2017 Long-Term Energy Plan – Hydro One Board Presentation
Speaking Points

Slide 2 – Purpose

- Good evening.

- If you've had an opportunity to review the 2017 Long Term Energy Plan, you will see that it builds on the significant investments the province has already made to green the electricity system.

- Ontario is now well positioned to use its clean and reliable electricity system to decarbonize other sectors, such as transportation.

- The way we deliver and use energy is transforming and as a result, innovation and choice are at the core of the 2017 LTEP.

- At the same time, the government recognizes that affordability is a priority for Ontario's energy consumers, and the 2017 LTEP highlights the work the government has already done through Ontario's Fair Hydro Plan.

- Now, I'd like to turn to slide 2, which outlines our three part presentation covering the LTEP process, modelling assumptions as well as key themes and initiatives.

Slide 4 – Long-Term Energy Planning Process

- The process for developing the LTEP is set out in the Electricity Act, 1998. These provisions became law in summer 2016, making the 2017 LTEP the first to follow this new legislation.

- Our process began with the publication of two technical reports in the fall of 2016. The *Ontario Planning Outlook* and the *Fuels Technical Report* present outlooks on the adequacy and reliability of Ontario's electricity and fuels sectors, respectively to 2035.

- These reports allowed the ministry and stakeholders to start from a common understanding in advance of the LTEP consultation and engagement period from October 2016 to January 2017.

- Now, with the government's approval of *Delivering Fairness and Choice,* The implementation directives have been issued to the IESO and OEB. The agencies will develop plans to implement the LTEP's goals and objectives and submit these plans to the Minister for review.

Slide 5 – Engagement with Ontarians

- The Ministry held extensive engagement beginning in the fall 2016 and ending January 2017to support LTEP development.

- We sought feedback through 17 stakeholder roundtable sessions, as shown on this map, which were attended by over 500 stakeholders. Hundreds more people attended one of 17 public open houses in communities across the province.

- We also organized 17 Indigenous engagement sessions with First Nations and Métis. The Ministry met with almost 100 Indigenous communities and organizations at these sessions.

- We received:

    - 1,500 submissions posted through the Environmental Registry;

    - a few hundred letters, emails and paper submissions; and

    - over 2,000 comments through an online survey.

- This input was critical to developing the initiatives that we will describe later in this presentation.

Slide 7 – Ontario's Supply Mix

- Ontario is unique from other jurisdictions in that it has a <u>diverse</u> supply mix. In 2016, Ontario produced:

- **More than 50 per cent** of its electricity from nuclear power;
- With renewable (or non-greenhouse gas (GHG) emitting) resources providing **about 30 per cent**; and
- Emitting resource accounting for **less than 10 per cent** of total generation.

- Conservation also helped by reducing energy consumption by **about 9 per cent**.
- This is a significant transformation compared to 2003, when one-third of all generation came from emitting resources. Ontario now has an electricity system that is well-positioned for the future.

Slide 8 – Supply and Demand Outlook

- The 2017 Long-Term Energy Plan (2017 LTEP) forecasts that electricity demand will be relatively steady over the planning period.
    - In the longer term, the Independent Electricity System Operator (IESO) projects an increase in overall demand as electrification of the economy increases.
    - Should be noted that the 2017 LTEP demand outlook assumes the equivalent of approximately 2.4 million electric vehicles by 2035 and includes demand from new electrified transit across the province (i.e., GO Rail and lite rail projects).
- As for supply, the 2017 LTEP supply outlook over the planning horizon maintains the flexibility to respond to future variations in the supply and demand forecasts.
    - While there is currently an adequate supply of electricity, a shortfall in capacity is expected beginning **in the early-to-mid 2020s** as the Pickering Nuclear Generating Station reaches its end of life, and nuclear units at Darlington and Bruce are temporarily removed from service for refurbishment.
    - In addition, 18 GW of existing supply resources will reach the end of their contact term by 2035.

    - The need for additional capacity will be met through IESO's Market Renewal.

- To ensure that our electricity system is able to respond to increases and decreases in future demand, we are maintaining our 2013 LTEP policy of "planned flexibility".

Slide 9 – Electricity GHG Emissions Profile

- In 2016, about 90 per cent of the electricity used in Ontario was free of greenhouse gas (GHG) emissions – generated from non-emitting resources such as water, nuclear, wind, solar and bio-energy.

    - Our investments in these types of clean generation resources, along with the elimination of coal-fired electricity generation, have significantly reduced GHG emissions in the province.

