Intro/Slide 2

- The LTEP is a road map that would set out the direction for Ontario's energy future for the next 20 years.
- The Ministry last updated the LTEP in 2013 and expects to release the revised LTEP in 2017.
- I will speak about the achievements from the 2013 LTEP and illustrate how the next LTEP will differ from the previous review.
- Development of the LTEP will follow the process outlined in the *Energy Statute and Law Amendment Act*, 2016.
- I will share some overarching questions we are considering as we proceed with LTEP engagement and development.

Slide 3: LTEP 2013

- The government released the last Long-Term Energy Plan, *Achieving Balance* in December 2013 and since then has been implementing the plan.
- The plan provided a balanced approach to meeting energy needs today and for generations to come.
- In many ways, the 2013 LTEP set the bar for future energy plans. When the Ministry of Energy enshrined the energy planning process in legislation, it adopted many aspects used in developing the 2013 LTEP.
- For example, the 2013 plan was built around five key principles – cost-effectiveness, reliability, clean energy, community engagement and putting conservation first. Recently passed legislation now states that future LTEPs will be consistent with these principles.
- The development of the 2013 LTEP was supported by comprehensive engagement and consultation. The LTEP process in legislation requires similar consultation with consumers, distributors, generators, transmitters, and other stakeholders before issuing an LTEP.

Slide 4: Key LTEP 2013 Achievements

- Over the last three years, the Ministry of Energy has been working with our agencies, other ministries and keys stakeholders to implement the direction in the 2013 LTEP.
- We have made significant progress on a number of LTEP 2013 commitments.
    - **i.** The Conservation First Framework was launched in 2015 to support province-wide and local electricity conservation programs.

ii. The IESO stickhandled successful procurements for Electricity Storage and the first Large Renewable Procurement process; and

The government moved forward with plans to refurbish the Darlington Generating Station beginning this fall and the Bruce Generating Station in 2020.

Slide 5: Changes Since LTEP 2013

- While the next LTEP will follow the principles of the previous one, there are a number of new factors for the Ministry of Energy to consider when developing the next LTEP. These include:
    i. Developing the LTEP following the process enshrined in the *Energy Statute and Law Amendment Act*, 2016;
    ii. Taking a broader view of the province's energy needs by considering both electricity and fuels; and
    iii. Ensuring the LTEP is aligned with the Climate Change Action Plan (CCAP).

Slide 6: New Energy Planning Process

- The development of the next LTEP will follow the process outlined in Legislation.
- The legislation, passed last June, replaced the former Integrated Power System Plan (IPSP) process with an enhanced LTEP process that builds on the principles and processes used in the 2010 and 2013 LTEPs.
- The LTEP process will allow for more public transparency and a more robust consultation process than the former IPSP process.
- The LTEP process clarifies the roles of the Ministry of Energy, IESO and OEB in developing future Long-Term Energy Plans. There is a requirement that IESO develop a technical plan that would be used by the Province in consultations on and development of the LTEP. The process also provides for the development of implementation plans by IESO and the OEB.

Slide 7: Broader Energy Focus

- While the previous LTEPs have focused on the electricity produced in the province, there is a growing need for the next LTEP to also take into account the fossil fuels used by Ontarians to support their basic needs for heat and transportation.
- In light of the province's emission reduction goals and the Climate Change Action Plan (CCAP), the 2017 LTEP will take a broader view of the province's energy needs and consider how the uses of electricity and fossil fuels influence each other.

- For example, because Ontario's electricity supply is largely emissions free, commitments in the Climate Change Action Plan (CCAP) consider a switch from conventional fossil fuels to the use of electricity for heating and cooling buildings and powering transportation.

Slide 8: Alignment with Climate Change Policy

- The Climate Change Action Plan (CCAP) released last June will have a significant impact on how energy is used in our province. It proposes to use conservation, energy efficiency and fuel switching to reduce the use of fossil fuels such as oil, gasoline and natural gas and increase the use of clean electricity and clean fuels.
- The Climate Change Action Plan (CCAP) will play a key role in the development of the 2017 LTEP, as it intends to share many of the same goals.
- The energy demand and supply forecasts used to develop the LTEP will reflect the direction in the Climate Change Action Plan (CCAP).
- The LTEP also presents an opportunity for the government to elaborate on and consult on energy initiatives that support greenhouse gas (GHG) emission reductions.

