

LTEP Technical Deck Speaking Points

Slide 2 – Purpose (Deputy)

- We are here today to walk you through the technical details of Ontario's 2017 Long-Term-Energy Plan, *Delivering Fairness and Choice*.
- As part of the new planning process for this LTEP, which we will speak to shortly, the LTEP must balance the principles of cost effectiveness, reliability, clean energy, community and Indigenous engagement, and conservation and demand management.
- We have already made the important investments in clean energy, and *Delivering Fairness and Choice* builds on these investments by using our clean and reliable system to decarbonize other sectors. The way we deliver and use electricity is changing, and our energy system must evolve. As a result, innovation is a cornerstone of the 2017 LTEP.
- At the same time, we recognize that affordability is a priority for Ontario's energy consumers, and *Delivering Fairness and Choice* highlights the work the government has already done through Ontario's Fair Hydro Plan.
- And with that, I will turn the floor over to my colleague Carolyn Calwell whomst will walk through the LTEP process.

Slide 4 – Long-Term Energy Planning Process (Carolyn)

- The process for developing the LTEP is set out in the Electricity Act, 1998. This process became law in summer 2016, making the 2017 LTEP the first to follow this new legislated process.
- Our process began with the publication of two technical reports in the fall of 2016 on the adequacy and reliability of Ontario's electricity and fuels sectors to help support the development of the LTEP.
 - The Independent Electricity System Operator's (IESO's) Ontario Planning Outlook presented planning outlooks for the 2016 through 2035 period and included a range of demand outlooks.
 - The Fuels Technical Report (FTR) established a comprehensive view of the current state of the fuels sector in Ontario, and included set of outlooks for the 2016 through 2035 period.

- These reports allowed the ministry and stakeholders to start from a common understanding in advance of the LTEP consultation and engagement period.
- The Ministry then began an extensive consultation and engagement process beginning October 2016 and ending January 2017.
- After reviewing feedback from the engagement sessions, the Ministry developed the LTEP document and implementation directives to the IESO and Ontario Energy Board (OEB).
- Now, with the government's approval of *Delivering Fairness and Choice*, The directives have been issued to the two agencies. The IESO and OEB will develop plans that describe how to implement the LTEP's goals and objectives and submit these plans to the Minister for review. The Ministry will also focus on implementing the LTEP.

Slide 5 – Engagement with Ontarians (Carolyn)

- As mentioned previously, the Ministry held extensive engagement to support LTEP development.
- Here is a map of the in-person LTEP sessions held starting in the fall 2016 –
- The Ministry sought feedback through 17 stakeholder roundtable sessions, which were attended by over 500 stakeholders. Hundreds more people attended one of 17 public open houses in communities across the province.
- The Ministry also organized 17 Indigenous engagement sessions with First Nations and Métis groups. The Ministry met with almost 100 Indigenous communities and organizations at these sessions.
- The Ministry received:
 - 1,500 submissions were 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 (Steen)

- In 2016, Ontario produced more than half of its electricity from nuclear, with renewable resources providing a significant portion and emitting generation accounting for less than 10 per cent of total generation. This is due to investments in clean generation and the shut-down of coal-fired generation.
- Conservation 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 sources.

Slide 8 – Supply and Demand Outlook (Steen)

- The 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. The outlook assumes the equivalent of approximately 2.4 million electric vehicles by 2035 and includes demand from new electrified transit across the province.
- 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 contract term by 2035.
- The continued growth of distribution-connected generation is expected to reduce local demand and the need for LDCs to draw electricity from the province's transmission networks.
- The need for additional capacity will be met through initiatives under Market Renewal.
- Maintaining "planned flexibility" allows for the electricity system to meet increases and decreases in future demand.

Slide 9 – Electricity GHG Emissions Profile (Steen)

- About 90 per cent of the electricity used in Ontario in 2016 was free of GHG emissions, generated from sources such as water, nuclear, wind, solar and bio-energy.
- Our investments in these types of clean generation sources, along with the elimination of coal-fired electricity generation, have significantly reduced GHG emissions in the province.
- Ontario's electricity sector is forecast to account for only about two per cent of Ontario's total GHG emissions in 2017 and the emissions are forecast to be more than 80 per cent below 1990 levels.
- Emissions are expected to remain well below historical levels and to be relatively flat over the planning period of 2017-2035, 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 carbon-free generators to meet the Province's emissions targets.

Slide 10 – Progress on Residential Electricity Prices (Steen)

- The 2017 LTEP's outlook for residential prices shows progress compared to earlier outlooks in the 2010 and 2013 LTEPs.
- The residential price outlook in the 2017 LTEP remains below the 2013 LTEP outlook for the full forecast horizon due to Ontario's Fair Hydro Plan, removing costs from the electricity system, the anticipated benefits from implementing Market Renewal initiatives and more efficient consumption of electricity. Residential bills are also expected to be lower in all years due to the impact of declining average household consumption.
- The 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.
- Ontario's Fair Hydro Plan also supports:
 - Low-income customers by expanding the Ontario Electricity Support Program,

- Rural customers by broadening support for Rural or Remote Electricity Rate Protection and
 - First Nations residential customers by giving on-reserve customers a 100 per cent credit on their delivery line.
- The outlook also considers the impacts of cap and trade and assumes that some of our generation assets will continue to be available for the duration of the planning outlook.

