Ontario

MINISTRY OF
ENERGY

2017 LTEP: Enhancing our Commitment to Conservation

Premier's Office Briefing

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CONFIDENTIAL DRAFT

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Background

Key Achievements since 2013 LTEP

LTEP 2013 Released *Dec. 2013*

Six-Year **Conservation First Framework** takes effect *Jan. 2015*

Home Energy Conservation Incentive Program launched with funding from the Green Investment Fund *Oct. 2016*

Regulation enacted for mandatory **Energy and Water Reporting and Benchmarking** for large buildings *Feb. 2017*

2014 | **2015** | **2016** | **2017**

Five Amendments to Ontario's **Energy Efficiency Regulation further advance efficiency standards:** *Jan. 2014, Mar. 2014, Jan. 2015, Jan 2016 & Jan. 2017*

Six-Year **Demand Side Management Framework** takes effect *Jan. 2015*

IESO implements annual **Demand Response Auction** process. *Dec. 2015* (first auction)

Whole Home Pilot launch by the IESO, Enbridge Gas and Union Gas *Expected late May 2017*

2017 LTEP Engagement: What we heard on Conservation

- The Ministry of Energy (ENERGY) received over 1,500 written submissions through the Environmental Registry posting for 2017 LTEP, of which 418 submissions had comments relating to conservation and energy efficiency. High-level themes included:
  - **Reaffirm and Enhance Conservation First commitment:**
    - Continue to pursue all cost-effective conservation to promote a clean, cost-effective energy system and protect vulnerable customers.
    - Expand the definition of conservation to include in front of the meter conservation.
    - Take steps to further put conservation first in regional planning.
    - Extend the 2015-2020 electricity framework.
  - **Align conservation with the Climate Change Action Plan (CCAP):**
    - Leverage existing conservation framework resources for CCAP programs where possible to promote efficiencies and achievement of conservation targets. Align conservation priorities with CCAP, considering deeper retrofits and a greater focus on natural gas savings.
  - **Ensure programs meet customer needs:**
    - Electricity conservation and efficiency retrofit programs must be adequately funded to effectively reduce consumption and bill costs for low-income consumers.
    - Coordinate and integrate programs to provide customer-focused and convenient programs.
- A small number of stakeholders (e.g., AMPCO) have asked to scale down conservation, indicating the high costs of conservation during a strong supply situation.

Current Context

The IESO and electricity distributors are working towards aggressive conservation goals.

- The 2015-2020 Conservation First Framework (CFF) and the Industrial Accelerator Program (IAP) are expected to result in 8.7 TWh of electricity savings in 2020, and will contribute towards Ontario's long term electricity conservation target of 30 TWh in 2032.
- Under the CFF, all LDCs have entered in Energy Conservation Agreements (ECAs) with the IESO and have been assigned individual six-year Conservation and Demand Management (CDM) targets and budgets.
- $2.2 Billion have been committed towards the CFF and $500 Million towards the IAP between 2015 and 2020.
    - As of March 2017, ~$370 million of the CFF budget and ~$40 million of the IAP budget had been spent.*

2017 LTEP will need to balance the broad benefits of conservation investments with the need to mitigate rate impacts.

- Ontario is currently in a positive supply situation, with incremental system needs not expected to materialize until the mid-2020s (based on OPO Outlooks B, C and D).
- As part of the Ontario Fair Hydro Plan (OFHP), the government has committed to lower electricity costs for ratepayers and provide rate relief.
- Measures announced in the OFHP will lead to immediate cost reductions, but medium to long-term cost pressures remain. There is a need to identify measures to bend the cost curve in the post-2020 period.

*Reported LDC spending is low primarily due to 2015 program year funding from legacy framework of $479 M.

Current Context

2017 LTEP represents an opportunity to begin planning for a more integrated approach to delivering conservation across the province.

- In June 2016, Ontario released the 2016 to 2020 CCAP. The plan describes the actions that Ontario will take to address climate change, and the challenges and opportunities associated with transitioning the province to a low-carbon economy.
- ENERGY is currently working with MOECC to establish the Green Ontario Fund that will offer incentives and low-interest financing for deep energy efficiency retrofits and low-carbon technologies, funded by cap and trade proceeds.
- Existing agency and utility-delivered programs will contribute to meeting Ontario's GHG reduction targets. A $4 billion planned investment in programs for homes, businesses and industry is expected to achieve 1.3 Mt of GHG reductions in 2020 from electricity savings and 2.5 Mt of reductions in 2020 from natural gas*.
- Moving to an integrated approach to conservation across the province following completion of the 2015 to 2020 Conservation First Framework, where most conservation programs would be delivered by a single agency with funding from cap and trade proceeds, would:
    - provide homeowners and businesses across the province with more streamlined and integrated programs, thereby avoiding confusion and duplication
    - bend the cost curve in the medium to long term and provide additional rate relief for all customers

