
Long-Term Energy Plan Update

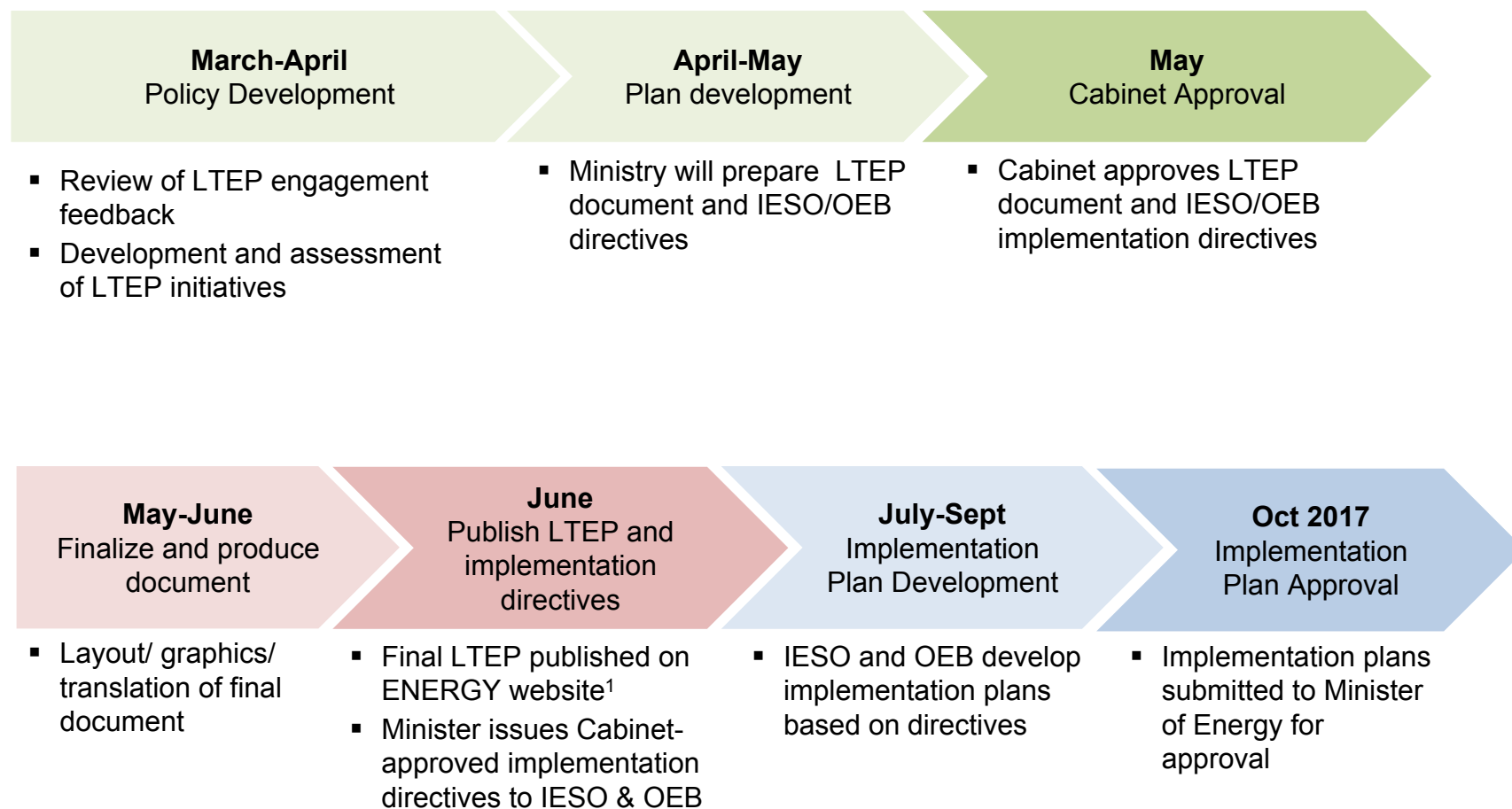
Premier's Office Briefing
April 6, 2017

Purpose

- The Ministry of Energy is continuing to develop the next Long-Term Energy Plan (LTEP). This presentation provides an update on the following:
 1. Process overview and timeline
 2. Review of engagement feedback
 3. Key Updates
 4. Next steps

1. Process Overview and Timeline

1. LTEP Process Overview and Timeline



¹ The final release date is dependent on Cabinet approval and finalization of the production schedule.

2. Review of Engagement Feedback

2. LTEP Engagement Process

- The LTEP engagement process took place from October to January 2017. The process yielded feedback from three channels:



In-person sessions

Stakeholder sessions
Public open houses
Indigenous sessions

17 communities visited
~730 stakeholder attendees
~550 open house attendees
17 Indigenous sessions
~100 Indigenous communities & organizations represented



Written submissions

Environmental Registry
LTEP@ontario.ca
Hardcopies (mail, drop-off)

~1,500 Environmental Registry submissions
~200 letters, emails and paper submissions



