



Notes for Remarks:

**Electricity Distributor's Association (EDA)
Annual General Meeting**

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Check Against Delivery

Thank you for inviting me to be here today. My name is Peter Gregg and I am *not* a politician, nor do I have any insight into who's going to win the election.

I'm here today to talk about the changes that are happening in the electricity sector, how the IESO and LDCs can work together in the months and years ahead, and what you can expect from the IESO.

Prior to joining the IESO I had the pleasure of being the President and CEO of Alectra Utilities and, before the merger, of Enersource. Before that I was the Chief Operating Officer at Hydro One.

I come from the world of LDCs, and I think that experience is extremely helpful now that I'm at the IESO because I see the relationship between the IESO and LDCs as one that is very important, and that is becoming increasingly true as our sector evolves, which I'll touch on throughout my speech today.

Before I go any further I'd like to say a word about our Board, given the importance of governance to our ongoing success.

The Board has significant diversity, including six female Board members out of 10. Margaret Kelch and Carole Workman chair the two Committees of the Board.

And it has a good blend of business, regulatory, government and industry experience which enables them to effectively carry out their oversight responsibilities. As examples, Tim is former Chief Economist at BMO, Margaret is former President of the Technical Standards and Safety Association, and Cynthia is former Vice Chair of the OEB.

They are also a very engaged and active Board. You will see them in attendance at our Stakeholder Advisory Committee meetings and at events such as the OEA and APPRO conferences in the fall.

There are three primary areas of focus I have for my remarks here today:

The first is our future: The traditional one-way, top-down electricity system is becoming much more decentralized and dynamic due to rapid technological advancement, an increasingly engaged consumer, growth in distributed electricity resources and climate change policies. Most of these trends we're seeing point to an increasingly important relationship between the IESO and LDCs, and I'll highlight some of the key areas of collaboration between us today.

My second area of focus is engagement: Given our increasingly intertwined futures, I will outline what meaningful collaboration with the IESO will look like.

The third is innovation: Enabling innovation will be very important to our future success, and IESO's leadership team is committed to that cause.

Our Future: Sector evolution and key areas of collaboration between the IESO and LDCs

Sector Evolution

Ontario's electricity sector continues to transform at rates of change that continue to energize and challenge us.

Over the last decade, we have retired coal as a generation source. In doing so, we have increased the amount of renewable generation, both on the transmission-connected system and on the distribution system. At the wholesale level alone, wind and solar combined to meet about seven per cent of Ontario's supply needs in 2017. Gas output was down to about four per cent, which means our electricity system is now over 95 per cent carbon-free.

Innovation is allowing emerging technologies to compete with traditional technologies. For example, we recently selected two energy storage facilities through a competitive process to provide a combined 55 MW of regulation service, which is traditionally provided by conventional generators. Regulation services help us balance the grid, correcting for short term changes in supply and demand.

Not only were these technologies the successful proponents in this particular procurement, they represent one of the largest reductions in per-unit regulation costs since Ontario's electricity market opened.

We are also seeing an increasingly engaged customer at all levels, from residential to business to community. We see municipal and Indigenous communities becoming more interested in community energy planning. Our last FIT procurement saw more than 80 per cent participation from Indigenous, community, municipal and public sector entities.

Working with LDCs and large customers, we have also made some real gains in conservation, increasing our energy efficiency. Together with GreenOn and others, we are also now starting to implement the government's climate change action plan.

The result of all these changes is a much cleaner, more competitive, and more reliable system today.

As we look to the months and years ahead, there are many areas that will benefit from close collaboration between the IESO and LDCs. The ones I'll focus on are: distributed energy resources, market renewal, conservation, and implementation of the 2017 Long-Term Energy Plan.

Increasing Distributed Energy Resources

Much of the change that's happening is at the distribution level. There is growing interest and adoption of small-scale generation, electric vehicles uptake, emerging storage technologies, and growing customer interest in being part of the distribution system, including through the development of community energy plans.

The increase in Distributed Energy Resources, or DERs as I will refer to them, in particular is leading to a more decentralized and interconnected system, with more moving parts.

We now have over 4,300 MW of distributed energy resources in service and under development in Ontario, over half of which is solar.

This is a key area of collaboration between the IESO and LDCs for a number of reasons, including the impact on operations, regional planning, and markets.

One forum in which we're discussing operational impacts is the Grid-LDC Interoperability Standing Committee. This year the committee is focused on identifying key operational capabilities that the IESO, DER operators, and LDCs will need to develop to enhance coordination and ensure the reliability of Ontario's electricity grid. Committee members are identifying collaboration opportunities to develop these capabilities.

