SUBJECT TO FACT CHECK
CABINET BRIEFING NOTE

Energy

DRAFT PREPARED FROM NO MATERIALS- 2017 Long-Term Energy Plan (Part 2)

Comment [HT1]: NOTE: all charts are draft and placeholders to be updated when final materials available

Cabinet July 26, 2017	Cabinet August 31, 2017	Cabinet Fall 2017	Public Release Fall 2017

This government's commitment	"Building on the processes and principles used in the 2010 and 2013 plans and the new legislation, work with partner agencies and energy sector agencies to consult with consumers and stakeholders, and engage with Indigenous communities to develop Ontario's next Long-Term Energy Plan (LTEP) to be released in 2017" Minister of Energy Mandate Letter, September 2016.

SUMMARY OF PROPOSAL

The Ministry of Energy is seeking policy approval to finalize Ontario's next Long-Term Energy Plan (LTEP). The LTEP is the energy sector's roadmap and generally identifies the needs for investments over the shorter term, while broadly mapping out the direction of the energy sector over a 20 year timeframe. The Ministry received approval on July 26, 2017 for the overarching themes of the next LTEP as well as approval of initiatives to be announced through the document.

At this time, the Ministry is seeking Cabinet approval of modelling outlooks to be included in the 2017 LTEP, including:

Comment [HT2]: Energy: does this match what is being proposed? Are we expecting others such as industrial electricity cost projections?

- Electricity Supply and Demand
- Fuels Demand
- Greenhouse Gas (GHG) Emissions (Fuels and Electricity)
- Typical Residential Electricity Bill
- Typical Residential Natural Gas Bill

Context

The province previously released two LTEPs, in 2010 and 2013, which included modelling outlooks for typical residential electricity bills, electricity demand, electricity supply, and emissions. In line with the increased focus on the fuels sector for the 2017 LTEP, the Ministry is proposing to include additional modelling related to the fuels sector that will provide a more complete picture of the energy sector.

What is the regulatory impact of this proposal?

The LTEP has been developed as per the legislative process outlined in the *Electricity Act, 1998*. A regulation is also required under the *Electricity Act, 1998* to specify how often the government would release the LTEP. The Ministry brought forward the proposed frequency regulation to LRC on August 29, 2017.

What is the expected cost to government?

Cost impacts of initiatives contained under the LTEP were addressed in the July 26, 2017 policy submission. ENERGY received TB/MBC program design approval on August 16, 2017 for the renewed Smart Grid Fund (SGF) proposal. Funding for the SGF and International Energy Demonstration Fund pilot will be sought through the 2018-19 PRRT process.

While the current proposal of modelling outlooks has no direct cost implications for government, it is anticipated that the GHG reduction targets for the fuels sector will lead to additional costs for consumers of transportation and heating fuels. For example, Natural Gas prices are anticipated to increase given the assumptions for the increased percentage of Renewable Natural Gas (RNG) into the overall supply. Uncertainty related to electricity demand and the possibility of needing to contract for additional supply outside of current models could also have future electricity rate impacts (See page 11- Rate Impacts). Impacts from the Ontario Fair Hydro Plan (OFHP) are included in the proposed modelling.

How will the changes be communicated?

The Ministry is working towards public release of the 2017 LTEP in October. Communications will be proactive and sustained in anticipation of high stakeholder and public interest. Themes in the LTEP will be leveraged to create a strong narrative, and messaging will highlight the benefits for consumers, including improved affordability, innovation and customer choice.

In addition to a News Release and Backgrounder issued the morning the LTEP is released, proposed tactics include a technical briefing for stakeholders, a press conference and separate discussions with First Nations and Métis leaders.

A strong issues management plan is also in development to mitigate potential negative reaction to components of the plan.

CABINET OFFICE ANALYSIS

Introduction:

It is anticipated that there will be increased public interest in the 2017 LTEP over previous plans given the connection to Ontario's Climate Change Strategy and Climate Change Action Plan (CCAP), and the profile of energy affordability concerns which led to the development of Ontario's Fair Hydro Plan (OFHP), which will feature prominently in the 2017 LTEP.

The 2017 LTEP will highlight various key policy initiatives which are intended to send clear signals to the public, partners, and sector participants regarding the province's direction for the energy sector. On July 26, 2017 the Ministry received approval for the overarching themes of the next LTEP as well as approval of initiatives to be announced through the document.