Talks Tool

Online survey and comments on an online forum

2,835 online comments and submissions
2,285 users

2. Where we went: General and Indigenous Sessions



2. Who We Heard from

Public	~500 attendees at the 17 public open houses 1,340 submissions from individuals through the environmental registry/mail
Municipalities	57 representatives from 39 different municipalities attended a session 28 submissions through the environmental registry/mail
Indigenous Groups	200 participants from nearly 100 Indigenous communities & organizations 11 submissions through the environmental registry/mail
Other Public Sector <i>NGOs; unions; environmental groups; not-for-profits; academics</i>	71 representatives from 39 different organizations attended a session 110 submissions through the environmental registry/mail
Energy Supply Groups	170 representatives from 51 different organizations attended a session 64 submissions through the environmental registry/mail
Transmission/ Distribution <i>LDCs; transmitters; gas utilities</i>	100 representatives from 45 different organizations attended a session 12 submissions through the environmental registry/mail
Other Private Sector <i>Manufacturers; building; automotive; mining; chemical sectors</i>	136 representatives from 88 different organizations attended a session 96 submissions through the environmental registry/mail

2. What we heard: Supply

Supply covers the fuels consumed for generating energy. Topics include solar, wind, nuclear, hydroelectric, natural gas generation, bioenergy, imports, coal and supply planning process.

Issues Raised

Supply decisions should be technology-neutral

Consider full lifecycle costs of supply options

Acquire more power from neighbouring jurisdictions

Consider economic development in supply decisions

Costs should be the first consideration in supply decisions

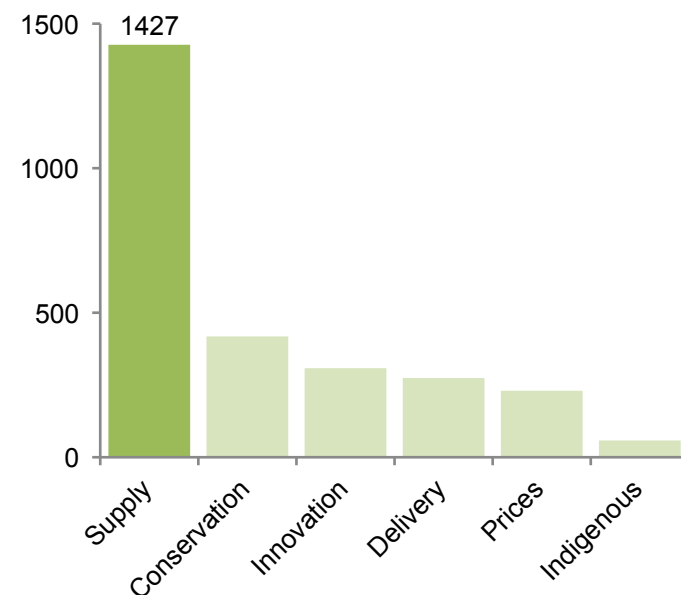
Both support and opposition to nuclear and renewables

Storage technologies can provide flexibility

Distributed generation will present opportunities & challenges

Optimise investments in existing assets

Number of submissions highlighting supply topics



2. What we heard: Prices

Prices include the costs of the energy system. Topics include electricity prices; fuel prices and price mitigation.

Issues Raised

Electricity costs for residents and businesses are too high

Desire from industry for cost-certainty

Consider funding from tax base to reduce electricity rates

Prices are impacting industrial competitiveness;

Delivery charges should be consistent across the province;

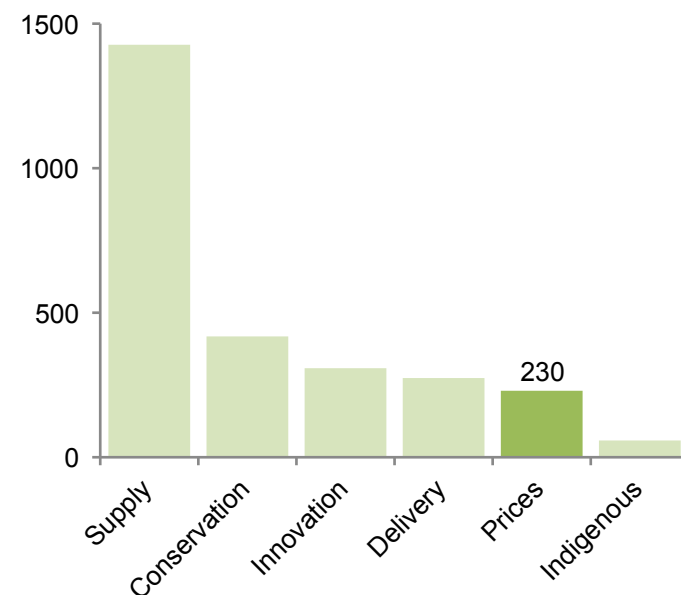
Improve consumer literacy to explain why bills are increasing

Provide different options for time-of-use prices

Promote existing price mitigation programs

LDC customers identifying rising costs as their top issue; challenge for utilities as they account for ~15% of bill.

Number of submissions highlighting price topics



2. What we heard: Conservation & Energy Efficiency

Conservation covers ways to reduce energy consumption. Topics include electricity conservation; natural gas demand-side management, energy efficiency, net-zero homes & building codes.