- The 2017 LTEP notes that GHG emissions are expected to remain well **below historical levels** and to **be relatively flat** over the planning period (with a range of potential emissions outcomes).

- Ontario will continue to look for ways to keep GHG emissions in the electricity sector low and work with non-emitting generators to meet the Province's emissions targets.

Slide 10 – Progress on Residential Electricity Prices

- The 2017 LTEP's outlook for residential prices shows progress compared to earlier LTEP outlooks in the 2010 and 2013. The residential price outlook remains below levels projected in the 2013 LTEP outlook for the full planning horizon due to:

    - Ontario's Fair Hydro Plan;

    - Removing costs from the electricity system;

    - More efficient consumption of electricity; and

    - Anticipated benefits from implementing initiatives, such as IESO's Market Renewal project; and

- The 2017 LTEP highlights that Ontario's Fair Hydro Plan lowers typical residential electricity bills by 25 per cent and will hold any increases to the rate of inflation for four years.

    - Following the inflationary cap, residential electricity rates increase at an average of about **5 per cent over the 7-year period from 2021 to 2027**, levelling out by the early 2030s.

- The government remains committed to managing electricity rates and avoiding sharp increases by driving efficiencies and taking additional costs out of the system.

Slide 11 – Industrial Prices in-line with Inflation

- The 2017 LTEP price outlook for large industrial consumers reflects average increases of electricity **in-line with inflation** over the planning period.

    - It should be noted that the actual electricity price paid by a large industrial consumer is dependent on their consumption patterns and can vary among industries and specific consumers.

- Currently, the **electricity price** for industrial consumers in Ontario is lower than the average price in the Great Lakes region (as highlighted by the U.S. Energy Information Administration).

- Consumers in Northern Ontario that participate in the Northern Industrial Electricity Rate (NIER) Program can achieve even lower rates.

    - Participants in the NIER Program, **which is funded through provincial revenues**, receive a reduction of 20 dollars per megawatt hour.

Slide 12 – Key LTEP Themes and Initiatives

- As I mentioned before, thousands of Ontarians participated in the LTEP engagement sessions by attending in-person sessions or by sending the Ministry feedback.

- The feedback we received was reviewed and considered in the development of the *Delivering Fairness and Choice*.

Slide 13 – Consumer Focus

- Energy consumers are at the center of *Delivering Fairness and Choice*. We want to highlight 4 initiatives:

    - Regulation of unit sub metering providers

    - The redesign of electricity bills

    - Ensuring quality of service provided by distributors and transmitters

    - Improving regional planning

- Ontario has made continuous enhancements to its energy consumer protection framework, most notably by prohibiting the signing of retail energy contracts at the door. Ontario will continue this work by providing the Ontario Energy Board with increased authority over Unit Sub-Metering Providers, those companies that provide services to bill tenants of multi-residential buildings

- We will work with the OEB and local distributors to re-design electricity invoices for low-volume consumers. This re-design will focus on providing consumers with the information they find most useful at a glance, and ensure the bill provides clear explanationsof costs.

- With respect to reliability, we will look to the Ontario Energy Board to enhance utility accountability to their customers.

    - For example, Hydro One, with 1.3 million distribution customers, currently reports system-wide averages across its large,

geographically diverse service territory. We'd like to provide customers with reporting that is more meaningful to them.

    - In some jurisdictions, like Michigan, customers can receive a credit if their utility fails to restore power within a specified period of time. We would like to see incentives and consequences to ensure utilities are held to account for performance.

    - We will ask both the Ontario Energy Board and IESO to review existing standards and recommend options for improving reliability.

- In support of Ontario's Open for Business strategy, we will engage the mining sector and other large industrials to discuss opportunities to improve grid connection processes.

Slide 14 – Transmission Planning

- Since 2013, the IESO and utilities have engaged communities in a formalized regional planning process. The first round of planning has recently been completed and we now have an opportunity to look at the challenges and opportunities.

    - The IESO will conduct a review that will look at things likeBarriers to non-wires solutions such as conservation, demand response and other distributed energy resources.

    - For example, non-wires solutions can offset the cost of transmission and distribution infrastructure, and we've asked both the Board and the IESO to look at reforms that can help ensure utilities are incented to implement the optimal investment planning decisions.

    - The review will also look at ways to better integrate regional planning with community energy planning and distribution and bulk system planning.