Slide 9: Energy Innovation

- Evolutions in energy technology and policy are expanding opportunities for customer engagement and participation in the Ontario electricity system.
- These are driving a transition towards a system more characterized by two-way flows and a growing prevalence of distributed energy resources.
- The utility-customer relationship is becoming more complex against this backdrop as an increasing number of products and services are becoming available to customers.
- Ontario has made innovation in energy technology a priority. By encouraging innovation in our energy sector, Ontario has created opportunities for jobs and growth and kept pace with a changing energy environment. Some examples of our support for innovation include:
    - Updating the Net Metering Program;
    - Support for innovation through the Smart Grid Fund; and
    - Expanding Green Button province-wide.
- The next LTEP will consider how Ontario should respond to these changes and how further innovation can be encouraged.

Slide 10: Summary of Technical Reports

- LTEP engagement and development will be supported by two technical reports:
    - Independent Electricity System Operator's Ontario Planning Outlook; and
    - Navigant's Fuels Technical Report.
- The reports allow for the Ministry, Indigenous groups and communities and stakeholders to start from a common point of understanding in advance of LTEP consultations and engagement.
- Both reports take into account other government commitments made in the Climate Change Action Plan (CCAP), the Climate Change Mitigation and Low-Carbon Economy Act, 2016 and the Vancouver Declaration.

Slide 11: Electricity Sector Technical Report

- The Independent Electricity System Operator (IESO) released its Ontario Planning Outlook (OPO) on September 1, 2016.
- The OPO includes a ten-year review (2005-2015) and a twenty-year outlook (2016-2035) for the electricity system with respect to key variables including conservation, demand, and supply resources.

Slide 12: Ontario Demand Scenarios

- The demand for electricity is the starting point used in assessing the outlook for the electricity system.
- There is uncertainty in any demand outlook, as future demand will depend on the economy, demographics, policy and other considerations.
- In preparing this report, IESO considered a range for electricity demand in Ontario, from 133 Terawatt Hours (TWh) to 197 TWh in 2035, compared to 143 TWh in 2015.
- This range is reflected in four outlooks that provide context for long-term integrated planning and discussion.
- Each of the four demand outlooks in this report reflects the impacts that near-term actions in the Climate Change Action (CCAP) would have on the electricity sector, including broader electrification of transportation and home heating.

Slide 13: Ontario Historic Demand

- Demand for grid-connected electricity declined over the last 10 years due to a number of factors including conservation and a rise in distributed energy resources.

- Conservation and demand management played an increasing role in reducing both energy and peak demands over the last ten years through conservation programs and changes to codes and standards.
- There is also an increasing amount of generation embedded within the province's distribution system. Distributed energy resources typically include renewable resources such as small-scale solar, wind, waterpower or bioenergy or combined heat and power (CHP) facilities and demand response (DR) resources.

Slide 14-15: Supply

- Ontario is in a strong starting position to reliably address any of the demand outlooks presented in the OPO.
- Provided that the planned resources come into service and existing resources continue to operate, Ontario's existing, committed and directed resources would be sufficient to meet the flat demand outlook.
- While higher demand could create a need for additional resources in the longer term, these needs are not projected to occur until the mid-2020s, with significant increases in resource requirements beyond 2030.

Slide 16: Ontario Cost Outlook

- The cost projections in the Ontario Planning Outlook are a function of demand growth, the cost of operating the existing system and the investments required in new resources to meet potential needs.
- In the flat demand outlook, the total cost of electricity service is expected to remain in line with inflation over the next 10 years and is estimated to remain below the level of inflation to 2035.
- Cost savings are premised on expectations of lower revenue requirements among generators whose existing contracts have expired but continue to operate at costs below existing contract rates.
- In higher demand outlooks, additional investments in new resources such as conservation, generation and transmission would be required to meet the increase in demand.

Slide 17: Ontario Emission Outlook

- With the phase-out of coal-fired generation, the carbon emissions from Ontario's electricity fleet now come primarily from natural gas-fired generation.
- Emissions are expected to continue to decline over the next five years as additional renewable generation enters service. Beyond this period, emissions will depend on the level of electricity demand and the extent to which energy production from the existing natural gas-fired fleet is displaced.

- When Ontario's cap and trade system takes effect in 2017, the electricity sector will see the cost of carbon reflected in the wholesale electricity price.
- The Ontario carbon price will also be applied to electricity imports. This will provide a level playing field for Ontario generators in IESO market and reduce imports from higher-emitting sources.

Slide 18: Recent Developments not in the Ontario Planning Outlook

- There were recent developments since the release of the Ontario Planning Outlook that I will provide an update on.