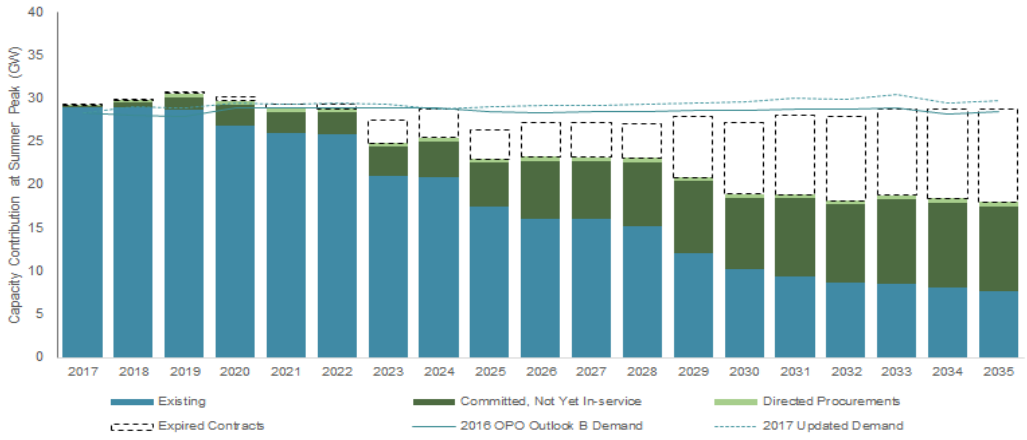
At the start of the 2017 LTEP process two technical documents were prepared to provide a baseline of information about the energy sector and set the stage for the extensive engagement process that the Ministry undertook with stakeholders, the public and Indigenous communities. The Independent Electricity System Operator (IESO) prepared the Ontario Planning Outlook (OPO) for the electricity sector, and external consultant Navigant prepared the Fuels Technical Report (FTR). Both documents contained various interrelated modelling "outlooks" for the energy sector based on the best information and assumptions at the time, and were released publicly for the consultations. Since then, revised outlooks were prepared by the Ministry, Navigant and IESO that reflect updated information and assumptions. The Ministry is seeking approval of the modelling outlooks to be included in the 2017 LTEP based on the updated information and assumptions, which show projections from 2017 to the end of the planning period in 2035.

Proposed Outlooks

Supply and Demand

Integrated Electricity Supply and Demand

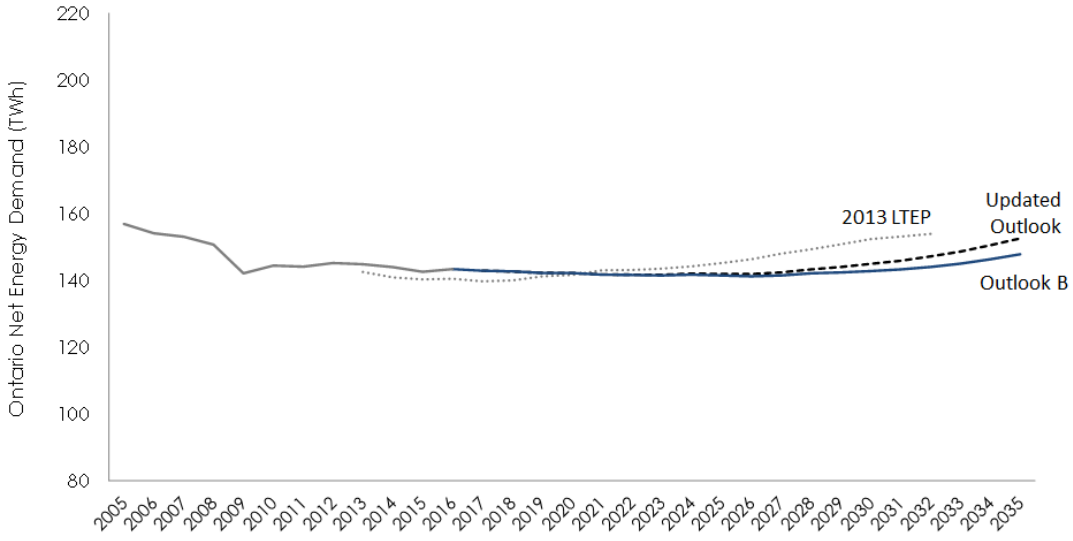
ENERGY reports that 18 GW of supply resources will reach the end of their contact term by 2035. There will be a need for additional resources in the early 2020s. These resources could offer into the electricity and/or capacity market to provide additional supply as required. Maintaining flexibility allows for the electricity system to meet increases and decreases in future demand. Assumptions for the supply chart include the most recent nuclear refurbishment and operations timelines, the suspension of the Larger Renewable Procurement (LRP) II, and the current Ontario-Quebec electricity trade agreement (See Appendix A- Key Modelling Assumption).



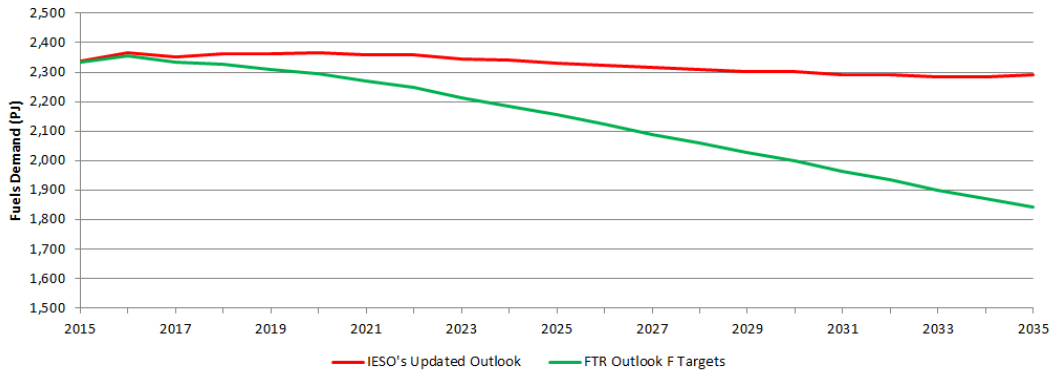
There remains significant uncertainty regarding what energy demand will be over the coming decades linked to the emergence and adoption of new technologies as well as uncertainty over industrial demand. In the past the province has prescribed a specific supply mix of different electricity generation resources to meet forecasted demand. Going forward, the Ministry is proposing a less prescriptive approach as to how future demand scenarios will be managed, which will provide greater flexibility to the IESO and OEB to make these decisions. This mitigates some of the risk of the general uncertainty as to whether demand levels will be as forecasted, or if that demand may be met by innovative and emerging technologies such as distributed generation or storage. The approach is sometimes described as a "technology neutral" where the policy framework guides certain objectives, but leaves the actual choice as to what will meet those needs open. There may be some concern that this approach would be seen as Ontario backing away from renewable energy and the province's climate commitments. Careful messaging in the 2017 LTEP will be needed to underscore the province's continued commitment to low and zero GHG emitting technologies with positive environmental attributes in support of the CCAP objectives.