*Source: Electricity related GHG emissions are based on information provided by the IESO (based on OPO Outlook B emission forecast) while natural gas related GHG emissions are based on information provided by the OEB)

Key Conservation Initiatives

1. a) Electricity Conservation Target and Funding

- Through the 2017 LTEP, ENERGY proposes to reaffirm its commitment to the long-term conservation target of 30 TWh in 2032, and commit to exploring options to enhance the value of its conservation investments.
- Electricity conservation and energy efficiency programs will support Ontario's transition to a low-carbon, higher electrification future.
- As noted on slide 8, at the end of the 2015-2020 CFF and IAP, costs to support province-wide conservation programs could be shifted from the electricity ratepayer base to the GGRA, recognizing the GHG reductions of these programs, and providing rate relief to Ontarians.

Key Information:

Reaffirming Long-Term Conservation Target/ Continuing to Explore Opportunities to Enhance Value

- Ontario's long-term 30 TWh ranks among the leading U.S. jurisdictions, and is the most ambitious electricity reduction target of all Canadian provinces/territories.
- In 2016, the IESO completed an updated Achievable Potential Study (APS) of conservation in the province.
    - Short-term results will be used to adjust overall and individual LDC CDM targets during the Mid-Term Review of the CFF.
- A November 2016 addendum to the APS identified significant higher long-term conservation potential - the potential to increase the 30 TWh target to ~42 TWh in 2032.
- However, updated (May 2017) IESO supply/demand modelling forecasts that the adoption of this higher target would result in an increase in total electricity system costs by an annual average of $100 M to $200 M between 2017 and 2035, and an increase in average residential bills by $11/month over the planning period.

*Costs would vary through the planning horizon and depend on the extent to which conservation is avoiding investments in supply and transmission resources.

1. a) Electricity Conservation Target and Funding (cont'd)

Reaffirming Long-Term Conservation Target (cont'd)

- Adopting a higher conservation target would also increase surplus energy by an average of about 2 TWh per year starting in 2021.
- Opportunities exist to enhance the value of existing planned conservation investments, and to reassess a higher conservation target in the future to reflect updates to the supply/demand forecast and an updated assessment of cost-effective potential.
    - Through the Mid-Term Review (MTR) of the CFF and IAP, the IESO is investigating how to better target conservation to where and when it is needed.
    - The next LTEP affords the opportunity to explore options to realize higher levels of conservation in view of opportunities for electricity cost and emissions reductions.

Shifting Conservation Funding to GGRA

- Recovering all or a portion of electricity conservation program costs from the GGRA starting in 2021 could help bend the cost curve in the medium and long-term, following the immediate relief provided by OFHP.
- Based on preliminary analysis for the 2018-2022 period*, shifting conservation funding to GGRA is expected to result in residential bill reductions of about $3 per month (2% to 2.5% of total monthly bill).
    - IESO is currently undertaking analysis to assess the extent to which shifting conservation funding to GGRA will help address cost pressures on electricity rates in the medium and long terms.
- Funding CFF and IAP through GGRA would require an average of ~25% of proceeds on annual basis.
    - About $1.8 to $1.9 billion of cap and trade auction proceeds are expected to be annually deposited into the GGRA over 2016 to 2020. Combined average annual spending on CFF and IAP, between 2015 and 2020, is expected to be ~$520 million.
- Funding through the GGRA would align with the move to an integrated approach to conservation programs across the province, and delivery by a single agency.

* Not including OFHP
**OPO Outlook B and FTR Outlook B assume Budget-Constrained scenarios

1. a) Electricity Conservation Target & Funding (cont'd)

Expected Stakeholder Reaction:

- The IESO has not yet published the results of its addendum APS. Stakeholder reaction to not pursuing a higher target is expected to be limited to a few environmental groups.
- Many stakeholders, including municipalities, residential and business consumers, and LDCs may support the decision to recover conservation programs from the GGRA, given the associated rate relief that will be provided during a period where bills are set to rise.
- The ECO and environmental groups support using the GGRA for new measures which result in incremental GHG reductions, and may not support funding of existing electricity conservation programs through the GGRA. They may also question the value of the investment from a GHG emission avoidance perspective.

1. b) Demand Response Target

- 2017 LTEP provides an opportunity to eliminate the long-term Demand Response (DR) target and reconsider the scale/need for DR auctions, which would further bend the cost curve and provide rate relief.

