



Notes for Remarks:

Rural Ontario Municipal Association

January 28, 2019

Terry Young

Vice President, Policy, Engagement and Innovation

Independent Electricity System Operator

Check Against Delivery

Thank you to ROMA for having me here again this year.

I am glad you have decided to join me today.

In my remarks today, for those of you who are new to the IESO, I want to talk a bit about what we do and the way we do it, including working with Ontario communities to ensure that you continue to have a reliable and cost-effective electricity system. I also want to talk a bit about how your community can look to address some of the cost pressures you are facing ... become more energy efficient and reduce those costs. And finally, I want to outline some of the priorities that the IESO has for the coming year.

Let me start with a little background on the IESO.

The IESO is a not-for-profit corporation, with no financial stake in the industry.

- **First and foremost, the IESO manages the reliability of the province's electricity system, ensuring that electricity is available when and where it's needed.** That means operating and directing the flow of electricity across the province's transmission system in real time, planning from the next five minutes out to the next 20 years and acquiring the resources we need to meet demands now and in the future.
- **We also work closely with communities across the province to explore regional electricity needs and to inform possible solutions.** Engaging with communities is a vital part of maintaining a reliable electricity supply. I'll touch on some of the ways we do that in a moment.
- **The IESO also oversees Ontario's conservation or efficiency efforts.** Energy efficiency goes beyond lowering electricity bills. It is the most cost-effective energy resource in Ontario.

Through these conservation initiatives, Ontario has saved **15.4 TWh** of electricity since 2006. This is the amount it would take to power 1.7 million homes – or a third of the homes in Ontario – for one year.

We work with your distribution companies and others to make to make these programs available.

At the IESO, we're also continually focused on finding new and innovative ways to meet system needs, foster and improve competition, and deliver efficiencies across all our businesses. As far as change is concerned, the electricity sector has gone through a significant transformation in the past decade; the way we both generate and consume electricity has and continues to change.

As I mentioned, planning for the future is a big part of what we do. Planning for Ontario's electricity future is done at different levels.

Bulk transmission system planning typically focuses on the electricity resources that take the energy from the generation source to local distribution companies across the province. Our bulk system also addresses provincial electricity needs and broader policy direction, such as assessing the impact of refurbishment of nuclear facilities or energy policies on the electricity system.

At the other end of the spectrum, local distribution companies carry out distribution network planning to address local electricity needs and priorities at the community level, such as building distribution infrastructure to connect a new subdivision or delivering energy-efficiency programs.

And finally, regional planning looks at each region's unique needs and considers generation, transmission and distribution, and innovative resources to meet those needs in more of a local context.

Our commitment to working with communities – large and small, rural and urban – is core to ensuring the reliability of the province’s power system on behalf of all Ontarians. And since no two regions are alike, regional planning is critical.

There are 21 electricity regions across the province, divided based on electrical infrastructure boundaries. Regional planning assesses the adequacy and reliability of electricity supply to customers in a local area and looks at each region’s unique needs, considering generation, transmission and distribution, and innovative resources to meet these needs.

The outcomes inform the creation of 20-year plans that summarize the electricity needs and recommend infrastructure investments or near-term actions to maintain reliability of supply for a local area.

But we can’t do this on our own. We need the input of LDCs, transmitters, municipal planners, and members of communities, like yours, to inform our decision-making.

At the IESO, engaging with stakeholders and communities to understand the issues from every possible angle is part of our DNA. Because enabling informed decision-making doesn’t happen by accident, we follow specific guidelines and principles whenever and wherever we reach out.

Central to every engagement is our commitment to:

- Promoting openness and transparency
- Providing effective communications and information
- Ensuring inclusive and adequate representation
- Analyzing opportunities for engagement
- Providing effective facilitation
- Communicating outcomes and;
- Measuring satisfaction

So, what we want to do is talk to you and your municipal colleagues.