Electricity Demand

In the OPO IESO modelled 4 possible outlooks using different assumptions. The updated outlook is based on "Outlook B" (i.e., flat demand outlook) from the OPO, which explores a level of long-term demand that roughly matches the level of demand that exits today with the addition of increased Electric Vehicle (EV) uptake (2.4 million EVs by 2035) and recent sector updates (about 5 Terawatt hours (TWh) higher than Outlook B by 2035). The relatively flat demand projection includes reductions associated with incremental conservation improvements, which is countered by increased demand from electrification and increased economic activity over the planning period.



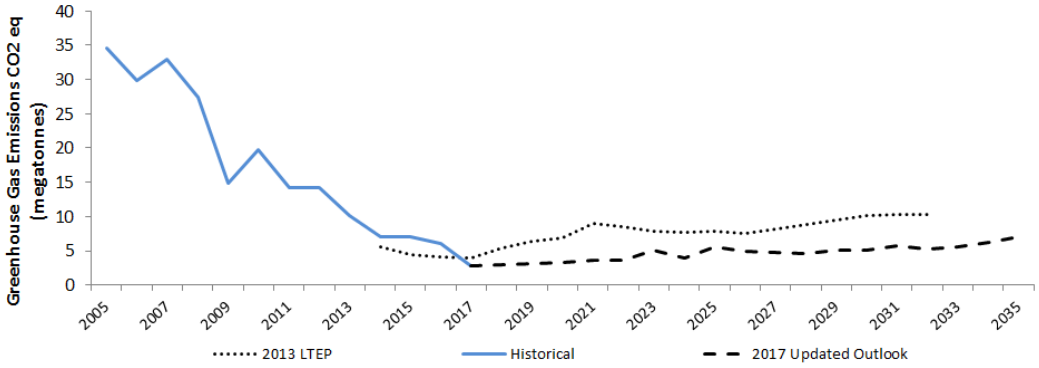
Fuels Demand



The FTR prepared by Navigant contained 5 different fuels demand outlooks, with 3 aligning to the OPO electricity outlooks B, C, and D, and 2 additional models with higher levels of demand side management and fuel switching assumed in order to align with CCAP targets (i.e., outlooks "E" and "F"). In order to align with the government's GHG reduction targets under CCAP, the Ministry is proposing to use "FTR Outlook F Targets" as the fuels demand model in the 2017 LTEP. The Ministry is exploring options to achieve FTR Outlook F Targets in manner that would not result in the need for incremental electricity generating capacity beyond the planned supply resources outlined in IESO's Updated Outlook, which does not include additional electrification of home heating and industrial processes (See Appendix A- Key Modelling Assumption). Options include exploring the potential for enhanced electricity trade agreements and understanding the expected impacts of the further deployment of potentially disruptive technologies (e.g. storage and distributed generation etc.).