Key Information:

- 2013 LTEP stated that Ontario will aim to use DR to meet 10% of peak demand by 2025 (equivalent to ~2,400 MW under 2013 LTEP forecast conditions).
  - The DR target includes peak reductions from a variety of initiatives, including the Industrial Conservation Initiative (ICI), Time-of-Use (TOU) rates, DR auction and DR pilots.
- Since 2015, IESO has been holding annual DR auctions. The DR auction in December 2016 procured ~455 and ~480 MW, respectively, for the summer and winter commitment periods.
- The cost of DR in 2016 was $41 M. Based on the OPO DR growth projection, the cost of DR auction resources in 2025 could be ~$110 M (a 7% increase per year in procured capacity).
- There is limited system need for incremental DR:
  - Based on OPO Outlooks B, C and D, incremental system needs are not expected to arise until mid 2020s.
  - Ontario has 428 MW of additional DR resources than what was projected in the 2013 LTEP, mainly due to the 2014 eligibility change for the ICI program to include customers with a peak demand for electricity between 3 MW to 5 MW*.

2016 DR Breakdown

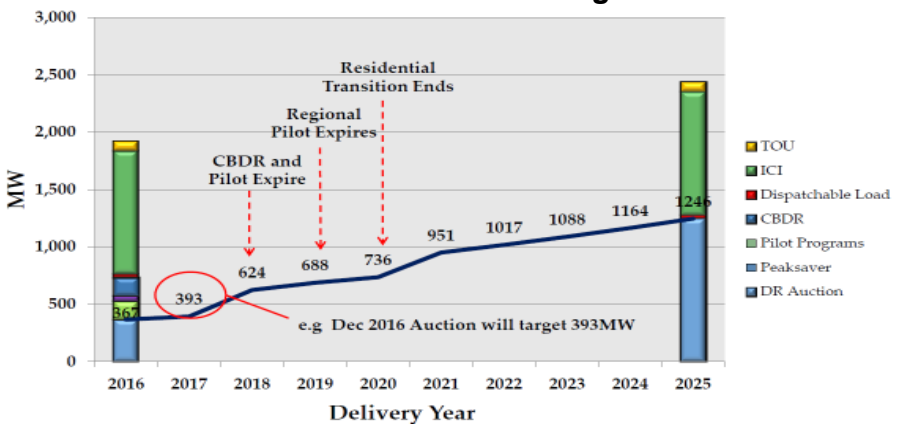
	2013 LTEP forecast (MW)	OPO Estimate (MW)
ICI Program	300	1,000
TOU Rates	232	59
Dispatchable Load	377	-
DR pilot program	-	80
Peaksaver PLUS	528	164
CBDR (legacy)		159
DR auction		404
Total	**1,437 MW**	**1,865 MW**

*The recent decision to further lower ICI eligibility could lead to additional DR resources related to ICI.

1. b) Demand Response Target (cont'd)

- The IESO is planning to implement a general capacity auction to procure required capacity once it is needed.* DR resources will compete with other resources and would be procured if cost-competitive with other offers.
  - A DR target could constrain future capacity auctions by requiring the IESO to procure a specific DR amount.
- In the absence of a long term DR target, the IESO would decide on appropriate procurement targets for the annual DR auctions.
  - IESO notes the need for DR resources, including residential DR, to gain market exposure before they can compete with supply resources through the capacity auction.

DR Auction Procurement Targets**



Expected stakeholder reaction:

- DR aggregators/loads looking to participate in future DR auctions, could criticize the elimination of the target. The ECO and environmental groups could criticize the elimination of the DR target, given its role in reducing GHG emissions from natural gas based generation.
- Some IESO market participants (e.g. generators, large consumers) could support the decision and potentially note the constraints of having a DR target in a capacity auction mechanism.

*The first capacity auction will likely take place three years prior to when capacity needs are forecasted to arise.
**Source: IESO Presentation to DR Working Group, July 2016

1. c) Eligibility of CHP and WER Projects Under the CFF and IAP

- Through the 2017 LTEP, ENERGY is proposing to phase out incentives for Behind the Meter Generation (BMG) projects that result in a net increase in GHG emissions.
- Under the proposed approach, proponents currently working to develop such projects will be able to submit applications to the IESO until July 1, 2018 (completion date of the CFF and IAP MTR). BMG projects using renewable fuels will continue to be eligible for incentives.

Key Information:

- BMG projects, which according to current program rules include Combined Heat and Power (CHP) and Waste Energy Recovery (WER), are eligible to receive incentives through the CFF and IAP.
- Rationale for the eligibility of BMG projects has been that these projects reduce the participant's draw from the electricity grid and are more energy efficient than the alternative of natural gas heating and electricity grid consumption. They also help mitigate rising electricity prices for large commercial and industrial customers.
- The GHG emission profile of a BMG project depends on the type of project.
  - CHP projects, which mainly use natural gas or propane as fuel, result in a net increase of GHG emissions. Under status quo, planned CHP projects installed over the 2015 to 2020 CFF and IAP frameworks are expected to increase emissions by 0.4 Mt in 2020.
  - WER projects use a facility's waste by-product as its primary fuel. Most WER projects do not result in a net increase in GHG emissions.
- Over 240 CHP projects* and 13 WER projects are planned to be implemented under CFF and IAP, between 2015 and 2020 based on current CDM plans and IAP projects.
  - Under the proposed approach, IESO expects 10 of these projects to not proceed .
  - All 13 WER projects are expected to proceed as planned (no net emissions).