Slide 19: Large Renewable Procurement II Suspension

- The OPO has shown that Ontario has sufficient resources to meet electricity demand until the mid-2020's. At this time, there is no urgent need to pursue additional electricity supply.
- Given our strong energy position, the Ministry re-evaluated its course and decided to suspend progress on the second round of the Large Renewable Procurement (LRP) II, which was intended to procure up to 980 MW of renewable energy projects.
- In addition, we directed IESO to suspend the procurement of 75 MW of energy-from-waste projects.
- Suspending these procurements is expected to save up to $3.8 billion in electricity system costs, compared with the earlier forecast in the 2013 LTEP. This would result in savings for the typical residential consumer of about $2.45 per month on their electricity bill.
- Importantly, the decision to suspend LRP II does not require IESO to break any contracts. Ontario will honour the renewable contracts that have already been signed, including those signed earlier this year under the first LRP process (LRP I).
- With approximately 18,000 MW of renewable generation contracted or online, Ontario remains committed to a clean energy system.

Slide 20: Rate Mitigation – New Initiatives

- Ontario is taking action to reduce electricity bills for families, farms, and businesses.
- We also recognize that rebuilding and cleaning up Ontario's electricity system has come at a cost. Over the last decade we've rebuilt our transmission and distribution grid, we've invested in clean generation, and we've closed the last

dirty coal-fired power plant. But we need to take the next step in ensuring that clean, reliable system is affordable.

- Recognizing this, we are introducing new measures that would take effect January 1, 2017, including:
    - Rebating provincial portion of the HST to reduce eligible residential, small business and farm electricity bills by 8% ($130 annually);
    - Providing eligible rural ratepayers with additional relief, decreasing total electricity bills by an average of $540 a year or $45 each month; and
    - Empowering additional large electricity consumers to reduce bills by up to one third through the Industrial Conservation Initiative (ICI).
- The government is also proposing to expand eligibility for the Industrial Conservation Initiative (ICI).
    - This program encourages eligible industrial consumers to save money by reducing electricity consumption during -peak hours.
    - The proposal is to expand the program to include all sectors and consumers whose monthly peak demand exceeds 1 MW.

Slide 21-22 Fuels Technical Report

- As I discussed earlier, the Ministry of Energy is taking steps to ensure fuels such as natural gas, gasoline and diesel are considered in the LTEP.
- The Ministry established a Fuels Sector Working Group (FSWG) made up of companies and associations from Ontario's fuels sector to advise on the Fuels Technical Report (FTR).
- The Ministry released the FTR on September 30, 2016. The report was prepared by Navigant Consulting with advice from the FSWG, and includes existing fuels demand and supply data and multiple demand outlooks to 2035.

Slide 23 : Fuels Sector Demand

- The Fuels Technical Report includes five demand scenarios based on the same primary assumptions contained in IESO's OPO.
- Due to the projected switching of fossil fuels to cleaner electricity, the projections for fuel demand in the FTR are the reverse of the projections for electricity demand.
- For example, an OPO forecast of an increase in the number of electric vehicles would trigger a corresponding decrease in the fossil fuels consumed within the transportation sector.
- The fuels projections also consider different ranges of fuels conservation.

Slide 24: Fuels Sector Supply and Costs

- Ontario is expected to have sufficient supply of conventional fossil fuels for all demand outlooks.
- Ontario's fossil fuel sector underwent considerable change recently, driven by new sources of supply, new technologies and the use of new, low-carbon biofuels such as ethanol and bio-based diesels.
- Ontario's climate change initiatives will impact the supply and demand for these fuels in the future.
- Because of the strength and diversity of the existing supply chain of pipelines, refineries, terminals and retail stations, Ontario's fossil fuel sector is well positioned to adapt to any changes in the supply and demand for fossil fuels, and contribute positively to Ontario's GHG emission reduction targets.
- The wholesale prices for fossil fuels in Ontario, such as gasoline, diesel, propane and natural gas, are determined in an integrated and competitive North American market. That means Ontario fuel buyers must pay the market price to attract supply from outside the province.
- Total fuels energy costs are expected to decline in most outlooks compared to the flat demand outlook due to reduced demand resulting from electrification of space-heating, industrial process, and light-duty transportation.

Slide 25: Fuels Sector Emissions Forecast

- Carbon emissions from Ontario's fuels sector are projected to decline significantly under most demand outlooks.
- Emissions reductions are driven mainly by the electrification assumed to take place across all sectors.
- Further emissions reductions identified through Outlooks E and F are the result of incremental natural gas DSM and to the increased use of alternative, less carbon-emitting fuels.