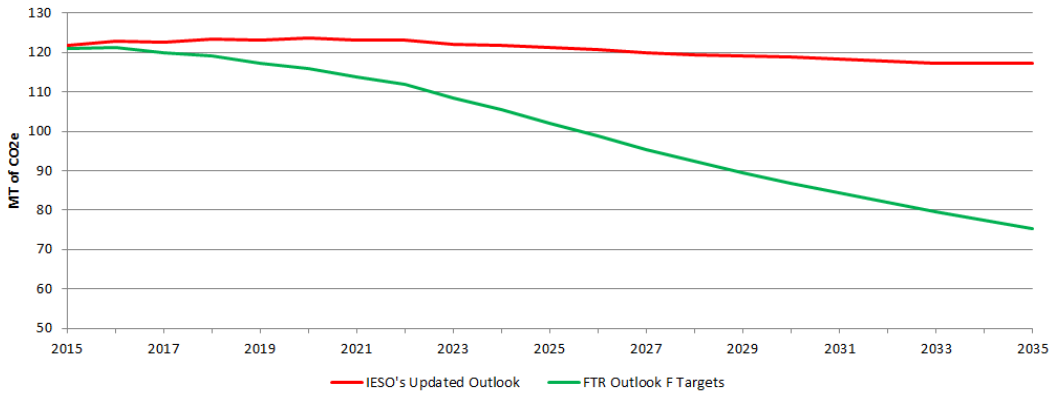
GHG Emissions

Electricity GHG Emissions



GHG emissions from the electricity sector have dropped by over 80% since 2005 largely due to the retirement of the coal plants. The trend for lower emissions is forecasted to continue over the planning period and is projected to be somewhat lower than the previous projections made under the 2013 LTEP. However, it also outlines a net increase in emissions from the sector between 2017 and 2035 [TBC] due to an assumed increase in natural gas generation to economically meet the increased demand scenario under the IESO Updated Demand Outlook. This will likely be viewed as inconsistent with the province's climate change objectives, but is also mitigated in part by the fact that the increased demand projected by 2035 is largely tied to projected increase uptake of electric vehicles (EVs), and that the province is projecting an overall reduction of emissions from the energy sector of 36% between 2017 and 2035 (see Integrated GHG Outlook below) [TBC].

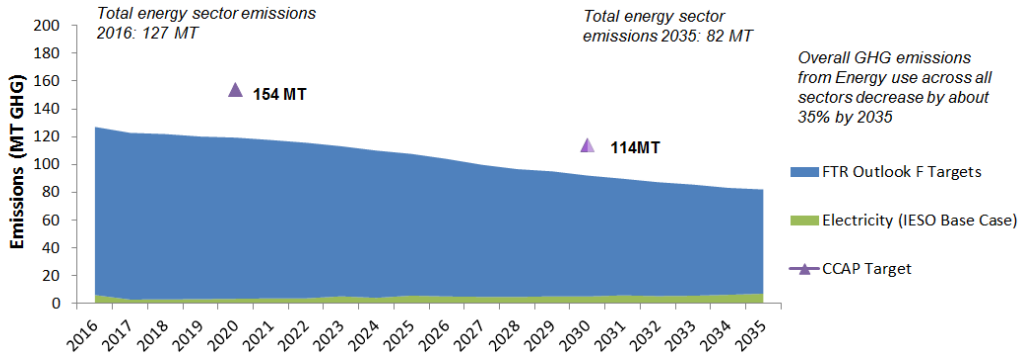
Fuels GHG Emissions



Adopting the FTR Outlook F Targets scenario demonstrates a significant decline in GHG emissions. However, it will have cost implications for consumers of fuels (i.e., transportation and home heating) given the increased costs associated with initiatives to increase amounts of ethanol and biodiesels for transportation fuels and Renewable Natural Gas (RNG).

Comment [HT3]: Energy, do we have specific estimates of these implications?

Integrated GHG Emissions



Note: Emissions excludes non-energy sources including agriculture, waste, and non-energy related industrial processes. Updated IESO base case for electricity subject to key assumptions, Emissions from FTR Outlook F used as a proxy pending updated modelling from Navigant. CCAP Targets for Ontario are 15% and 37% reduced emissions from 1990 levels (~182 MT) by 2020 and 2030 respectively.

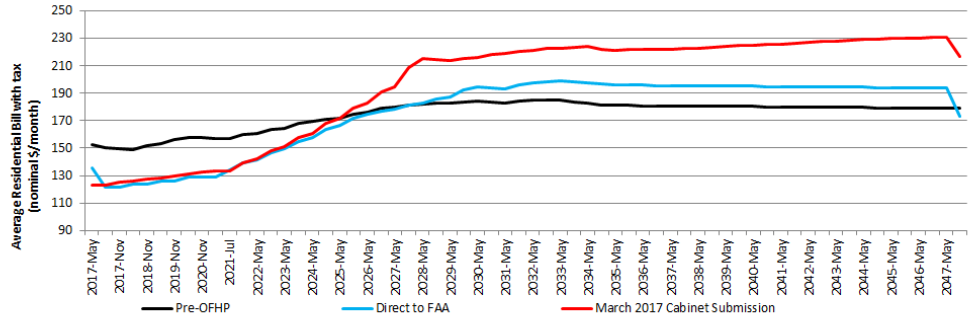
Under FTR Outlook F Targets it is projected that integrated energy system GHG emissions will meet the reduction targets under CCAP. It is expected that sector participants and stakeholders will be looking at the alignment of the demand and supply outlooks in the 2017 LTEP and the government's overall GHG emission reduction targets. Industry and eNGO analysts may be skeptical of the LTEP's presentation of the forecasted fuel demand and GHG emissions reductions and the associated electricity demand forecast and supply planning given the gap between the projected supply needed to reach the FTR Outlook F Targets. However, this risk is mitigated by the uncertainty that exists in the energy sector with respect to the future penetration of potentially disruptive technologies for distributed supply, storage, and even more passive energy systems such as thermal hot water heaters; and is consistent with the messaging on planned flexibility for the system. The Ministry will continue to work with MOECC and other partner ministries on the development and implementation of initiatives to meet emissions reduction targets for the energy sector.