1. c) Eligibility of CHP and WER Projects Under the CFF and IAP (cont'd)

Key Information (cont'd):

- The proposed approach would affirm ENERGY's commitment to align the CFF and IAP with the government's climate change objectives.
- LDCs are planning to meet a significant portion of their individual CDM targets through CHP projects and CHP could represent 1.8 TWh (21%) of the 8.7 TWh combined CFF and IAP targets. WER projects could represent over 0.3 TWh (3%) of the combined targets.
    - The recommended approach would likely not impact LDCs' ability to meet their CDM targets since most planned CHP and WER projects would not be affected.
- CFF/IAP funded BMG projects have significantly helped business in managing their electricity costs.
    - Example: General Motors recently received a $9 million incentive for a conservation CHP project. It's estimated that the project will help General Motors save $88 million in electricity bill savings (net present value).

Expected stakeholder reaction:

- The ECO and environmental groups would respond positively to the elimination of incentives for projects that result in a net increase in GHG emissions.
- Stakeholders could criticize the elimination of incentives, including participants, who had invested time/effort (e.g., applications, engineering studies). Businesses could complain they have fewer options to manage their energy costs. To address concerns, ENERGY would highlight that businesses planning CHP projects have until July 1, 2018 to submit applications to the IESO and that projects using renewable sources continue to be eligible for incentives.

1d) Reaffirming commitment to advancing Energy Efficiency Standards

- Ontario will continue to advance efficiency standards to further reduce energy and water consumption and GHG emissions in the province, including setting efficiency standards for key energy-using products found in drinking water and water treatment plants.
- Work with other jurisdictions to improve and harmonize efficiency standards across Canada to support net-zero buildings.

Ontario's Energy Efficiency Regulation covers over 80 products representing
- **90%** of home energy use,
- **60%** of commercial building energy use, and
- **30%** of industrial energy use.

Key Information:

- Since 2013, Ontario set new or enhanced energy efficiency standards for over 60 products.
- As of 2017, the Ministry of Energy start regulating the water efficiency of products that consume both energy and water which resulted in further water and energy savings and GHG emissions reductions.
- To support CCAP commitment, Ontario intends to set or update energy efficiency standards for key equipment using electricity in drinking water and waste water treatment plants to reduce electricity consumption in one of the largest uses of electricity by municipalities.
- Ontario is working with other provinces and the federal government to improve and harmonize efficiency standards across Canada, including exploring opportunities and strategies to develop market for high-efficiency products and appliances to support net-zero buildings.

Expected stakeholder reaction:

- Consumers support initiatives with no direct costs to consumers that contribute to lowering energy bills and reducing energy use in Ontario. Higher efficiency products may cost more, but on average are expected to save consumers money through avoided energy costs.
- Manufacturers encourage and support harmonization of efficiency standards between North American jurisdictions. Harmonization helps to eliminate trade barriers and reduces manufacturers' costs for products with new efficiency standards due to economies of scale.

2a) In Front of the Meter Conservation (IFMC)

- IFMC technologies are deployed on the distribution system and provide electricity savings and peak reductions to customers behind the meter. Examples include technologies that reduce line losses and optimize voltage levels.
  - Pilots in North America have shown that IFMC technologies can provide electricity savings for customers behind the meter. However, LDCs in Ontario face barriers to deploying IFMC.
- ENERGY is working with the IESO and OEB to identify and remove barriers to LDCs pursuing IFMC projects that increase energy efficiency on the distribution system.*

Key Information:

- ENERGY procured Navigant to explore IFMC barriers, opportunities, costs and benefits in Ontario. The final report is expected in late May and will inform LTEP content/Directive(s).
- Results indicate that approximately 30% of Ontario feeders are cost-effective for IFMC deployment, based on the provincial cost avoidance tables maintained by the IESO.
  - However, in order to ensure value for customers, IFMC projects should be evaluated using local cost avoidance figures, which consider the technology's ability to defer local infrastructure upgrades.

Expected stakeholder reaction:

- Through the 2016 LTEP consultation process, the Ministry heard support from LDCs for deploying IFMC projects in Ontario, with differing views on how the Province should further encourage these technologies.
- Navigant conducted a survey of Ontario stakeholders and found that LDCs were interested in including IFMC projects in their distribution rate applications, but felt that they would benefit from guidance on how to develop business cases for these projects.