We're also going to create a Renewable Distributed Generation Integration Fund, an initiative that comes from the government's 2017 Long-Term Energy Plan, and one that will give us valuable operational experience that we can learn from. I encourage you to get involved in our engagement.

In the short term, with an improving DER value proposition and more engaged customers, we're already evolving our planning processes to better integrate distributed resources, and to identify opportunities to leverage DERs to provide new services, such as transmission and distribution investment deferral.

This is something we've heard from communities across the province ... a desire to choose distributed resources as alternatives to traditional "wires" solutions in the regional

planning process. It's a good example of how DERs can improve how we can collectively serve our customers by offering opportunities for greater customer choice.

Evolving our regional planning process to better consider DERs as alternatives to traditional wires solutions is something else we'll be looking at soon as part of our LTEP implementation. I'll speak in more detail about the LTEP shortly.

Learnings about the potential for renewable distributed generation will also come from the Request for Information from non-emitting resources that the IESO issued earlier this month.

This RFI will help us to understand the capabilities of non-emitting resources in Ontario to participate in the new marketplace being established through market renewal. That includes learning about the resource characteristics of renewable distributed generation, and how they can meet future supply needs.

Another area of focus is creating a level playing field upon which DERs can efficiently, fairly, and on a technology-neutral basis compete with *both* transmission and distribution infrastructure and centralized power plants to provide electricity services.

One of the ways we can do this is by integrating DERs into the market. This step would have other benefits, such as providing more visibility of DER activity and properly valuing their capabilities. To this end we will work with our industry partners toward a common vision for an efficient and sustainable marketplace.

As I mentioned, collaboration between the IESO and LDCs will be important from an operations, regional planning, and markets perspective.

Which brings me to one of the most important initiatives that the IESO has taken on since it was first created almost two decades ago and one that really speaks to sector evolution ... market renewal.

Market Renewal

A lot has changed since the IESO opened the wholesale electricity market in 2002. The supply mix has changed significantly, with increasing reliance on renewable sources. New technologies are emerging, and consumers are becoming more engaged in meeting their own needs and contributing to overall system needs.

Yet despite this change, the market design we have today is essentially what we started with in 2002, which means that we are not meeting needs as efficiently as we can, nor are we confident that the current market design can accommodate the needs of tomorrow.

Fundamental changes are required to address these inefficiencies and create a strong foundation for the future.

The changes associated with our market renewal will take time and we are reliant on the advice of our stakeholders to guide us through this process. Given the current positive supply margins we currently have and expect to have through the mid-2020's, now is the time to move forward with these changes.

At a high level, market renewal is about unbundling the products and services we need to ensure reliability, such as flexibility, and making sure that a variety of resources can compete to provide them. This will create new opportunities for many, and I encourage LDCs participate in our engagements to explore what opportunities could be available to them. IESO's Market Renewal Program will result in a more efficient, competitive and transparent electricity market.

Market renewal is essentially focused on two work streams, energy and capacity.

The energy work stream initiatives will improve how our electricity resources are scheduled and dispatched, in real time, hour-to-hour and day ahead. The increased efficiency resulting from these efforts will reduce overall system costs.

Developing an incremental capacity auction is another key feature of market renewal. Building off the success of our demand response auctions over the past few years, an incremental capacity auction can attract a wide range of technologies to compete to meet our energy needs at the lowest possible prices ... again reducing overall system costs for customers.

With respect to the development of new resources, we are cognizant of some of the concerns expressed by representatives of renewable resources like wind and solar and emerging technologies like storage.

Recognizing the need to build on Ontario's clean energy supply mix, we have created a separate working group ... the Non-emitting Resources Subcommittee ... to help inform the market design to better accommodate these resources. We will be looking at barriers for the adoption of these resources. We will also be looking at what reliability services these clean resources can address and how to appropriately incent them.

High level design work on a number of the work initiatives for Market Renewal is underway and in 2018 we will see the bulk of the high level design work completed.

All told our market renewal efforts are expected to result in up to \$5.2 billion in efficiency improvements over a ten-year period. The results of our market renewal efforts will be instrumental in helping to reduce future costs.

Part of these cost savings come from addressing inefficiencies with our electricity market, while the majority are expected to come from the competitive procurement of resources.

Conservation Progress to Date

At the same time as we look to increase competition and stimulate innovation to best meet our future incremental needs, we will also continue to work with our LDC partners to promote conservation.

Our conservation efforts are helping customers manage their costs while also achieving broader system benefits. Every kilowatt hour saved is costing us about two cents, which means conservation continues to be the most cost-effective resource for meeting the province's electricity needs.

When we began the Conservation First Framework and Industrial Accelerator Program in March 2014, many felt the combined 8.7 TWh target by 2020, and LTEP target of 30 TWh by 2032, were aggressive. However, we are seeing great progress and success.