This helps us get a better idea of local electricity needs, concerns and plans, including long-term land use, infrastructure corridor, local economic development plans and level of interest in community-based energy solutions.

We use this information to evaluate options, identify risks and recommend solutions that are in line with provincial policy direction and overall system needs.

A perfect example of the vital role community and stakeholder engagement plays is what is happening in southwestern Ontario. The regional electricity plan for the area was completed in 2015. However, in that short time, demand has increased far beyond reasonable expectations, driven by increases in the number of greenhouses in the area, and even the growth in cannabis production.

So there is clearly an electricity need to meet in that area. And we are working on a plan for the communities in that region to ensure that transmission and other supply needs are addressed with the lowest-cost solution. We would do this by leveraging competitive forces, driving innovative solutions and providing new opportunities for transmitters and other solution providers to participate in Ontario's electricity market.

One of the many ways we engage with communities is at our regional forums. We hold these events annually – usually two in the fall and two in the spring – with our next two in Kingston on March 21 and Thunder Bay on April 10.

These full-day forums are an opportunity to bring together a cross-section of community and business audiences representing municipal, Indigenous communities, local distribution companies, energy services and associations to explore the future direction of the electricity sector.

We know that we need to improve the frequency with which we communicate with you and open more channels for that dialogue.

We are putting the final touches on a regional electricity network that will ensure ongoing conversations with communities, establish local contacts to inform future discussions and support initiatives like regional and bulk planning processes. It's going to take stakeholder engagement to a whole new level so stay tuned.

I just want to spend a moment to tell you about a few ways the IESO works with communities to help reach their energy goals.

The first is our energy managers program.

For over half a decade, the IESO – through its Save on Energy program – has provided financial support to Ontario's large electricity customers across the commercial, institutional (including municipalities) and industrial sectors to hire in-house, full-time energy managers.

These energy managers are responsible for increasing participation in existing energy-efficiency programs by identifying and implementing energy-efficiency projects, and for influencing long-lasting behavioural change in the facilities they manage.

In Ontario, we have created a successful program that helps customers save energy and transform their organization to drive their costs down. And we have also built market capacity and a pool of energy management professionals essential to the achievement of Ontario's energy-efficiency needs.

I am proud to say more than 100 energy managers are in field representing every economic sector and actively supporting the achievement of our 8.7 TWh target by 2020.

There are eight municipal energy managers – two of which received awards at an annual energy manager event the IESO held in December.

The City of Markham's energy manager received an award for most innovative

The City of Mississauga received an award recognizing the achievements and success of an energy manager that is not funded through the program

The Town of Caledon also received an honourable mention for the efforts of its energy manager in driving energy efficiency projects and initiatives.

The energy manager program is just one example of the many successful energy efficiency programs offered by the IESO for municipalities, small and large business and consumers.

We support incentives for clotheslines and block heaters, home energy audits, rebates for pool pumps, and customized energy management plans for hotels and motels.

As I said earlier, energy efficiency is about more than just lowering electricity bills. Energy efficiency also helps offset changes in the demand for electricity on the system at the local, regional and bulk electricity system level.

Every dollar invested in energy efficiency avoids \$3 in investments in new transmission and distribution infrastructure.

We also know that energy efficiency adds to the Ontario workforce and strengthens the economy. According to a report by Dunskey Consulting for Clean Energy Canada, the implementation of energy-efficiency actions through the Pan-Canadian Framework on Clean Growth and Climate Change will add almost 53,000 jobs in Ontario and \$12.5 billion annually to the province's GDP between 2017 and 2030.

Let me tell you about KI Canada, a furniture manufacturer in Pembroke. In 2013, they set a goal to lower their energy use by 10 per cent. They didn't just meet this goal; they surpassed it, reducing energy use by 30 per cent and saving \$300,000. In the years following, they achieved even greater reductions, totalling millions in savings.

Their success was realized by making improvements to their operations and equipment through Save on Energy programs and by creating a behavioural shift in their workforce. In embracing energy efficiency, KI Canada ignited a change in employee culture, which helped keep energy savings top of mind.