***NTD: to be refined, pending further consideration of policy options (expected in June 2017).**

2b) Alignment and Collaboration within and between conservation programs

- ENERGY and its agencies are working with MOECC and other partner ministries to ensure a streamlined, customer-focused approach to conservation and low-carbon technology programs.
    - As an early example of collaboration, the IESO is providing web, customer and program design services to the Green Ontario Fund.
- Post-2020, Ontario could ~~will~~ move towards an integrated approach to conservation programs across the province following completion of the CFF, where most or all conservation programs would be delivered by a single agency with funding from cap and trade proceeds.

Key Information:

- The IESO is under a Service Level Agreement with MOECC to provide the above services, and is identified as the program delivery agent for residential Green Ontario Fund programs in MOECC's draft May 30 TB submission which will seek approval of program design concepts for the new entity.

- **Enhanced Mid-Term incentive** of $0.015/kWh is available for LDCs in joint CDM plans (regular incentive is $0.010/kWh).
- **$35M Collaboration Fund:** Project examples: Joint LDC/gas events; regional energy managers; shared refrigeration specialists for new Small Business Refrigeration Program.
- **Joint Toronto Hydro-Enbridge Gas Smart Thermostat program** provides $100 rebate (incentive funded 50:50).

- Through the MTR of the CFF, IAP, and Demand Side Management (DSM) Framework, the IESO and OEB are working together to evaluate the results of collaboration to date and identify barriers to further collaboration. Formal reports are expected in 2018.

Expected stakeholder reaction:

- Consumer groups, ENGOs, and distributors will be looking for and are expected to respond positively to government efforts to reduce barriers to collaboration and promote convenient programs for customers.
- Distributors support a one-window approach but are concerned about impacts to their targets/programs.

2c) Regulated Price Plan (RPP)

- ENERGY is working with the OEB to give customers more choice in their electricity price plans.
- The OEB is testing innovative Time-of-Use (TOU) price structures through pilots across Ontario, including price plans with flat rates, very low overnight rates and seasonal TOU rates, which introduce a flat rate during spring and fall. Pilots are expected to be in market by November 2017.

Key Information:

- The OEB issued a multi-year "RPP Roadmap" in 2015 that outlines a comprehensive review of the RPP, and aims to ensure that the RPP better responds to policy objectives, improves system efficiency, and gives consumers greater control.
- Implementing price pilots is a component of the RPP Roadmap. The OEB launched a call for RPP pilot applications in July 2016 and received five applications from LDCs across Ontario, proposing to involve nearly 27,000 customers.
- As of May 26, 2017 two pilots are approved and two more are in advanced stages of review.
  - Pilots are expected to be in market by November 2017, with results available in 2019.
- The pilots will provide value by delivering reliable results at a manageable scale. Changes to RPP price plans in the absence of evidence about customer understanding and price responsiveness can lead to cross-subsidies between customers and jeopardize cost recovery – which, under the OFHP, could add refinancing costs beyond those forecast.

Expected stakeholder reaction:

- Customers of participating LDCs are expected to welcome the choice to participate in the RPP pilots.
- In the long-term, customers are expected to support more than one time-of-use pricing plan from their LDC, pending the OEB's decision to implement different pricing plans on a full-scale basis.

3a) Implementing Green Button Province-Wide

- Ontario will continue to support and promote the adoption of the Green Button Standard and will develop and consult on an approach to expand Green Button province-wide for energy and water in 2017.
- The proposal will consider stakeholder feedback from 2016 consultations, and findings from a Green Button cost-benefit analysis.

Key Information:

- Green Button allows Ontarians to access and share their data on electricity, natural gas and water consumption in a secure, standardized electronic format.
- The CCAP committed to expand Green Button province-wide to promote energy and water conservation. ENERGY is planning to report back to Cabinet with an implementation approach in 2017.
- Key benefits of Green Button include increased energy efficiency and conservation:
  - Customers can efficiently and consistently access and share their utility consumption data.
  - Solution providers can rely on a consistent data format and ensure a uniform application development environment across the province, leading to new and innovative offerings and higher uptake
  - Can in the future facilitate Ontario's Broader Public Sector energy and GHG reporting requirements, Large Building Energy and Water Reporting and Benchmarking, Demand Response, and other new initiatives.

Expected stakeholder reaction:

- Consumers and solution providers will be supportive of the expansion of Green Button for standardizing and improving access to energy consumption data, and growing the market for energy management solutions.
- Some LDCs may express concern that they are already providing customer data using in-house systems. Ontario can communicate the benefits of automated sharing capabilities and consistency across distributor territories.

3b) Large Building Energy and Water Reporting and Benchmarking

- Ontario's new Energy Water Reporting and Benchmarking regulation is a tool to help building owners understand their energy performance and compare the energy and water usage of their buildings with the performance of similar facilities and identify where improvements can be made.