Issues Raised

Tailor programs to certain customers/regions

Expand conservation programs to include other fuels

Consider energy management technologies and strategies

Promote customer and system benefits of conservation

Increase building efficiency through codes and standards

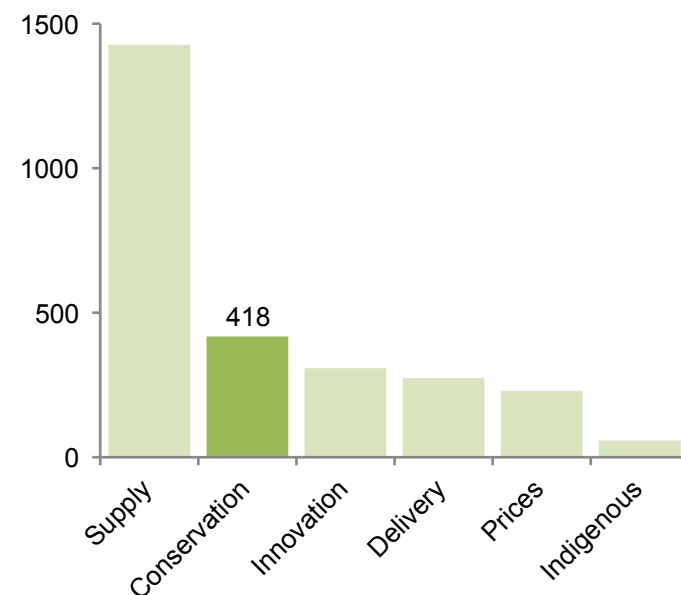
Continue and enhance existing conservation programs

Provide conservation funding to reduce line-losses

Improve communication to increase program awareness

Integrate programs with initiatives announced in CCAP

Number of submissions highlighting conservation & energy efficiency topics



2. What we heard: Innovation

Innovation include changes that will re-shape the energy sector. Topics include distributed energy, alternative fuels, electric vehicles, net metering, smart grid, storage and new business models.

Issues Raised

Changes to regulatory framework can encourage innovation;

Customer will dictate the technologies that emerge.

Continued government support needed for R&D and commercialization of energy technologies

Support the adoption of EVs and their use as batteries for home storage

Support the full range of energy storage applications

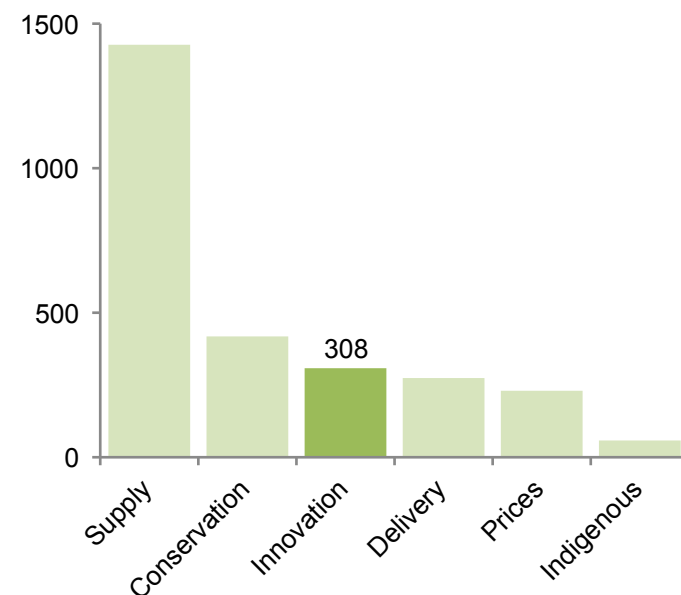
Microgrid technologies can provide benefits to communities across the province, particularly in Northern Ontario.

New business models, partnerships, and methods of knowledge sharing can drive innovation.

Prepare for the impact of distributed energy on the grid

Innovative technologies/fuels may present issues in Northern climates

Number of submissions highlighting innovation topics



2. What we heard: Delivery

Delivery covers the movement of energy. Topics include transmission, distribution, natural gas expansion, pipelines, conventional fuels, regional planning, reliability and grid modernization.

Issues Raised

Optimise investments in existing assets

Improve reliability

Consider economic development in transmission planning

Change rate design to allow for new smart grid projects

Clarify what the delivery charge pays for

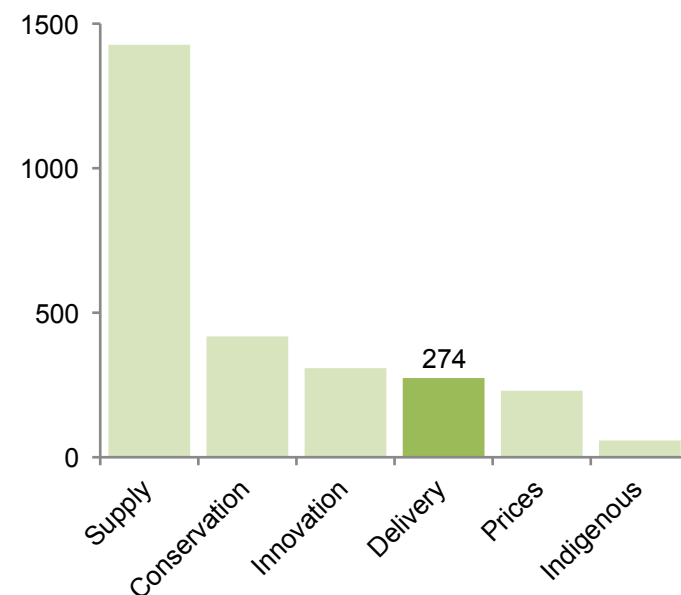
Expand access to natural gas

Provide new opportunities for utilities to raise capital

Consider impact of electrification on grid and fuels systems

Improve regional planning, integrate with community planning

Number of submissions highlighting delivery topics



2. What we heard: Indigenous Sessions

DELIVERY:

Transmission: Need grid investment, for reliability, combat the impacts of climate change and to promote projects to connect remote communities and enable economic development

Local Distribution Companies: Poor customer service, disconnections, trespassing on reserve, lack of equality of LDC-delivered programming.