We continue to build on successes like KI Canada and the hundreds of other businesses that have embraced the opportunity to change how they consume electricity, and evolve how we consider energy efficiency in managing the reliability of Ontario's electricity system at lowest cost. That includes transforming the markets: being less prescriptive, introducing more competition, and shifting to defining the need and letting the market determine how best to fill the need.

Before I move onto the IESO's priorities for the next year, I'm just going to touch on a project that I think will be of interest to you as municipal leaders.

For those of you who were here with me last year or are involved in the IESO's community outreach, you will know about the Municipal Energy Profile report that we released about this time last year.

It was produced in collaboration with a number of municipal stakeholders to gain more insight into the current state of municipal energy use in Ontario, with a focus on future trends and sustainable energy improvements.

We also wanted to be able to equip you with valuable data and analysis to inform the creation of your municipal energy plans. The whole report can be found on our website.

It's an interesting read that I highly recommend.

For my time today, I want to focus on one part.

According to that report, water and waste water treatment represent the largest energy use for most municipal governments and over a third of municipal energy consumption in Ontario. These facilities are also among the least engaged in energy-efficiency opportunities.

So, we decided we needed to take a deeper dive and undertake a detailed study on water and wastewater that will be published to the IESO website by the end of February.

One of the most notable findings in the study is the significant opportunity around process optimization, rather than capital upgrades, for municipalities to reduce their electricity consumption.

In addition to energy savings measures, the sector has two unique opportunities, in load shifting and methane-recovery (created in the wastewater treatment process) to create heat or electricity, which can help municipalities save energy and money.

Using this study, municipalities can benchmark their facilities to identify areas of opportunity for savings.

The IESO plans to distribute the report through municipal and water-sector channels, and work with partners to ensure they are aware of the range of opportunities

The IESO is also working with partners to develop a water-sector-specific energy training for water facility operators to capitalize on these identified savings opportunities.

This new water study will be used in the IESO's outreach with the municipal sector, in conjunction with the Municipal Energy Profile study that was published last year and identified the W/WWT sector as a key area of opportunity.

The bottom line: if you think you are spending too much on the energy to power your water and waste water treatment facilities, please contact us. You can find out how to take advantage of programs and training to capitalize on the full range of opportunities outlined in the report.

Finally, I want to give you a sense of what we've been up to since I was last here, outline our plans for the next 12 months and talk about how we can work together to make these priorities into reality.

We'll start with one of the biggest projects undertaken to date to better manage – and in this case, reform – the electricity markets. And that's our Market Renewal Program.

The markets that we are operating today to help balance supply and demand for electricity at the lowest costs have remained relatively unchanged since they opened in 2002, and are in need of major reforms.

The refresh that is underway will allow us to accommodate the developments we have seen since then – these include changes in the types of energy sources, consumer behaviour, technology and approaches on how to use competition more effectively.

As a result of our market renewal efforts, we are expecting to see savings of approximately \$3.4 billion over a 10-year period.

There is so much to say on this topic but I would like to focus the next few minutes on just one of the initiatives – an incremental capacity auction.

Over the years, Ontario and other jurisdictions have used different approaches to meet medium- and longer-term electricity needs. Most recently, Ontario has relied on a series of long-term contracts that generally provided some form of guaranteed supply and annual revenue to generators for periods of 20 years or more.

These contracts addressed energy shortfalls as they arose by adding tens of thousands of megawatts but they lacked flexibility, leading to higher costs for consumers.

This is because our needs fluctuate from year to year. And while long-term contracts address the largest gap between supply and demand in any year, they can also lead to payments for excess electricity in years when the need isn't as great.

It also means the price we pay for supply may not be as competitive as it could be, especially when technology improves and gets less expensive or system needs change over time.

