequent intertie scheduling and enhanced real-time unit commitment.

In the longer term, we will be focused on developing a capacity auction ... a capacity auction that will help put in place a competitive structure for procuring resources in a manner that existing and new resources can be on an equal footing.

These are ambitious goals and goals that will take time to realize. But given the positive supply picture, we believe we have the time to work on these initiatives that hold long-term promise for "Powering a reliable and sustainable energy future for Ontario."

## Stakeholder Engagement

I hope my remarks today have given you a sense of the many challenges that all of us in the sector will be facing over the next few years. And I want to reiterate our commitment to engaging with and respecting the input that is provided by our stakeholders along the way. That commitment is fundamental to the IESO.

As we look to the future and address the change that is underway and ahead of us, we'll be calling for your views and advice.

Over the past year we have asked a number of the leaders in this sector to sit on our Stakeholder Advisory Committee ... a stakeholder body that I and the rest of the Board have come to rely on for sound advice. I see a number of those individuals here and I want to recognize the commitment and contribution they have made.

Working with the SAC, we have enhanced the set of principles that help guide the way we engage with our market participants, stakeholders, communities, First Nations and Metis, customers and the general public. The seven engagement principles – which are posted on our website – focus on building trusting relationships while seeking input in a respectful, transparent and inclusive manner to help inform IESO decisions.

## Conclusion

In closing, I want to take a minute to remind you of some of the results of our experience over the last decade:

- We have addressed Ontario's reliability issues of a decade ago with the procurement of thousands of megawatts of new and refurbished supply.
- We are ahead of the curve in eliminating coal and integrated a significant amount of renewable supply that can be dispatched and is becoming increasingly cost competitive.
- We are starting to test the capability of storage.
- We are seeing increasing demand side participation through demand response and conservation.
- We are consolidating the distribution sector.

- And we are continuing to promote the development of new technologies including smart grid and micro grid development.

Yes, we will continued to be challenged by the change that become a constant, but given the track record of the IESO and other of the players in this sector, I am confident of our ability to embrace that change to the benefit of those we serve.

And with that, I would like to thank you for your time today.

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