Reliability: Community economic development hampered by lack of line capacity. Single phase power limiting economic growth and upgrades too expensive.

Pipelines: Continue advocating for the six Ontario pipeline principles in federally-regulated projects and ensure early consultations are undertaken for infrastructure under provincial jurisdiction.

SUPPLY AND INNOVATION:

Local Energy: Net metering, microgrids, local generation and infrastructure ownership to enhance local benefits, control, autonomy and resilience.

Supply: Balance costs, sustainability, employment and economic development opportunities. Overall preference for renewables over nuclear. Concern re: nuclear waste disposal and safety.

Innovation: Support needed for innovative technologies and home grown solutions.

Natural Gas: enable consumer choice and to help reduce home energy costs including electricity.

2. What we heard: Indigenous Sessions Cont'd

PRICES:

Delivery Charge: Eliminate the delivery charge due to unique challenges of people living on reserve and to recognize First Nation contributions.

Electricity Costs: Energy costs are too high; simplify billing and eligibility for payment relief.

CONSERVATION AND ENERGY EFFICIENCY:

Conservation: Conservation programs should continue; better showcase conservation success stories. Some communities were not successful in achieving benefits of conservation due to climate, poor housing, etc.

Housing: Homes often require significant retrofits/renovations to realize conservation benefits and/or readiness for distributed generation opportunities. Holistic solutions needed.

Northern Realities: Better consider the realities of life in the North when developing policies and programs; e.g. instead of electric vehicles, consider efficiency measures for trucks and snow machines.

Climate Change: Interest in environmentally-focused solutions aligning with CCAP, reduction of diesel dependence in northern climates; concern that climate change costs and initiatives will affect way of life on the land (e.g. costs of operating ATV to access trap lines)

2. What we heard: Indigenous Sessions Cont'd

PROGRAMMING:

Capacity Support: Need for continued support for developing local capacity, participation and financing. Need for program continuity.

Energy Planning: Support to implement community energy plans, including capital funds/financing for projects; implementation of conservation and energy efficiency measures, training.

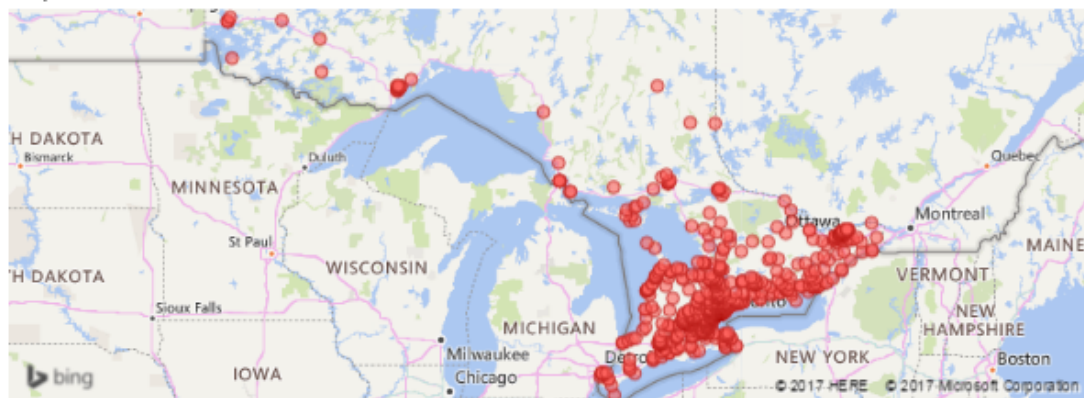
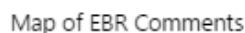
Understanding Energy: Programs to provide better explanation of bill components & energy cost increases.

ENERGY received ~1,500 comments through the Environmental Registry from October 13 to December 16 2016.

Common Topics Mentioned



Comment Volume by Sender



17

3. Key Updates

Context

- The energy sector has witnessed several regulatory, market and technical developments over the past year.
- Accordingly, the twenty-year outlooks described in the two technical reports as well as ongoing policy proposals considered for LTEP will need to be updated to reflect these developments.
- The following slides describe the updates below:
 1. Alignment between LTEP and CCAP;
 2. Range of outcomes;
 3. Ontario's Fair Hydro Plan (OFHP);
 4. LTEP scope for the fuels sector;
 5. Technology-neutral energy planning;
 6. Electricity Conservation Target; and
 7. Customer Choice (Pricing Plans and Net Metering).

1. Alignment Between LTEP and CCAP

Description

- In 2016 Ontario released the Climate Change Action Plan (CCAP) which sets out a series of policy measures to enable the province to meet emission reduction targets.
- As part of the 2017 LTEP process, two technical reports, the Ontario Planning Outlook and the Fuels Technical Report, were released to provide twenty-year outlooks on the electricity and fuels sector in Ontario. The reports also explored the implications of applying the measures outlined in CCAP to provincial energy supply and demand.
- GreenON and other CCAP programs will likely result in electricity savings. ENERGY will need to work with MOECC to ensure that electricity savings achieved through CCAP initiatives (e.g. Green ON) count toward the Province's long-term electricity savings target (e.g. through shared measurement protocols).