Typical Residential Bills

Typical Residential Electricity Bill

The OFHP has a significant impact on the modelling of the typical residential electricity bill. Under the Global Adjustment (GA) refinancing component of the OFHP, the Minister of Energy must calculate the Fair Allocation Amount to align clean energy costs and benefits into the future to ensure intergenerational fairness. This figure is still under development and is an important input in the development of the 2017 LTEP residential price forecast curve as it will generally determine the rate of accumulation of debt under the plan and when recovery of the debt will begin. The OFHP provides that electricity rates will increase by inflation for the first 4 years of the plan, following which residential electricity rates are now forecasted to increase at an average rate of about 5% between the end of the inflationary cap until the recovery period (i.e., 2021-2027).

Comment [HT4]: Energy: when will this work to be complete? In advance of the 31st?



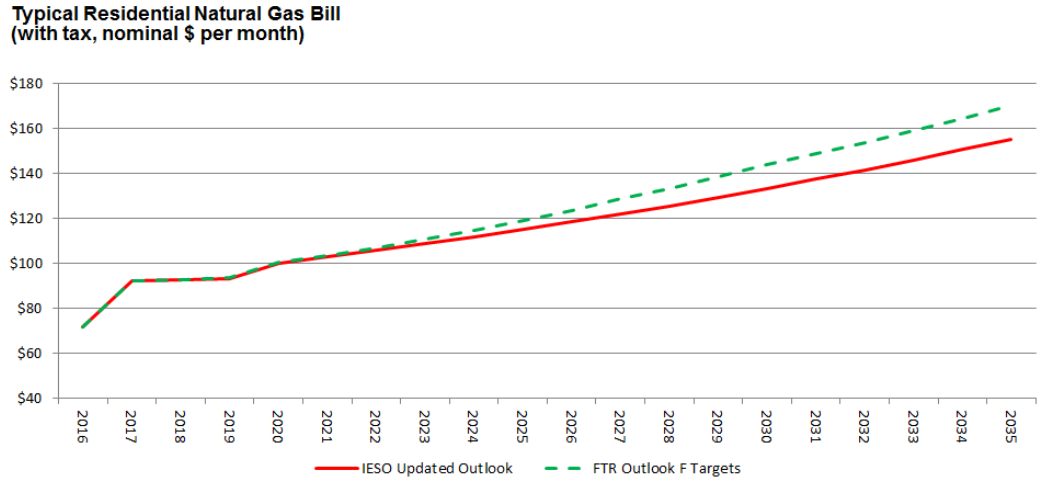
	2017-May	2017-Jul	2018-May	2019-May	2020-May	2021-Jul	2022-May	2023-May	2024-May	2025-May	2026-May	2027-May	2028-May	2029-May	2030-May	2031-May	2032-May	2033-May	2034-May	2035-May	2036-May	2037-May	2038-May	2039-May	2040-May	2041-May	2042-May	2043-May	2044-May	2045-May	2046-May	2047-May	2048-May
Average Residential Bill ($/month)	136	121	124	126	129	134	142	149	158	166	174	178	183	188	195	193	198	199	198	196	196	196	196	195	195	195	195	195	194	194	194	194	173
Change in bill (%)	n/a	-10.8%	2.0%	2.0%	2.0%	4.5%	5.4%	5.5%	5.5%	5.5%	4.8%	2.2%	2.5%	2.7%	3.9%	-0.8%	2.3%	0.7%	-0.7%	-0.9%	-0.1%	-0.1%	-0.1%	-0.1%	-0.1%	-0.1%	-0.1%	-0.1%	-0.1%	-0.1%	-0.1%	-0.1%	-10.5%
Total Accumulated Debt ($B)	0.2	1.0	3.3	5.8	8.5	11.5	13.6	15.5	17.2	18.4	19.3	20.2	20.9	21.3	21.2	20.9	20.5	19.9	19.1	18.2	17.2	16.2	15.1	13.9	12.7	11.3	9.9	8.3	6.7	4.9	3.1	1.0	0.0

The OEB will continue to set rates as it currently does now based on demand and cost estimates. The residential bill outlook above includes assumptions such as the impacts of

cap and trade and that generation assets will continue to be available for the duration of the planning outlook among other things (See Appendix A- Key Modelling Assumptions).

Since the initial implementation of the OFHP, the Ministry has continued to investigate ways to take costs out of the system as well as work to implement initiatives such as the IESO Market Renewal. While some forecasted savings related to Market Renewal are accounted for in the bill outlook, other cost saving initiatives require implementation over a longer time horizon (e.g. OEB work with LDCs on efficiency), and while they are expected to have positive impacts on system costs it is difficult to ascribe firm dollar projections for the purposes of modelling long-term outlooks [TBC]. It should be noted that changes to demand, interest, financing, technology performance and system cost assumptions can significantly impact this price forecast.

Typical Residential Natural Gas Bill



Residential Natural Gas bills relative to IESO's Updated Outlook are expected to increase primarily due to further substitution of higher-cost RNG to support reductions in GHG emissions. The above chart also assumes a constant monthly consumption each year and integrates cap and trade price assumptions.

Stakeholder and Partner Considerations:

Comment [HT5]: Energy: Please provide updates with reactions relevant to the proposed outlooks as appropriate.

General public (including residential and small businesses) – Neutral: it is expected that the general public will be interested in supply choices, conservation and support programs and consequences with regards to electricity costs, emissions, safety (nuclear), and local economic development opportunities/consequences.

