

Notes for Remarks

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Thank you for the kind introduction. It's a pleasure to be part of your program today.

In my remarks, I will touch on a number of topics. I'll talk briefly about the changing role of the IESO in the context of a changing electricity sector. I will also give an update on the load forecast and what this means for planning the power system. I will then discuss some of the challenges, as well as the opportunities, that this presents for both the IESO and for the solar community.

First though, I would like to start by congratulating all of you, the solar community, in this room. Solar has come a long way in Ontario in a relatively short span of time, and that is due in part to many of your efforts.

Currently there is approximately 140 MW of transmission-connected solar and nearly 1,700 MW of solar generation connected to our distribution systems. These numbers are expected to increase to 500 MW and 2,300 MW respectively by the end of 2017. And looking further ahead, we expect that by 2021, of the 10,700 MW target for non-hydro renewable energy, 3,800 MW of that will be solar.

The growth of solar in Ontario is indicative of a rapidly changing electricity sector. As you know, the IESO has undergone some changes of its own. Over the past year, we've had a strong focus on our own organization – to ensure the merger of the two predecessor organizations realizes the intended benefits. This inward-looking effort also drove externally focused results. While there is still some integration work to be done, we can say with confidence that the merged organization is delivering greater public value, both in our business and across the entire electricity sector.

The activities of the new IESO now extend across Ontario's electricity sector. Because of this, we are better positioned to support change in the sector; improve our markets and how those markets and contracts work together; create efficiencies for the benefit of Ontarians and, of course, promote more efficient use of electricity consistent with the growing culture of conservation in the province.

The recently tabled Bill 135 represents yet another important change – one that further defines the changing role of the IESO. This legislation, if passed, would replace the current Integrated Power System Plan or IPSP framework and establish the Long-Term Energy Plan as the key planning document. As part of this new framework, the IESO will play a key role as the independent planner, responsible for the development of a technical report that will set the context for planning at the start of the LTEP development process. This document is to consider, and I quote, “the adequacy and reliability of electricity resources with respect to anticipated electricity supply, capacity, storage, reliability and demand.” The IESO will also be responsible for an implementation plan post-LTEP and will, in some circumstances, have the authority to procure transmission.

And there is more change on the horizon. On the climate change front, for example, we know that the province wants to achieve an 80-percent reduction in emissions over 1990 levels by 2050. To do that, the province is planning to work on a range of projects, from getting more electric cars on the roads to changing the building codes to encouraging retrofits to create more environmentally friendly buildings. The steps being planned to get to these reductions won't be released by the government until the New Year. We will continue to stay tuned in to see what emerges here...

Things like this, along with the changing role of the IESO in an evolving electricity sector speak to a greater degree of interconnectedness and uncertainty than ever before. Looking back at the past half century, Ontario's electricity consumption has quadrupled from the 1960s to the late 1980s. But, we are now back at the same level of demand for energy from the grid as we were in the late 1980s. And since the recession in 2009, growth in grid demand has been offset by conservation savings and embedded generation output. In fact, conservation has grown significantly – to about 10 TWh by 2014. Meanwhile, embedded generation has more than doubled – from about 2 TWh in 2008 to about 5 TWh in 2014.

What this means is that we expect load demand to remain relatively flat for some time.. So what does this mean for solar going forward? Is there opportunity for growth? Well, yes, there is.

With the potential for small-scale solar to reach grid parity in the next few years, net metering can become an easy and accessible way for customers to manage their bills and to contribute to the reliability of the grid. At the IESO, we are working with the Ministry and industry partners to ensure that the program balances the value it provides to the system at a competitive cost. We are particularly interested in the possibility that net metered solar can be encouraged in regional plans where the system is constrained and capacity is required.

Regional system planning ensures a reliable supply of electricity to regions. It considers conservation, generation, transmission and distribution, and innovative resources. And it is the link between provincial and local planning. The IESO is engaged in a robust regional planning process that encompasses 21 electricity planning regions across Ontario. Through this process, regional plans identify the needs and actions for the

near, medium and long terms for a 20-year planning horizon and each region is required to be studied every five years.

Working groups are established for each region, composed of LDCs, the regional transmitter, and the IESO; and stakeholders, municipalities and Aboriginal communities are engaged throughout the planning process.

There are a number of approaches to meeting long-term needs. One approach is to deliver provincial resources, which is the traditional transmission and distribution planning approach – in other words, developing “wires” to supply the local area from system resources. In this approach, the transmitters and LDCs take a lead role in development.

Another approach is where a centralized local supply resource may be developed, using possible technologies such as gas generation or combined heat and power.

A third approach is community self-sufficiency. Here, a variety of demand-side and distributed mechanisms (e.g. CDM, DG, distribution solutions, localized DR, Smart Grid, storage and other emerging technologies) would be considered to help manage local electricity needs and to avoid asset investments like station upgrades. Success with this approach depends on local communities taking a lead role.

And none of these approaches is mutually exclusive from the other in the development of a regional plan. A final plan may include elements from each of these approaches.

Having said all this, planning for future needs in the current environment is challenging, to say the least. But with challenges there are also often opportunities...

For example, the agreement with respect to the refurbishments of the remaining six Bruce Power nuclear units was just announced last week. There may be the perception that, in light of this, and with flat demand growth, that there is little room for solar to grow.

However, with the refurbishment, there are provisions in the contract for off-ramps. Off-ramps could occur before the third unit is refurbished and again before the fifth unit is refurbished because we have a more economic alternative to meet Ontario's needs than the refurbishment of the units, or the refurbishments may not be needed at all due to lower demand for electricity.

The key challenges for solar in this scenario comes in combination with energy storage. As an intermittent resource, developing cost-effective storage technologies will be a factor in the future growth of solar.

These technologies will need to be in the right position by the time that Bruce off-ramp decisions are being made in the next decade to provide an economic and reliable alternative.

The IESO is currently actively engaged on the storage front through a two-phase energy storage procurement process. In the first phase, the IESO selected storage technologies from five companies, totaling approximately 34 megawatts (MW), that will offer ancillary services to support increased reliability and efficiency of the grid. The lessons learned from these projects will be used to understand how to better manage the day-to-day operation of the power grid using electricity storage.

In Phase II, 10-year contracts were offered to five companies for nine separate energy storage projects totaling 16MW. This second phase targeted energy storage technologies with a range of performance characteristics that can store energy when prices are lower and re-inject it at other times of the day when prices are higher and the energy has greater value. This will give the IESO a chance to see how these storage projects work on our Ontario grid and what they can do.

With all of this – the Government’s pending climate change announcement, new technologies, a rapidly changing sector as we look to planning in this context – timing is important. So too is flexibility and the ability to adapt quickly. For the planning work of the IESO, it means that we develop plans that can preserve flexibility by identifying key inflection points, by putting off procurements until absolutely necessary and by giving consideration to short-term solutions. It also means that we need to be informed by the best intelligence available on emerging trends and technologies, how they will change the sector and how this influences the types of resources required. We need a plan for a range of possible futures. We need to continue to work with our partners, like CanSIA, to stay informed on all these developments as we navigate through this uncertainty.

In closing -- one thing we know for sure is that Ontario’s electricity sector will continue to evolve – on the supply side, with evolving technology, with planning and with the organizations that directly serve Ontario’s electricity customers. And it is also certain that solar will continue to be a major renewable energy resource, carefully considered in the long-term planning of the province’s electricity needs.

Thank you for your time.