Key Information:

- Enhances Ontario's commitment to conservation and builds on the success of energy and greenhouse gas reporting initiatives for Ontario government owned facilities and broader public sector organizations.
- Supports conservation across multiple fuels including electricity, natural gas as well as water by making tools available to building owners so they can measure and track energy and water performance.
- Makes new tools available to reduce energy, water and GHG emissions in the buildings sector and could drive participation in electricity and natural gas utility conservation programs and programs that would be delivered by the new low-carbon development entity.
- The reporting requirements come into effect in July 2018, starting with the largest buildings in year one and ultimately requiring buildings 50K sq.ft. and above to report their energy and water consumption by 2020.

Expected stakeholder reaction:

- To date, feedback shows support for new tools to help consumers understand their energy consumption.

3c) Smart Thermostats

- Smart thermostats are the next important technology for homeowners looking for more ways to reduce their home heating and cooling costs, and their carbon footprint.
- Moving forward, Ontario will work with its agencies to standardize incentive offerings and ensure smart thermostats incentives are available for homeowners across the province.

Considerations:

- Ontario has enabled several smart thermostat incentive programs.
    - Standalone $100 bill rebates are available in Enbridge Gas' service area – expanded to homes heated primarily with oil, gas and wood through the Green Investment Fund (GIF).
    - Union Gas offers a $100 incentive for smart thermostats as one measure to undertake when completing its Home Energy Reno Rebate program, also GIF-enhanced (homeowner must complete two measures).
    - The Save on Energy Heating and Cooling Program will offer $50 rebates with the purchase of a energy efficient furnace or air source heat pump starting in June 2017.
- On May 30, 2017, MOECC is expected to present to Treasury Board a proposal for programs delivered by the Green Ontario Fund, which will include a smart thermostat program for residential consumers (details being finalized).
- For the first time during the IESO's 2016 DR Auction, a residential DR provider (OhmConnect) is contracted for the summer period (1 MW). Residential DR utilizes smart devices / thermostats to call upon customers to reduce energy use when the grid needs it.

Expected stakeholder reaction:

- LTEP consultations show broad support for new tools to help consumers understand their energy consumption.

Appendix

A1. Achievements since 2013 LTEP
A2. Investor Confidence Project (ICP)
A3. Municipal Energy Plan program
A4. Green Investment Fund (GIF)
A5. Energy Conservation Education and Awareness
A6. Broader Public Sector Energy and GHG Reporting
A7. Eligibility of Renewable Energy and Storage Projects under CFF and IAP

A1. Achievements since 2013 LTEP

- Following the 2013 LTEP commitment to put 'Conservation First,' ENERGY has worked with its agencies to put conservation first in planning, approval and procurement processes.
- The IESO and OEB respectively launched new, six-year electricity and natural gas conservation and EE frameworks.
  - The Conservation First Framework (CFF), together with the Industrial Accelerator Program (IAP) for transmission-connected customers, are expected to achieve 8.7 terawatt-hours (TWh) of electricity savings in 2020, working towards our long-term conservation target of 30 TWh in 2032.
  - On December 22, 2014, Ontario launched a new natural gas Demand Side Management (DSM) Framework, which brings Ontario's total spending on natural gas conservation programs in-line with leading U.S. jurisdictions, allowing gas utilities to pursue greater levels of savings.
- Following the release of OEB Guidelines in 2014, LDCs are now including conservation and demand management targets in Integrated Regional Resource Plans as part of regional planning.
- Ontario continued to show leadership in establishing efficiency standards for products and appliances. Since 2013, new or enhanced EE standards were set for over 60 products including 30 new products. In addition to energy efficiency, water efficiency standards were also set for products using both energy and water.
- The province's sustained commitment to conservation since 2005 has resulted in approximately 13 TWh of electricity savings in 2015 – enough to power the cities of Mississauga, Brampton and Guelph, about one-third of which are from codes and standards, and the remaining two-thirds from conservation programs. As a result, Ontario is on track to achieve its long-term electricity conservation target.
- The IESO has transitioned Demand Response (DR) from a program approach to a market-based approach and has completed two DR auctions in December 2015 and December 2016. Results from IESO's DR Auctions were:
  - 2015 DR auction: 390 MW were procured for the summer commitment period (May 2016 to October 2016) and 400 MW for the winter commitment period (November 2016 to April 2017).
  - 2016 DR auction: 455 MW of DR capacity for summer and 477.5 MW of DR capacity for winter (in the December 2016 auction, the IESO also successfully integrated residential DR resources into the auction process).