Slide 11 – Industrial Prices in-line with Inflation (Steen)

- The 2017 LTEP price outlook for large industrial electricity consumers reflects average increases in line with inflation over the forecast period. The actual price paid by a large industrial electricity consumer is dependent on their consumption patterns and can vary among industries and specific consumers.
- Currently, the electricity price for industrial electricity consumers in Ontario is lower than the average price in the Great Lakes region as reported 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 – Fuels Use in Ontario (Steen)

- The 2017 LTEP recognizes that fuels are an important component of the province's economy and Ontario is committed to decarbonizing the fuels sector.
- Ontario's fuels use has declined from 2005 to 2015, largely due to the retirement of coal-fired generating stations.
- Currently, about one-third of Ontario's fuel use is from natural gas and one-third from transportation fuels such as gasoline and diesel. About 10 per cent of Ontario's fuels are used for non-energy uses such as feedstock for manufacturing.
- Ontario's fuel supply is produced and delivered through a variety of means and markets, including from outside of the province. As such, the government does not have the same policy and planning functions as it does for electricity.

- Nonetheless, Ontario's cap and trade program as well as initiatives in the Climate Change Action Plan will support the transition from conventional fuels to renewable and lower-carbon sources.
- The outlook for supply and demand of fuels will depend on policy and program decisions over the next 20 years, and technological innovation.
- Given these uncertainties, the Province will continue to undertake modelling and analysis to identify opportunities to decarbonize the fuels sector consistent with the provincial target of reducing greenhouse gas (GHG) emissions by 37 per cent from 1990 levels in 2030.
- The LTEP highlights the Province's commitment from the Climate Change Action Plan to increase the use of renewable natural gas. It also commits to exploring the energy system benefits of using electricity to create hydrogen.

Slide 13 – 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 14 – Consumer Focus (Carolyn)

- 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 enhancement by providing the Ontario Energy Board with increased authority over Unit Sub-Metering Providers

- Unit Sub-Metering Providers are those companies that provide services to bill tenants of multi-residential buildings (like condominiums) directly for their electricity usage. We have heard there is opportunity for increased transparency on costs and arrangements with building developers. We will enable the OEB to implement an appropriate regulatory framework.
- 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 explanations when additional information is desired.
- With respect to reliability, we will look to the Ontario Energy Board to enhance utility accountability to their customers.
 - We will ask both the Ontario Energy Board and IESO to review existing standards and policies for reliability and recommend options for improving them.
- 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.
 - A review will look at things like barriers to non-wires solutions such as conservation, demand response and other distributed energy resources, and better integrating regional planning with community energy planning.

Slide 15 – Support First Nation and Métis Leadership and Capacity (Carolyn)

- Previous LTEPs identified the importance of linkages between the energy sector and indigenous communities.
- 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:
 - Working to connect remote First Nations communities to the grid, where economical to do so, and working with other First Nations communities to reduce reliance on diesel generated power.
 - Promoting community energy planning and supporting projects identified in those plans
 - Working with indigenous communities on electricity affordability, conservation and barriers to partnering.

- We hope to advance Ontario's relationship with Indigenous communities in the spirit of the Political Accord with First Nations and the Ontario-MNO Framework Agreement with the Métis.

Slide 16 – Encouraging and Enabling Innovation (Carolyn, then Kaili)

- 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.
- 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. Many of these barriers are regulatory in nature, and we will work with the Ontario Energy Board to address them 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. We are also taking steps to better integrate electric vehicles onto the grid in cost-effective ways, and remove barriers that unfairly disadvantage energy storage, a technology that has enormous versatility and potential benefits. This will be done by amending government regulations and working with agencies to address market rules and codes.
- We will work with the OEB to ensure that LDCs are encouraged to address the evolution of their business model to achieve enhancements in productivity, efficiency, and performance. This includes encouraging LDCs to form partnerships with each other to deliver shared services.
- To continue enhancing Ontario's net metering regulation, the government intends to bring forward proposed legislative amendments that if passed would enable third party providers to own and operate net-metered systems and enable the deployment of virtual net metering demonstration projects, subject to further regulatory amendments.
- In addition, we will work with the IESO to develop a program that will support a select number of innovative renewable distributed generation projects, including virtual net metering demonstration projects, to help inform future grid modernization and net metering policies.

Slide 17 – Conservation and Energy Efficiency (Kaili)

- Ontario's commitment to conservation and energy efficiency will be strengthened through initiatives such as:
 - Encouraging energy efficiency on the distribution system;
 - Enabling demand response to compete with other supply-side resources through the transition to a capacity auction; and
 - Expanding green button province-wide to improve customer access to energy usage data and tools.

Slide 18 – Responding to the Challenge of Climate Change (Kaili, then Steen)

- Our conservation efforts are also aligning with climate change goals, including:
 - Phasing out the eligibility of Combined Heat and Power projects which use supplied fossil fuels for incentives under conservation programs; and
 - Coordinating existing conservation programs with new low carbon programs being rolled out by the Green Ontario Fund.
- 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.