- The government also direct the IESO to establish a formal process for planning the bulk system.

- Consistent with the *Energy Statute Law Amendment Act, 2016*, the government directed the IESO to develop a competitive selection or procurement process for transmission, and to identify possibly pilot projects.

- Equipment reaching end of life presents opportunities to ensure that the new or refurbished facilities are "right-sized".

    - We will look to the IESO and the OEB to promote a co-ordinated, long-term approach to the replace of end-of-life transmission and distribution assets.

- There is a need for a transmission corridor in the West GTA. The LTEP highlights that there could be additional costs of hundreds of millions of dollars to build underground transmission lines later, if an overhead transmission corridor is not reserved before the area develops.

- The Provincial Policy Statement, 2014 and Growth Plan for the Greater Golden Horseshoe (2017) support the planning of protection of transmission corridors to meet current and projected needs.

Slide 15 – Encouraging and Enabling Innovation at the Distribution Level

- The primary focus in this section is creating the right environment for innovation to happen. Ontario has already shown leadership in this space – Green Button, smart meters, and the Smart Grid Fund – but we're now running up against barriers to further innovation.

- We also want to promote continuous improvement in local distributors, particularly in the performance measures that customers care about. We've directed the OEB to review its processes to enhance this performance, and this could include reviewing the LDC Scorecard to ensure it is capturing performance trends well and helps consumers hold distributors accountable.

Commented [MS1]: Suggested initiative example for bullet #1 on slide 15

- The government's Grid Modernization Policy focuses on addressing these barriers so utilities can innovate and make investments that improve efficiency, reduce costs, and provide more choice to customers.

    - For instance, we know that use of innovative non-wires solutions that can allow utilities to manage their systems better and encourage customer choice – but there is a lack of clarity as to how these investments are treated and valued during the regulatory process.

- We will work with the Ontario Energy Board to address this and other barriers to innovation during LTEP implementation.

- A renewed and enhanced Smart Grid Fund will support these outcomes, helping to stimulate technological innovation while creating jobs and business growth. I know Hydro One has been an active participant in the Smart Grid Fund, in projects ranging from dynamic pricing to home management energy systems, and I look forward to your continued involvement.

- We are also taking steps to better integrate electric vehicles onto the grid. including looking to the OEB to facilitate utility participation in residential smart charging.

- The Ministry also recognizes the unique properties of energy storage, and how traditional market rules can inhibit the deployment of this technology. We will work to remove barriers that disadvantage energy storage. This will be done by amending government regulations – including the application of Global Adjustment – and working with agencies to address market rules and codes.

- We are continuing to enhance Ontario's net metering framework, giving customers new ways to participate in renewable energy generation while also reducing their electricity bills.

- The government intends to bring forward proposed legislative and regulatory amendments that, if passed, would enable third party providers to own and operate net-metered systems.
    - Under the province's current net metering framework, a homeowner or business must own the net metered system which

generates electricity for their self-consumption, meaning that the consumer and generator are one in the same.
    - Allowing third-party ownership of net metered systems can support greater customer choice in generating renewable energy.

    - **Barrier/Opportunity:** Home and business owners could have third parties own and operate solar systems on their roofs, at low or no upfront cost to them, and benefit from reduced electricity bills. Companies like Solar City offer these types of services in the United States under third party ownership models.

- We will also be proposing legislative and regulatory changes to provide flexibility for LDCs to pursue or facilitate virtual net metering demonstration projects.

- Feedback from LDCs helped to inform our policy direction on this.

- We are taking a measured approach, allowing for innovative projects to proceed while also not binding LDCs to offer virtual net metering.

- We plan to select and deploy virtual net metering projects through a renewable distributed generation program to be developed with the IESO.

    - **Barrier/Opportunity:** Renewable generators can build facilities where it makes the most sense and apply credits from the generation to customer's bills that are located elsewhere. VNM projects are already being discussed in Oxford County and London as ways to reduce dependence on fossil fuels and save money on electricity bills.

- The program will support a select number of innovative renewable distributed generation projects, strategically located and paired with other distributed energy resources.

- Demonstration projects will help us to gain practical experience and insight into the value that distributed energy resources can offer, such as reducing load on the electricity system and providing services to the bulk system and local grids.

- **Barrier/Opportunity:** LDCs could work with private companies to implement innovative solutions to distribution system issues. Con Edison in New York recently deployed a mixture of distributed generation, storage, smart grid technologies and energy efficiency as a non-wires alternative to distribution system upgrades. Similar deployments would be possible under this program.