Preliminary results for the first half of the framework indicate that just over 55% of the Conservation First Framework target has been achieved. When taking into account projects in the pipeline yet to be completed and reported by LDCs, about 65% of the CFF target would be achieved.

Meanwhile, the Industrial Accelerator Program has achieved 48% of the recently revised target of 1.3 TWh. It had its best year yet in 2017, achieving 47% more applications and 50% more electricity savings than in 2016.

The IESO began the Mid-term Review of the CFF and IAP in December 2016, which included the establishment of an Advisory Group composed of LDCs, customers, electricity service providers and consultants, as well as a formal stakeholder engagement.

Inputs and recommendations are driving changes to current and future frameworks to further advance the culture of conservation in Ontario, and our province's objectives in a rapidly evolving energy marketplace.

The final meeting of the Mid-term Review Advisory Group took place earlier this month and the final report was posted.

The final report outlines findings and opportunities for the short-term (2018-2020) and key principles for a conservation framework beyond 2020. The IESO remains on track to deliver a report providing recommendation to the Minister of Energy before June 1, 2018.

I want to thank Theresa Sarkesian and EDA members for their ongoing participation in our conservation engagements.

Outside of the Conservation First Framework, we also continue to work with the Ministry of Environment and Climate Change and Green Ontario Fund on the design and delivery of programs aimed at achieving GHG reductions. These programs are also realizing synergies between energy efficiency, gas, and climate change objectives.

Where possible, the IESO aligns Save on Energy and GreenON rebates to provide a streamlined program offering to reduce marketplace confusion and duplication, and to enhance the customer experience.

The IESO is well positioned to support this work with over 10 years of experience in conservation program design and delivery, but it's important that we also build the capacity of LDCs to support this work. As we move forward with GreenON program design, the IESO will actively pursue opportunities for collaboration with LDCs.

One last note before I move on: this evening we will be handing out the IESO-sponsored Conservation Leadership Excellence Award to recognize the demonstrated contributions and achievements of LDCs in the areas of: innovation in program delivery, creation/suggestion of new programs, community leadership and effectiveness in achieving results.

Last year, London Hydro received the award for their contributions in the delivery of the Home Assistance Program to low income customers. I hope you will join us tonight as we recognize this year's recipient.

2017 Long-Term Energy Plan

The last area of IESO-LDC collaboration I want to mention here today is the implementation of initiatives in the 2017 Long-Term Energy Plan. The IESO developed an Implementation Plan that is available on our website which outlines our plan for each of the initiatives. There are a few that I would like to highlight that impact the distribution system:

Renewable Distributed Generation Integration Fund: This initiative will seek projects that will be strategically located and paired with other distributed energy resources and smart grid technologies. The purpose is to demonstrate opportunities to enhance integration into electricity system operations, planning, markets, and regulations.

Removing barriers to energy storage: This initiative will identify potential obstacles to energy storage resources through a review of the market rules, industry codes and regulations relevant to energy storage resources; strategies for mitigating obstacles will be suggested where appropriate. The review will focus on both distribution- and transmission-connected resources within the current structure of the market.

Review and report on the regional planning process: This review will specifically look at how the existing process considers cost-effective alternatives to transmission and distribution infrastructure solutions in the regional planning process, such as conservation and distributed energy resources, and identify any regulatory, policy and administrative barriers for implementing them in a local area.

The EDA's vision paper, *The Power to Connect: Advancing Customer-Driven Solutions for Ontario*, identified the LTEP as an "intersecting initiative" that will help shape the modernization of the grid, along with market renewal and grid-LDC interoperability.

I share this view as it reflects the increasingly interconnected system we are part of, and it speaks to the need for us to collectively stay engaged across the many initiatives underway to ensure we are moving forward in a coordinated and purposeful manner.

Separate engagements are planned for each of the LTEP initiatives at different times, and I encourage your participation in these efforts to ensure your perspective is considered.

Engagement: what meaningful collaboration with IESO will look like?

Stakeholders play a vital role in guiding all our efforts. I can't stress enough the importance of getting input from stakeholders ... that feedback has always been extremely important to me throughout my career and I will continue to do that at the IESO.

We have a number of forums in place to test our thinking and seek advice such as:

- the former Smart Grid Forum – now the Energy Transformation Network of Ontario which I am pleased to chair
- the data strategy advisory council
- the cyber security forum, and the
- Stakeholder Advisory Committee

I know the EDA is active in our engagements, especially in our conservation groups and committees, which is great.

I want to build on these existing forums and make them more useful. I want to make certain our engagement efforts are worth the investment of your time – that they are purposeful, efficient and effective. Not engagement simply for the purpose of engagement.