Considerations

- ENERGY analysis of the technical reports indicates that significant, fundamental and rapid change would be required for the energy sector to meet the measures described in CCAP, especially for scenarios that shift from natural gas to electric space heating.
- These changes would also substantially increase costs in the energy system and may not be aligned to recent announcements including Ontario's Fair Hydro Plan.

Proposed Approach

- The 2017 LTEP should consider a base case demand scenario with aggressive uptake of electric vehicles (EVs), but modest electrification of space heating.
- ENERGY to continue working with partner ministries to explore other areas for policy alignment.

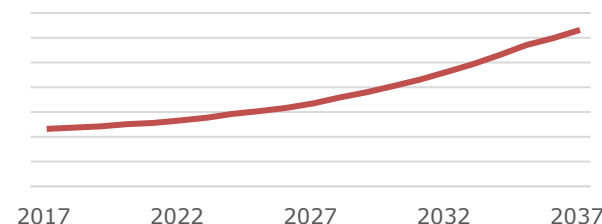
2. Range of Outcomes for Supply and Demand

Description

- Changes in technology, consumer behavior, government policy and climate change targets have combined to create significant uncertainty around future electricity supply and demand.

Illustrative Demand Forecast

Single line planning horizon

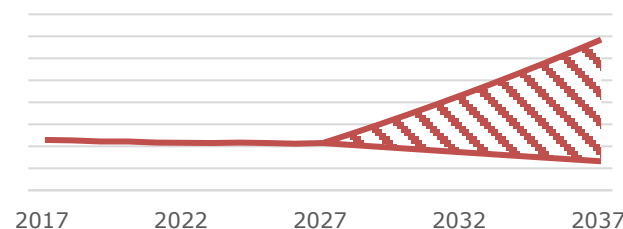


Considerations

- Previous LTEP outlooks have provided single line 20-year forecasts to align with planning horizons and project lifespans (illustrative example of this shown to the right).
- Uncertainty around future supply and demand will need to be reflected in the 2017 LTEP. This can be presented in the outlooks through a variety of means including a range of outcomes or low/high cases.

Illustrative Demand Forecast

Combined single / range planning horizon



Proposed Approach

- Reflective of the uncertainty, the 2017 LTEP could adopt a single scenario for the first half of the 20-year forecast (until 2027), with a range of outcomes for the second half (from 2028-2037) (illustrative example of this is shown to the right).

3. Ontario's Fair Hydro Plan (cont'd)

Description

- Ontario's Fair Hydro Plan (OFHP) would reduce electricity costs for all RPP-eligible customers, including residential consumers, small businesses and farm.

Considerations

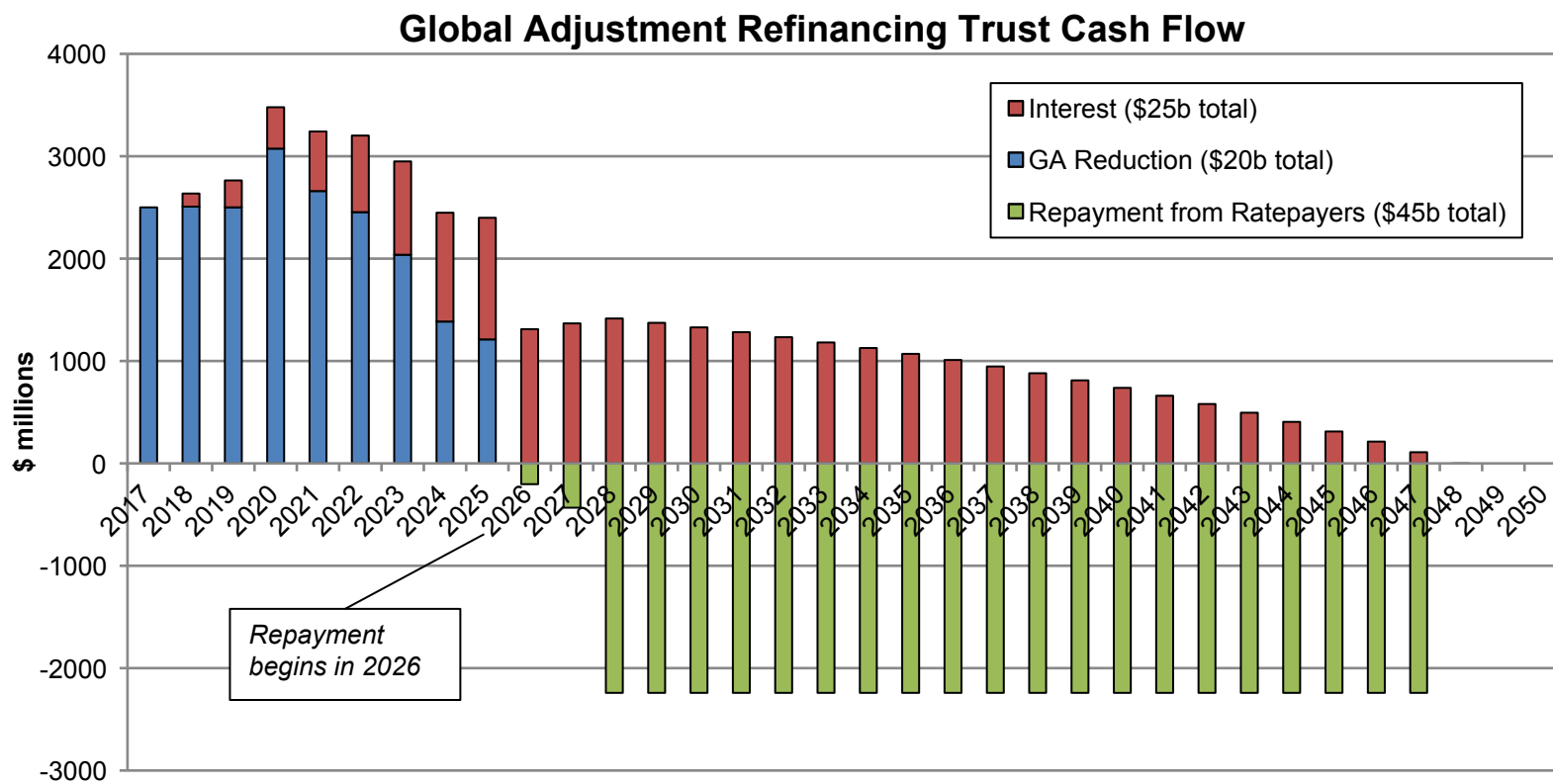
- Measures announced in the OFHP will impact 2017 LTEP outlooks for customer bills, leading to an immediate reduction and medium to long-term pressure in comparison to previous outlooks. It should be noted that there is uncertainty around the long-term cost of OFHP.
- 2017 LTEP modelling will also need to make an assumption regarding the permanence of the funding of electricity support programs from provincial revenues.