Large Industrial and Commercial Consumers – Neutral to negative: it is expected that industrial and commercial consumers will be most interested in energy cost certainty during Ontario's transition to decarbonisation, and are in general supportive of conservation initiatives. MEDG / MRIS advise that some stakeholders will argue that the LTEP does not go far enough to make rates affordable and competitive with other

jurisdictions and that new industry/SME programs are needed to help Ontario's industry regain competitiveness, attract capital investment, and retain businesses / jobs in Ontario.

Tenants – Mixed: the Federation of Rental Housing Providers of Ontario (FRPO) and Housing Services Corporation (HSC) were supportive of conservation but concerned about the upfront capital required for energy retrofits. Based on their engagement feedback, it is expected that FRPO will be interested in the way that affordability and conservation initiatives will help low-income tenants in the rental housing sector who are not in sub-metered units.

Northern communities – Neutral to negative: Northern communities raised concerns about the impact of electricity delivery costs, declining reliability, capacity constraints, and the costs of system expansion/enhancement on regional economic development.

Indigenous communities – Positive: First Nations and Métis should be generally supportive as the LTEP initiatives will respond to feedback received about energy costs, need for support for community energy plan implementation and small-scale, local energy opportunities, as well as continued support for conservation.

eNGOs – Mixed: Environmental groups will be supportive of conservation, renewables, and continued development of the clean-tech sector. However, they may express disappointment regarding the commitment to nuclear refurbishment, the emphasis on electricity, and the forecasted increase in GHG emissions from the electricity sector over the planning horizon [TBC].

Natural Gas Utilities – Neutral to positive: it expected that utilities will be interested in incentives for compressed and renewable natural gas and demand side management, and opportunities for innovation.

Comment [HT6]: Energy: what is the anticipated reaction from the utilities to the forecasted decline in fuels demand?

LDCs – Mixed: LDCs will be supportive of an environment that starts to think through removal of regulatory barriers in the industry and provide the ability to innovate. There is also an emphasis of cost savings and efficiencies for the sector, and this will likely cause mixed reactions amongst LDCs.

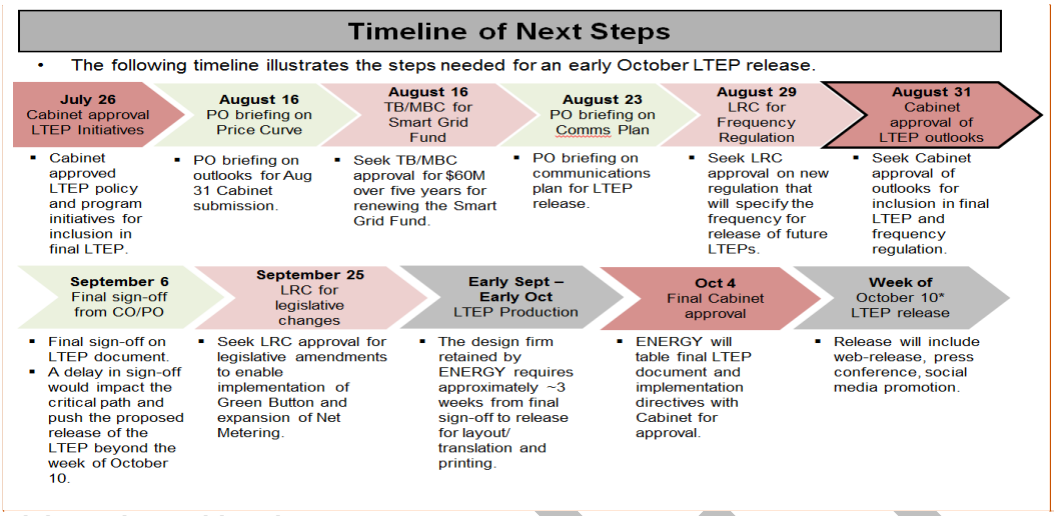
Comment [HT7]: Energy: anticipated reactions to the modelling?

Municipalities – Mixed: Municipalities raised concerns over high electricity rates and requested greater transparency into system costs, global adjustment, and rate relief measures. Municipalities that support certain types of generation may be disappointed by a technology neutral approach. Municipalities are expected to be supportive of this LTEP taking a more holistic view of energy including natural gas. The Ministry briefed the Association of Municipalities of Ontario (AMO) on LTEP in April 2017.

Comment [HT8]: Any update on this?

Delivery:

Following approvals the Ministry will develop the final LTEP document and OEB and IESO Implementation directives and report back to Cabinet for approval.



Comment [HT9]: To be updated based on final submission

Risks and Considerations:

Climate Change - It is anticipated that there will be increased public interest in the 2017 LTEP over previous plans given the connection to Ontario's Climate Change Strategy and Climate Change Action Plan (CCAP). It is expected that the plan will be reviewed by some stakeholders to assess consistency with the government's commitments under the CCAP.