I believe that we can be more purposeful and crisp in these stakeholder forums – with clearer objectives and a disciplined process.

Enabling innovation, an organizational focus

The IESO's leadership team and organizational structure has undergone a lot of change since I joined about nine months ago, but I believe we are now in a good position to meet the needs of our evolving sector alongside our stakeholders.

This includes an organizational emphasis on innovation. Innovation can open up new opportunities for stakeholders and customers, drive down costs, and lead to a more efficient and effective electricity grid.

Going back to what I said earlier about how our sector is evolving—including all the areas of IESO-LDC collaboration I discussed—our ability to both drive innovation, and manage innovation happening across the sector, will be critical to our success.

At the IESO this is an area of responsibility that lies with Terry Young, who also continues to lead our conservation and engagement efforts.

We are welcoming two new members to our executive leadership team this week. Marcia Mendes-d'Abreu, who will be our Vice President of Human Resources, and Alex Foord, our new Chief Information Officer.

Alex is inheriting two areas of innovation at the IESO that I want to touch on briefly, both of which include a role for LDCs – cybersecurity and the Meter Data Management Repository, or MDM/R.

Alex will lead our enterprise-wide cybersecurity management program and ensure that cybersecurity needs are addressed both across the organization and with our external partners.

Cybersecurity is at the core of the IESO's role in maintaining the safe and reliable operation of Ontario's power grid and a reliable supply of electricity for Ontarians, and we take this job very seriously.

This is an area where innovation is a necessity. There is no doubt the sophistication of cyber threats will continue to evolve, and we must ensure our cybersecurity protections are one step ahead.

For us, ensuring effective cybersecurity management comes down to three main things:

1. Continuously strengthening our organization's security posture
2. Ensuring compliance while driving innovation, and
3. Establishing strategic partnerships to innovate cyber defense

As our new Chief Information Officer, Alex will help us bring together sector counterparts, as well as the world's leading cybersecurity policy experts to share best practices in addressing existing and emerging cybersecurity issues to improve cybersecurity within Ontario's electricity sector.

To support our in-house team of cybersecurity specialists, we have established a robust security operations centre to provide 24/7 real-time cybersecurity monitoring that will assist with incident detection and response.

As we've seen recently, the federal government has committed to significant investments in cyber threat management at the federal level. The IESO is working with the Communications Security Establishment, Canada's cryptographic agency. We are exploring integrated information and data sharing in defending cyber-attacks, and working on ways to proactively address mutual cyber issues.

Of course cybersecurity is not limited to the province-wide grid, and in our increasingly interconnected sector, collaboration between the IESO and LDCs will be important. To that end I encourage you to get involved in our cybersecurity forum.

For the MDM/R, third party access offers significant potential for data usage and innovation. It offers an important opportunity for the IESO and other rigorously screened third parties to take raw consumption data – stripped of all personal identifying information – and leverage it for other purposes.

For example, energy mapping could help identify priority areas in which to implement programs for energy efficiency and distributed generation. Other potential uses include:

- Conservation and demand management program design
- Load forecasting and modelling
- Transmission and distribution planning; and
- Development of apps and other energy management tools

The IESO is currently seeking input to inform an implementation plan to provide interested third parties access to de-identified meter data available in the MDM/R.

At the core of the implementation plan is a data de-identification methodology, which is the gold standard in the disclosure control community and is aligned with the Information & Privacy Commissioner's De-identification Guidelines.

We have a few engagement forums in which we are engaging with LDCs and others:

- The Data Strategy Advisory Council that advises on the Third-Party Access initiative, whose members include Alectra, Hydro One, Toronto Hydro, Waterloo North Hydro, Hydro Ottawa and Essex Power Lines;
- The Smart Metering Steering Committee, which meets five times a year and includes an LDC open call; and
- the Annual Smart Metering Entity-LDC Conference

In closing, there is a lot of change occurring in the sector and the relationship between the IESO and LDCs will be critical. From DERs to conservation, and market renewal to cybersecurity, our futures are in many ways intertwined.

It's clear to me that we can't accomplish much in this industry alone. Ours is an industry that is increasingly interconnected, requiring an ongoing dialogue where we can share our unique perspectives so we can effectively meet the evolving needs of the sector.

LDCs will be critical to these conversations, and I commend the EDA for providing a collective voice for many of Ontario's LDCs.

We will continue to engage with you, and I encourage you to watch for, and participate in, our many stakeholder engagements. I also look forward to seeing how LDCs innovate, and how the IESO can help foster that innovation.

Through our collective efforts we will build on the successes we have achieved, embrace the future changes that are in store for our sector and continue to contribute to the economic, social and environmental prosperity of this province.

Thank you for having me here today.