Proposed approach

- 2017 LTEP cost outlooks to include all modelling assumptions announced in the OFHP including permanent funding of electricity support programs from provincial revenues. 2017 LTEP outlooks should note there is uncertainty around the long-term cost of OFHP.

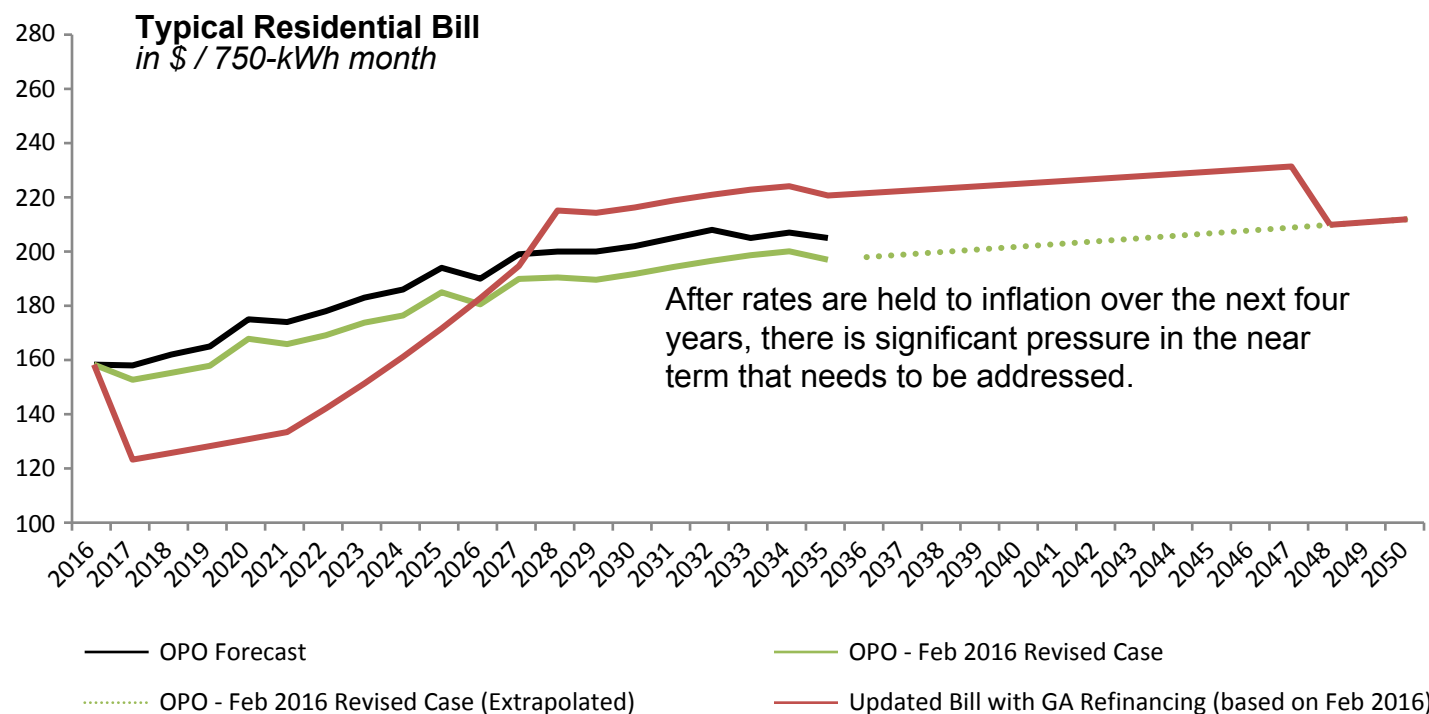
3. Ontario's Fair Hydro Plan

- Under the OFHP, money is borrowed (blue bars) to reduce residential ratepayer Global Adjustment (GA) charges and hence lower residential electricity bills.
- The borrowed money incurs interest (red bars).
- Debt repayment begins in 2026 (green bars), increasing residential ratepayer GA charges until the total debt is paid off in 2047.