Rate Impacts – The initiatives to be announced under the LTEP are generally expected to provide value to the electricity system and reduce rates. However, adopting the FTR Outlook F Targets scenario, while it demonstrates a decline in GHG emissions, will have cost implications for consumers of fuels (i.e., transportation and home heating), which could generate a negative responses from the public and stakeholders. In addition, the fuels GHG reduction model includes assumptions around the electrification of heating, industrial processes, and public transit, but these assumptions are not accounted for in the electricity demand outlook given the degree of uncertainty present over the planning cycle. There is a risk that if the demand from these sources materializes as projected, and can't be met through alternative means (e.g. distributed generation etc.), there may be a need to procure additional supply which would have implications for electricity rates.

Linkages:

Ontario's Fair Hydro Plan – On June 1, 2017, the *Ontario Fair Hydro Plan Act, 2017* became law, reducing electricity bills for residential consumers and as many as half a million small businesses and farms across the province. The OFHP also helps electricity consumers by enhancing a number of electricity support programs. The OFHP initiatives will feature prominently in the province's next LTEP as well as have impacts on the province's energy planning activities for decades.

IESO Market Renewal – The IESO has begun a Market Renewal initiative to redesign the province's wholesale electricity markets. Market Renewal is intended to result in a more competitive marketplace that efficiently meets system needs at the lowest cost and ensures Ontario's climate change commitments are met. It will also help Ontario prepare for the

future by creating a framework that can effectively incorporate new and emerging technologies (e.g., non-GHG emitting generating resources, etc.). In addition, this initiative forms a key component of Ontario's plan to bring down the cost of electricity and is expected to save up to $5.2 billion over a 10-year period starting in 2021. The IESO is working closely with partners in the electricity sector in the development of Market Renewal.

Cap and Trade – The Cap and Trade Program is expected to increase the competitiveness of non-emitting electricity generation and clean imports, as well as more efficient natural gas generation. Cap and Trade also affects the price consumers pay for fossil fuels such as natural gas, gasoline, diesel and propane. Ontario successfully administered its first two quarterly cap and trade auctions on March 22, 2017 and June 6, 2017. All current allowances offered at both auctions were sold along with a portion of the offered future allowances, generating an estimated total of $976 million in proceeds for the Province.

Climate Change Action Plan – Released in summer 2016, the CCAP reiterated the 2016 Budget commitment to greenhouse gas (GHG) emissions reductions and stated that Ontario intends to invest in initiatives that both reduce GHG emissions and ensure that the net impact of cap and trade would not result in an overall increase in electricity costs for commercial and industrial consumers.

Long-term Infrastructure Plan – The Ministry of Infrastructure is developing the Province's Long-Term Infrastructure Plan (LTIP) for release by the end of 2017. As articulated in the Infrastructure for Jobs and Prosperity Act, 2015, at minimum the LTIP is to include a description of the state of the infrastructure wholly or partly owned by the government; a description of the government's anticipated infrastructure requirements, including improvements to existing infrastructure assets and the acquisition of new infrastructure assets, for at least the 10 years following the development of the plan; a strategy to meet the infrastructure requirements; and any other information that the Minister determines should be included in the plan (e.g., commitments to regularly assess and monitor the implementation of the LTIP).

Terms you need to know

- **Global Adjustment (GA) –** Amount that accounts for differences between the market price of electricity and rates paid to regulated and contracted generators and for conservation programs. The GA is collected from all electricity ratepayers in Ontario.
- **Local Distribution Companies (LDCs) –** Local electricity utilities, responsible for distributing power from transmission lines to people's homes (e.g., Toronto Hydro, etc.)
- **Ontario Power Generation (OPG) –** A business corporation owned by the province that owns and operates generation assets, including nuclear and hydro, and generates almost half of Ontario's electricity.
- **Ontario Energy Board (OEB) –** A Crown Agency that independently regulates Ontario's electricity and natural gas sectors in the public interest. Implements an open and transparent process to allow for stakeholders to comment on various items.
- **Independent Electricity System Operator (IESO) –** An independent corporation and agency of the Ministry that operates the electricity market in Ontario. Balances the supply of and demand for electricity in Ontario and then directs its flow across the province's transmission lines, including interties with other jurisdictions.

PROPOSED CABINET MINUTE

CABINET AGREED THAT:

Comment [HT10]: Energy please provide proposed language

1. The Ministry of Energy (ENERGY)…

2. ENERGY work with the Premier's office and Cabinet Office on an integrated communications strategy.

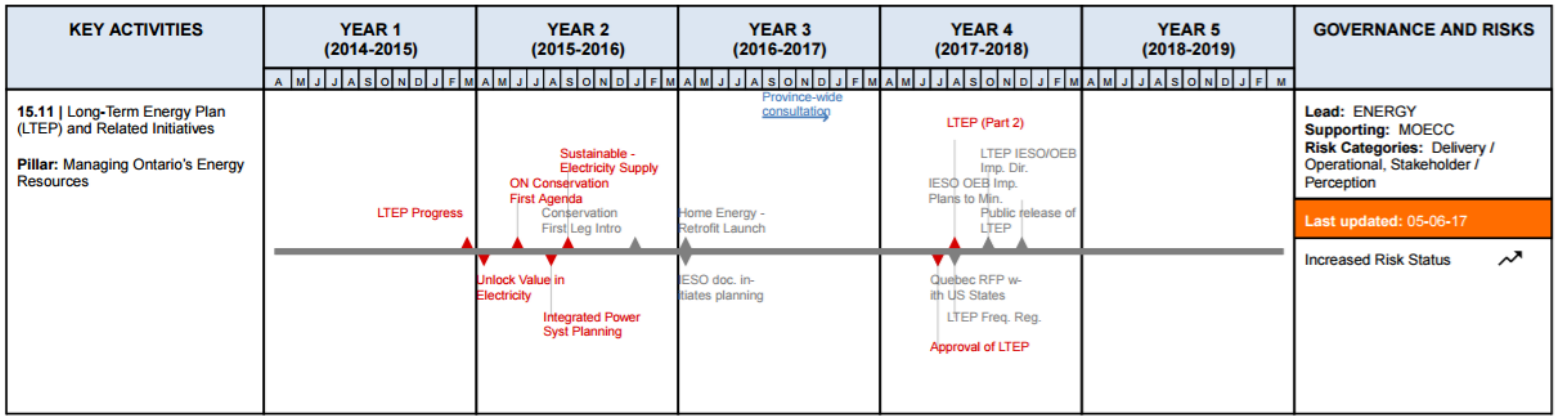
APPENDIX A: Multi-Year Action Plan (15.11 Long-Term Energy Plan and Related Initiatives)

Below is an extract taken from the MYAP which demonstrates the overall strategic plan for the initiative that this policy submission supports. This excerpt represents the approved plan to date, and may not reflect the specific policy and delivery timelines identified in the Cabinet Minute above.

Milestone Legend: → Ongoing Activity ▲ Policy Approval ▲ Delivery Milestone

Key Activity Status Legend: Heightened Management Attention Required; Management Attention Required; Monitoring; Satisfactory

MYAP Slice 2017-08-16



Appendix A: Key Modelling Assumptions

Outlook	Key Assumptions
Electricity Supply	Nuclear – Refurbishment schedule reflects OPG's current business plan and the amended Bruce refurbishment schedule. – Pickering is assumed to operate to 2022/2024. Renewables – Suspension of LRP II and EFW. – FIT 5 and microFIT 2017 are the remaining renewable programs to be procured that are not yet online or contracted. Electricity Trade Agreements – Ontario-Quebec (2.3 TWh per year from 2017 to 2022 inclusive, 500 MW capacity per winter December 2016 to March 2023 from Ontario to Quebec and 500 MW Quebec to Ontario. Discussions with Quebec on an extended agreement not reflected in supply forecast.
Electricity Demand	– Electricity demand based on OPO Outlook B, with the addition of EVs (i.e., 2.4 million EVs by 2035). – Not included in proposed modelling approach, but reflected in FTR Outlook F Targets model and associated GHG reductions: o Public Transit Electrification: Incremental 39,000,000 trips using electrified public transit o Heating and Industrial Electrification: 2,100,000 households upgrade/switch from natural gas to electricity for heating; 80 million square metres of commercial floor space switches from natural gas to electricity for heating; 57 PJ of industrial fossil fuel demand switches to electric equivalent. – Conservation: Reflects 2013 LTEP energy efficiency target of 30 TWh by 2032 and assumes that the near term target set in the Conservation First Framework and Industrial Accelerator Program of 8.7 TWh will be achieved by 2020; and – Demand Response (DR): any DR currently procured through the DR auction would continue to be available in future auctions.
Fuels Demand	– Building Envelope Improvements: o 600,000 single family fossil-fuel heated dwellings improve building envelope to reduce heating load by 20 GJ/year o 255,000 multi-family fossil fuel heated dwellings improve building envelope to reduce heating load by 9 GJ/year o 6% reduction in heating load for fossil-fuel heated commercial

Comment [HT11]: TBC once updated Navigant modelling comes in

Outlook	Key Assumptions
	buildings – Transportation Sector Switching: o Additional 1.3 billion litres of ethanol o Additional 2 billion litres of biodiesel /renewable diesel o Switching from diesel to natural gas / hydrogen / propane, etc. o Additional urban trips on buses (instead of cars) – RNG o 155 PJ of RNG injected into the system – Electrification: Vehicles o Additional 1,400,00 light-duty electric vehicles (EVs) o Additional 30,400 heavy duty EVs – Not included in proposed modelling approach, but reflected in FTR Outlook F Targets model and associated GHG reductions: o Public Transit Electrification: Incremental 39,000,000 trips using electrified public transit o Heating and Industrial Electrification: 2,100,000 households upgrade/switch from natural gas to electricity for heating; 80 million square metres of commercial floor space switches from natural gas to electricity for heating; 57 PJ of industrial fossil fuel demand switches to electric equivalent.
Price	– Reflects changes related to the partial GA refinancing under the OFHP. – Reflects Ontario Power Generation (OPG) smoothed rates. – Assumes the generation assets will continue to be available for the duration of the planning outlook, consistent with the OFHP. – Benefits from implementing IESO's Market Renewal which includes a number of initiatives focused on more efficiently meeting demand; – Natural gas price forecast is based on the Sproule projection of February 2017. – Carbon price is based on the actual floor price for the March 2017 cap and trade auction, inflated at 5% as per the cap and trade regulation and 2% inflationary increase. – Updated transmission rates to reflect current application before the OEB for 2017/2018.