A1. Achievements since 2013 LTEP (cont'd)

- In 2016, 98% of broader public sector organizations reported to the Ministry under Ontario's Broader Public Sector Regulation (O.Reg. 397/11), which was established to help public agencies better understand how and where they use energy and to develop conservation plans to guide energy savings. In addition, 82% of broader public sector organizations developed conservation and demand management plans in 2014.
- Ontario continued to promote Green Button by completing pilots and undertaking a cost-benefit analysis as well as consultations to develop a province-wide program, a key CCAP commitment.
- Ontario's latest multi-year funding (2015-2018) for EcoSchools will enable the program to engage approximately 4,500 teacher leaders and 1 million students in grades K-12 to develop ecological literacy and environmental and conservation practices.
- In June 2016, the Minister issued a direction to IESO to, in consultation with distributors, centrally design, fund and deliver a province-wide pay-for-performance (P4P) CDM program for multi-site customers, and a province-wide whole home CDM pilot program for residential customers. P4P began accepting applications on December 21, 2016.
- In October 2016, Ontario announced the province-wide launch of the Union Gas Limited and Enbridge Gas Distribution's enhanced home energy audit and retrofit programs, which have received $100M from Ontario's new Green Investment Fund.
- In December 2016, the Minister issued direction to the IESO for province-wide availability of programs to customers starting in 2017.
- Ontario's Municipal Energy Plan program supports municipalities' efforts to better understand their local energy needs, identify opportunities for energy efficiency and clean energy, and develop plans to meet their goals through a community energy planning process. Program participation currently represents 31 municipalities across Ontario.
- Work has been initiated with other provinces and the federal government on national harmonization and advancement of efficiency standards across Canada.

A2. Investor Confidence Project (ICP)

- ICP was established in 2013 by the Environmental Defense Fund (EDF). EDF entered into a partnership with Green Business Certification Inc. (GBCI) in October 2016, through which GBCI will assume responsibility for administering ICP in the USA.
- Ontario is working to increase access to financing for energy efficiency projects by supporting MaRS Advanced Energy Center (AEC) in piloting and helping inform the adaptation of the Investor Confidence Project (ICP) for the Canadian market.

Key Information:

- On March 10, 2017, ENERGY entered into a Transfer Payment Agreement (TPA) with AEC to advise EDF and GBCI on the development and implementation of Canadian ICP protocols. Through the TPA funding, AEC is expected to establish an ICP Pioneer Group to seek stakeholder input on adapting ICP to Canada and develop the Ontario-based pilot.
- The project will result in AEC providing advice to EDF and GBCI on how to accelerate development of Canadian ICP protocols and their use for the Ontarian and Canadian markets.

Expected stakeholder reaction:

- Energy stakeholders are expected to react positively, as ICP helps to remove barriers to energy efficiency financing.

A3. Municipal Energy Plan Program

- The Municipal Energy Plan (MEP) program supports the efforts of municipalities to assess the community's energy use and needs, consider the impact of future growth, and support local economic development.

Key Information:

- LTEP identifies the MEP program as a community engagement tool that can help link regional and provincial planning.
- CCAP states: "Ontario intends to fund the development of Community Energy Plans and Climate Action Plans (and their supporting data) with greenhouse gas pollution inventories for municipalities and First Nation and Métis communities that currently do not have these plans. These programs would include training and guidance to help communities access energy use data for their community energy planning and mapping." (p. 33)
- An inter-ministry working group has been established to develop program design of this Municipal Action Plan Program, led by MOECC in collaboration with ENERGY and MMA.
- The new program may replace MEP, if it meets the same needs, or may operate alongside MEP.

Expected stakeholder reaction:

- Stakeholders may be confused if a similar community energy planning program is launched.

A4. Green Investment Fund (GIF)

- GIF will help about 37,000 homeowners across the province to conduct audits in order to identify energy-saving opportunities and then complete retrofits by 2019. The investment will cumulatively reduce approximately 1.6 megatonnes of lifetime greenhouse gas emissions.

Key Information:

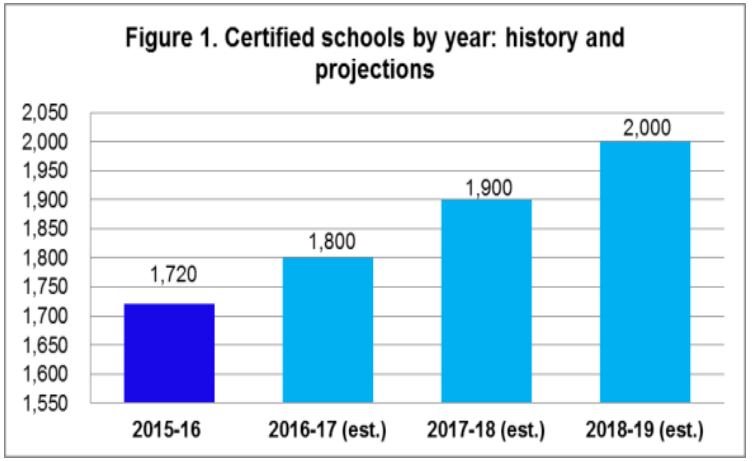
- The investment will continue to enhance the existing home energy audits and retrofit programs offered by Enbridge Gas Distribution (Enbridge) and Union Gas (Union).
- GIF expands residential audit and retrofit programs offered by Enbridge and Union to Ontarians that use primarily natural gas, oil, propane or wood to heat their homes.
- The launch of the Whole Home Pilot (which leverages the GIF programs by adding electricity measures) and the Green Ontario Fund, are expected to drive participation and support achievement of targets under GIF.