3. Ontario's Fair Hydro Plan – Significant Rate Pressure after the Fourth Year (cont'd)

- There is a need to identify measures to bend the cost curve in the near term until Market Renewal savings are realized.



Notes: OPO forecast refers to IESO's November 2016 forecast. GA financing as based on the IESO's revised February 2017 forecast. Assumes 30 year financing period and a nominal interest rate of 5% (compounded monthly). Ratepayer GA payments increase annually beyond 2021 such that the average monthly residential electricity bill increases by 6.5% per year with a limit of \$2.2 billion above the true cost of GA in any given year to cap repayment charges at around 10% of total bill. Includes the cancellation of LRP II and EFW, expansion of ICI. Does not include smoothed OPG rates. Above residential bill is based on a 750 kWh per month Toronto Hydro customer.

4. Scope of Fuels Sector in LTEP

Description

- Ontario will seek to maximize the value of existing infrastructure while reducing greenhouse gas (GHG) emissions through integrated energy solutions. The 2017 LTEP provides an opportunity to highlight these integrated energy solutions.

Considerations

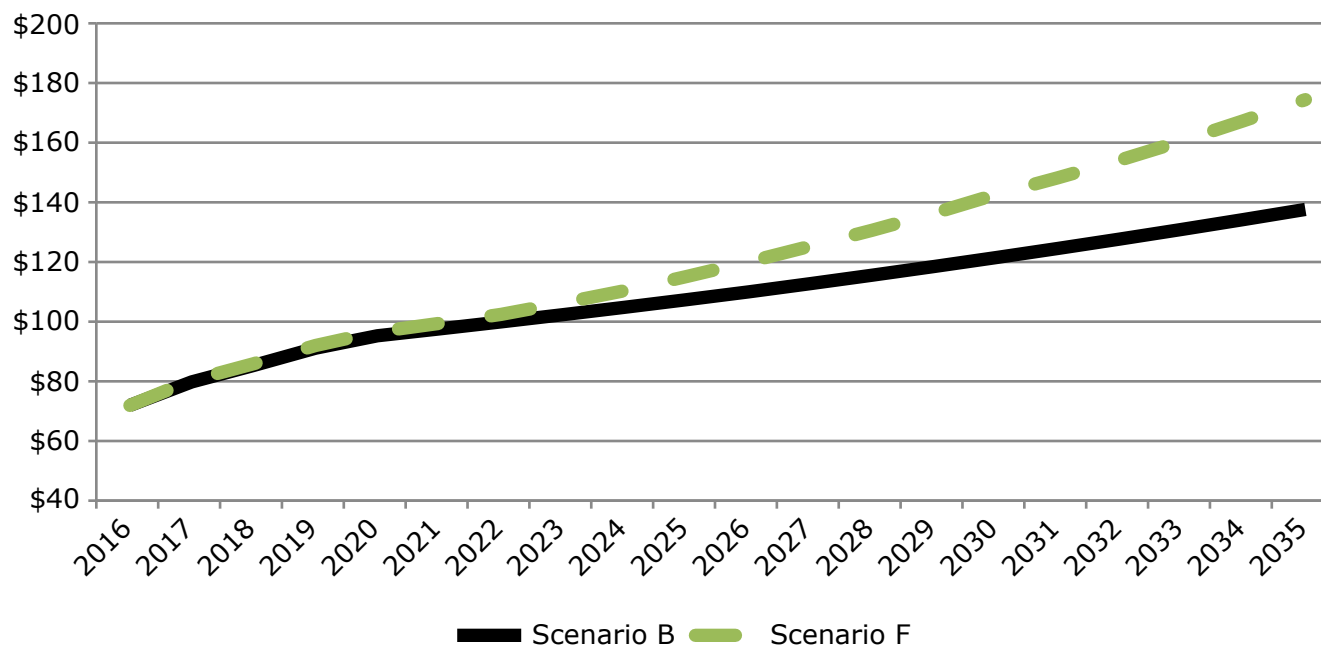
- Technological, economic and policy shifts can have a significant impact on fuels demand and use. A key challenge going forward will be to maintain flexibility, responsiveness, reliability and robustness while minimizing the environmental impacts of fuels consumption.
- While Ontario has regulatory oversight over some aspects of the fuels sector, there is limited ability to influence price. This reflects Ontario's reliance on external fuels supplies and the competitive, market-based structure of the sector.
- Ontario's fuels sector is a major contributor to GHG emissions in the province (e.g., transportation).
- The forecast cost of carbon will have a major impact on forecast fuel prices.

Proposed approach

- 2017 LTEP to include an overview of the fuels sector and discussion of integrated energy solutions (e.g., RNG).
- Include fuels sector outlooks, based on the Fuels Technical Report, comparable to those concerning the electricity sector.
- Include a cost of carbon price outlook reflecting the range of projections from private sector forecasts.
 - **Note:** There is a process in place where the Ministry of the Environment and Climate Change (MOEC) and the Ministry of Finance (MOF), with input from ENERGY, develop a forecast that reflects an average of four projections.