- With the potential for greater proliferation of distributed energy resources, this program will help to inform future grid modernization and net metering policies, as well as enable innovative customer-utility relationships.

Slide 16 – Support First Nation and Métis Leadership and Capacity

- Previous LTEPs identified the importance of Indigenous participation in the energy sector.
- Ontario will continue to build on the direction established in the 2013 LTEP and support First Nation and Métis leadership and capacity in an evolving energy sector by:
    - Continuing to advance the connection of remote First Nations to the grid and working with the communities that are not economic to connect to the grid to reduce their reliance on diesel generated power through innovative, community-specific solutions.
    - Promoting community energy planning and supporting projects and initiatives identified in those plans, such as conservation and community-scale generation.
        - Working with Indigenous communities on electricity affordability, improving conservation programs and finding ways to remove barriers to project funding and financing, such as lack of capital at reasonable terms, high financing

costs, and a shortage of capacity around financing and building partnerships.

Commented [SE2]: Direct from LTEP 2017

- Ontario is committed to advancing the government's relationship with Indigenous peoples in the spirit of the Political Accord between First Nations and the Government of Ontario, and the Métis Nation of Ontario-Ontario Framework Agreement. Ongoing engagement with First Nations and Métis on energy issues will help strengthen these relationships.

Slide 17 – Conservation and Energy Efficiency

- Ontario's commitment to conservation and energy efficiency will be strengthened through several initiatives:
    - To promote the energy efficiency of distribution systems, electricity savings from in front of the meter conservation projects will be able to count towards LDC conservation and demand management (CDM) targets under the 2015-2020 Conservation First Framework. We encourage Hydro One to consider areas of its distribution system that could benefit from in front of the meter conservation technology.
        - **Barrier/Opportunity:** A study commissioned by the government (i.e. Navigant study available via the OER) found that the key barrier to deploying these technologies in Ontario is that LDCs are not incented to undertake in front of the meter conservation projects through the existing regulatory frameworks.
    - We will be enabling demand response resources to compete with other supply-side resources as part of Ontario's transition to a capacity auction. As I'm sure this audience is aware, demand response initiatives can reward electricity customers for reducing their electricity use when system needs arise. These initiatives can enhance reliability of the electricity system, while reducing system costs and greenhouse gas emissions;

        - **Barrier/Opportunity:** Currently demand response resources have limited opportunities to compete directly with traditional sources of generation.

    - We will be expanding the Green Button initiative province-wide to improve customer access to energy usage data and tools that can help them identify conservation and energy efficiency opportunities. We are planning to post a Green Button regulatory proposal on the Environmental and Regulatory registries for public comment in the coming months. We acknowledge Hydro One's early leadership in piloting the Green Button standard, and would encourage Hydro One to provide feedback on the proposal.

        - **Barrier/Opportunity:** Currently customers are challenged in receiving their consumption data in an automated and consistent format making it difficult to easily analyze data and find greater conservation opportunities, including sharing data with third party applications.

Slide 18 – Responding to the Challenge of Climate Change

- We are aligning our conservation efforts with the Province's climate change goals, including by:

    - Phasing out the eligibility of Combined Heat and Power projects which use supplied fossil fuels for incentives under conservation programs, starting July 1, 2018. For clarity, projects that are already in-service, under contract, or that submit an incentive application by July 1, 2018 will not be affected by this policy decision. IESO will be communicating further details to LDCs.

        - **Barrier/Opportunity:** Incentives of combined heat and power projects are being phased out to meet Ontario's climate change goals. Based on the current and projected Ontario supply mix, the IESO has concluded that natural gas fired combined heat and power projects on average result in GHG emissions

that are over four times the marginal GHG emissions rate of the electricity system.

- And, working with our colleagues at the Ministry of the Environment and Climate Change and our respective agencies, to coordinate existing energy conservation programs with new low-carbon technology programs being rolled out by the Green Ontario Fund. We encourage Hydro One to provide feedback on opportunities for program integration through the Mid-Term Review.

    - **Barrier/Opportunity:** Our goal is to ensure new Green Ontario Fund programs complement and build on the success of Ontario's suite of existing conservation and energy efficiency programs.

- Government support for transition to a low-emission economy through:
    - Analysis of impact of electric mobility on the grid; and
    - Shift to renewable natural gas (RNG), power-to-gas and lower-carbon gasoline and diesel fuel standards.