Expected Stakeholder Reaction:

- Homeowner feedback expected to be positive as GIF has enabled inclusion of electricity elements through IESO's Whole Home Pilot which provide a one stop shop for residential customers.
- Stakeholder feedback is expected to be positive. For example, Kingston Utilities and Kitchener Utilities have not had access to natural gas conservation programs previously and have expressed high interest in partnering to achieve program success.

A5. Energy Conservation Education and Awareness

- Energy Conservation Education and Awareness will continue and improve public energy literacy, (especially amongst children/youth through Ontario EcoSchools) and help increase environmental awareness, engagement and behavioural change.



Key Information:

- Ontario works with partner agencies to continue developing public education tools to improve energy literacy, such as emPOWERme.
- Currently, 1,720 schools from 55 school boards are certified EcoSchools.
- More than 800,000 students across the province are engaged in the program.
- Over the next two years, the program is expected to grow to about 2,000 schools from 62 school boards, reaching approximately 1 million students from kindergarten to grade 12 (see Figure 1).

Expected stakeholder reaction:

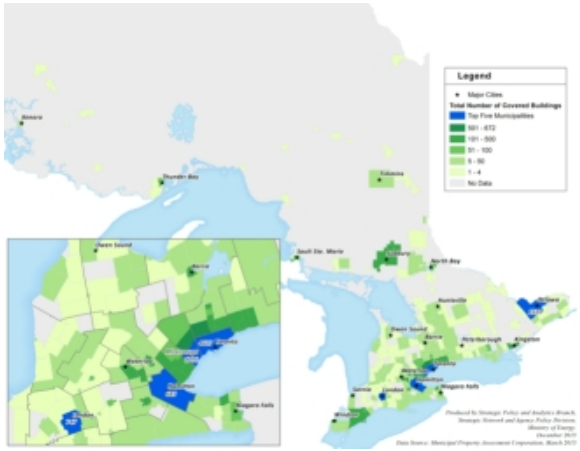
- Positive feedback as there is a continued commitment to enhancing youth energy literacy and raising a conservation awareness.

A6. Broader Public Sector Energy and GHG Reporting

- O. Reg. 397/11 requires broader public sector (BPS) organizations to:
  - Report annually to the Ministry of Energy (ENERGY) on their energy use and greenhouse gas (GHG) emissions and publish the reports on their websites (starting in July 1, 2013); and
  - Revelop a five-year conservation plan and publish the plan on their websites. Plans must be updated every five years beginning in 2019 (Starting July 1, 2014).
- BPS organizations support for the regulation is high, with 98% of organizations submitting their annual energy and GHG report in 2016 and 82% developing energy conservation and demand management plans.

Key Information:

- LTEP would list Ontario's BPS Energy and GHG Reporting Regulation as a benchmarking tool that helps organizations understand how much energy their buildings are using.
- The data collected has been used by MOECC and other Ministries to develop CCAP funding initiatives. CCAP identifies up to $800 million for Ontario's school boards, universities, colleges and hospitals for GHG reduction initiatives.
- The TRCA has used the school board data to benchmark and identify conservation targets for Ontario's schools.



Expected stakeholder reaction:

- BPS organizations will continue to support the regulation and will welcome CCAP funding to reduce their GHG emissions.

A7. Eligibility of Renewable Energy and Storage Projects under CFF and IAP

- Renewable Behind the Meter Generation (BMG) with energy storage allows customers to reduce their draw of electricity from the grid (through onsite generation), while reducing peak demand and improving reliability.
- Renewable energy projects, including those paired with energy storage systems, will continue to be eligible for incentives under the CFF and IAP.

Key Information:

- Renewable BMG projects are eligible CDM activities under the CFF and IAP; however, there are currently few examples of such projects due to high technology costs relative to alternatives.
- CDM is defined as reduced electricity consumption. Storage must be paired with onsite generation to meet this definition.
  - Stand-alone energy storage results in demand-shifting, and can result in increased draw from the grid due to conversion losses.

Expected stakeholder reaction:

- Proponents of energy storage, including the many stakeholders represented by Energy Storage Ontario will be pleased with the recognition of the value that storage brings and will support its adoption under existing conservation programs.
- LDCs may express concern that the additional cost of storage is being encouraged in CFF projects without providing additional energy savings toward CFF targets.