Imagine signing a 20-year contract with your cable TV service. In five years' time, prices could be lower, new competitors may have entered the market, or entirely new and innovative platforms and services may have emerged (*think Netflix*). Locking in means you'd miss out on opportunities to improve your circumstances.

The introduction of an incremental capacity auction at the end of 2022 is expected to drive significant benefits for Ontario ... much of the \$3.4 billion in savings that I spoke about a moment ago comes from our future reliance on a capacity auction.

But we aren't going to wait until 2022 to leverage the benefits of the incremental capacity auctions. We have a staged approach to a more competitive marketplace.

Our goal is to build on the features of a current auction we hold every year for consumers that provide demand response. (*Demand response is when a consumer adjusts*

their electricity use to match real-time system needs, and it helps us to balance supply and demand in the same way a generator does.)

We're going to allow more resource types, including generation resources, to compete in these auctions, and ultimately start driving down costs for consumers sooner.

This staged approach will allow both the IESO and market participants to continue to learn and improve our processes as capacity needs increase. It allows us to realize efficiency, competition and transparency – the key principles of our market renewal efforts – as quickly as possible.

Let me switch gears for a moment and talk about something that has been a priority for the IESO – dealing with growing cybersecurity threats.

The IESO has become the first system operator in North America to lead the sector on cybersecurity matters.

Through our leadership, we help protect Ontario's power grid from cyber threats and leverage the comprehensive cybersecurity governance framework that we already have in place for our own operations.

In support of this, we have established partnerships with the Canadian Centre for Cyber Security. The Cyber Centre is the central trusted government source of cyber security information, advice and guidance for Canadian enterprises, critical infrastructure owners and operators, and Canadians.

It's having also established a new Security Operations Centre. This centre will provide actionable information, in a near real-time capacity in order to improve incident detection and response capabilities across our sector.

Recognizing that we have an important leadership role in this area, we are also working with all local distribution companies to facilitate the sharing of centralized cybersecurity information. This includes bringing together our sector counterparts, as well as the world's leading cybersecurity policy experts to share best practices in addressing existing and emerging cybersecurity issues within Ontario's electricity sector

While cyber threats have introduced a host of new demands on the sector, the way electricity is produced and consumed has also changed significantly.

New technologies are coming at us quickly ... and the potential of these new technologies and services to increase reliability and reduce costs is significant. But the risk in the adoption of these innovative approaches has also increased.

Last year, working with an extensive group of stakeholders, the IESO developed an innovation road map. This road map sets out a framework and focus for electricity sector innovation.

As part of our innovation efforts, we will be spending time on distributed energy resources or DERs. These are the sources of electricity that can either store or generate electricity or can adjust energy consumption. Examples include solar on rooftops, battery storage and even consumers that adjust their energy use based on electricity price and other signals.

Storage is one type of DER that will be a priority for us this year. Energy storage technologies allow electricity to be stored and re-injected back into the grid when it is needed, helping maintain that important balance of supply and demand and ensuring a reliable grid. These resources need to be able to compete in the delivery of market services and be effectively integrated into the system to ensure that the potential value is realized.

The IESO recently released a report that identified the significant barriers to the participation of energy storage in the current marketplace.

We will be working with our Energy Storage Advisory Group to help make the report recommendations a reality for this important resource.

So, you've heard me speak a lot about community engagement today. Before I wrap up, I'd like to show you a short video so you can hear directly from those that have been involved in discussions about their community's energy future.

It's a great summary of why we need to hear from you.

If you take one thing away from our time today, I hope it is that we are planning for a resilient, reliable and cost-effective system to meet the needs of all Ontarians – one community at a time. And since no two communities are alike, we need to know more about what you want your energy future to look like.

If you would like a more in-depth conversation about some of the topics I've raised today or issues of specific concern to your community, we could arrange a meeting. We could also address your council about community energy planning and economic development or go over in more detail the outcomes of the research I mentioned earlier.

Contact us anytime and we'll find a way to work together and provide you with the information you're looking for.

Thank you for your time and attention today.