Slide 26: LTEP Discussion Questions

- The next few slides are key questions the Ministry of Energy and government will consider as it develops the LTEP.

Slide 27: Supply Mix

- As outlined in the Independent Electricity System Operator's Ontario Planning Outlook (OPO), Ontario is in a strong- supply situation.
- While previous LTEPs have included targets for certain types of supply (e.g., a target for amount of megawatts from renewables) the Ministry of Energy is

considering whether the next LTEP should focus more on outcomes, for example a clean supply.

Slide 28: Affordability

- The government has taken recent steps to provide the electricity cost relief Ontarians need, while the government continues to make the critical investments necessary to maintain a modern, clean and reliable energy system.
- These steps have included the proposed HST rebate; enhancements to the Rural or Remote Rate Protection Program and the suspension of Large Renewable Procurement 2.
- The Ministry of Energy is considering if the LTEP should include additional focus on reducing costs.

Slide 29: Customer Choice and Innovation

- Evolutions in energy technology and policy are expanding opportunities for customer engagement and participation in the Ontario electricity system.
- The Ministry of Energy is considering what incentives may be required to support increased customer choice and promote energy innovation.

Slide 30: CCAP Alignment and Fuels Integration

- The Fuels Technical Report (FTR) identified a significant potential for alternative fuels to displace conventional fossil fuels. Substituting alternative fuels such as renewable natural gas (RNG) can achieve major GHG emission reductions.
- The Ontario Planning Outlook (OPO) and Fuels Technical Report (FTR) reflect the near-term actions in the Climate Change Action Plan (CCAP). In the long term, there is uncertainty with respect to fuel-switching and electrification.

Slide 31: Indigenous Energy Policy

- Indigenous energy policy poses complex challenges in reconciling energy affordability and access to energy sources supportive of Climate Change Action Plan (CCAP) goals.
- In August 2015, the Chiefs of Ontario signed an historic Political Accord with the Government of Ontario. This Accord guides the relationship between First Nations and the Province.
- The Ministry of Energy is considering how to support Indigenous participation in the energy sector in the future.

Slide 32: Consultation and Engagement Process

- Development of the LTEP will be supported by a rigorous consultation and engagement process.

Slide 33: Early Engagement

- This year, the Ministry of Energy has taken several steps to make sure key stakeholders are aware of the LTEP process. Examples include:
    - Meetings with several local distribution companies and gas utilities across the province in April;
    - More than 700 letters being sent to key stakeholders notifying them that LTEP development is beginning and seeking their feedback; and
    - Engagement across government through mutli-ministry meetings and an Assistant Deputy Minister's (ADMs) Forum.

Slide 34: LTEP Engagement Process and Tools

- The LTEP 2017 engagement process is now underway.
- This year, we are visiting more communities than ever before, and offering more ways to participate in the energy planning process.
- There will be public open house meetings in sixteen community sessions across the province, as well as a number of indigenous engagement sessions.
- We are also conducting telephone town halls, providing an online discussion tool and requesting written submissions through the publicly available Environmental Registry.
- More information about all of these opportunities can be found on my ministry's website, Ontario.ca/LTEP.
- The LTEP engagement process will run through December 2016.

Slide 35: LTEP Consultation Sessions

- The in-person sessions will provide opportunities for the Ministry of Energy to hear from sector stakeholders and the public.
- The Ministry of Energy sent more than 700 invites to companies, associations, municipalities, indigenous communities and utilities across the province. The Ministry will hold roundtable sessions with these stakeholders in each community.
- There will also be public open houses in each community for all members of the public to attend. This will allow Ministry staff to provide sector information and hear their concerns.

Slide 36-37 : Locations for Engagement Sessions

- These slides provide details on where and when the in-person sessions will take place.

Slide 38 : LTEP Indigenous Engagement

- The Ministry is hosting regional sessions on LTEP for Indigenous communities in parallel with public consultations. Subject to feedback from Political-Territorial

Organizations, communities and other appropriate organizations, Indigenous sessions are being held in 16 locations.

- Indigenous LTEP sessions invite stories about and showcase Indigenous successes in the energy sector, inform and get feedback about programs and funding for energy sector participation, and educate about billing and the energy system.

Slide 39 : LTEP Discussion Guide

- To facilitate conversation throughout the engagement process, the Ministry of Energy released an LTEP Discussion Guide on October 13, 2016.
- The discussion guide includes data from the LTEP technical reports; information on existing policies and programs; and a number of open-ended questions on key policy topics such as grid modernization; storage; conservation and energy efficiency and clean energy supply.