4. Scope of Fuels Sector in LTEP – Forecast for a Typical Residential Natural Gas Consumer (cont'd)

Typical Residential Monthly Natural Gas Bill



Notes: Based on Navigant Fuels Technical Report. Residential bill is based on a 2300 cubic meter annual consumption for an average Ontario customer. In nominal dollars at 2% annual inflation. Includes assumed costs of RNG in Scenario F as well as impact of reduced gas consumption (distribution costs are assumed to be fixed over the forecast period, so lower demand results in higher bills).

5. Technology Neutral Planning

Description

- The province has previously procured capacity by entering into long-term contracts with electricity generators. While this approach has ensured reliability, it has proven to be inflexible to changing electricity system conditions, and has led to price increases.
- Enhancements to the electricity market could result in providing reliability and flexibility in a cost-effective, technology-neutral manner to meet the province's future energy needs.

Considerations

- IESO is leading the Market Renewal project to develop an ambitious set of initiatives which amount to a fundamental redesign of Ontario's electricity markets. Key initiatives in Market Renewal include:
 - Development of new “day-ahead” markets to improve efficiency and transparency;
 - Introduction of a capacity auction to procure supply in a cost effective manner; and
 - Enhancements to intertie scheduling to improve system flexibility.
- ENERGY is also looking at removing regulatory barriers or other constraints that may prevent or restrict some technologies from competing in Ontario's market (e.g., storage).

Proposed approach

- Continue to support IESO in the design and development of Market Renewal and associated measures that improve efficiency, reduce costs and enhance system flexibility.
- ENERGY to identify any regulatory or other barriers currently preventing new technologies from entering Ontario's electricity market.

6. Electricity Conservation Target

Description

- ENERGY is exploring whether to establish a more aggressive long-term electricity conservation target.

Considerations

- There is potential to increase the current 30 TWh target to ~39 TWh. On average, annual program spending would need to increase by three times (from ~\$350 M to ~\$950 M) to achieve the incremental electricity savings.
 - In 2016, the IESO completed an Achievable Potential Study on electricity conservation. Following the study, the IESO developed an addendum which analyzed the potential for electricity conservation under a more aggressive participation scenario (market potential). The addendum concluded that under this scenario an increased target of ~39 TWh could be achieved cost-effectively.
- The IESO APS results are based on the LTEP 2013 demand forecast. The IESO has procured a consultant to update its addendum analysis to reflect a higher demand forecast (consistent with Outlook D of the Ontario Planning Outlook).
- Pursuing incremental electricity conservation savings could result in long-term benefits to the electricity system, but there is limited potential to mitigate system costs in the short term.

Proposed approach

- Potential for cost-effective electricity conservation depends on the demand scenario and ability to manage the impact on rates. Once a demand scenario approach for the 2017 LTEP is finalized, ENERGY will work with IESO to model the incremental conservation identified in the APS.
- Consider using cap and trade proceeds to fund future conservation program.

7. Customer Choice – Pricing Plans-

Description

- The OEB's Regulated Price Place (RPP) Roadmap sets out a five-point plan to redesign the RPP to respond to policy objectives, improve system efficiency, and give consumers greater control.
- One of the major elements of the Roadmap is implementation of pilots for new pricing mechanics and non-price mechanisms.
- The OEB has additionally proposed an interim opt-in RPP flat pricing plan that could be in place as the OEB completes its RPP review and prior to the implementation of new pricing plans.

Considerations

- Research commissioned by the OEB indicated that different customers likely need different pricing design choices in order to respond to time-of-use (TOU).
- The pilots will provide the OEB with the information to design new tools for customers to manage their electricity usage and provide for increased system efficiency.
- The OEB is working closely with pilot applicants and has indicated that two pilot applications are in advanced stages and are being put forward for approval.
- A flat pricing structure does not provide a price signal to conserve; a tiered pricing structure could be considered, where electricity prices increase at a certain consumption threshold.

Proposed approach

- Direct the OEB to report back with an investigation and implementation plan for an enhanced RPP Roadmap which investigates a wider array of pricing plans.

7. Customer Choice – Net Metering

Description

- Ontario's net metering program allows customers to generate electricity from a renewable source for their own use, sending excess generation to the grid for a credit on their bill and drawing electricity from the provincial power grid when needed.
- In February 2017, Ontario amended the net metering regulation (O.Reg. 541/05) to broaden program eligibility and support 2016-2020 CCAP initiatives. Amendments take effect July 2017.
- ENERGY is currently examining potential future amendments to enable TOU pricing for net metered customers, third party ownership and virtual net metering.

Considerations

- These amendments are intended to increase energy choice for consumers, provide opportunities for customers to offset electricity bills, and enable innovative technologies and customer-utility relationships.
- Considerations for enabling TOU pricing, third-party ownership, and virtual net metering include assessing required investments by local distribution companies, and associated ratepayer impacts, ensuring consumer protection and avoiding negative system impacts. **Proposed approach**
- LTEP will highlight the recent amendments to the 2005 Net Metering Regulation (O. Reg. 541/05) that broaden program eligibility, increase choice, and support 2016-2020 CCAP initiatives, including:
 - Clarifying the credit carryover period at a consecutive 12-month period;
 - Allowing any sized renewable energy generation system;
 - Clarifying the eligibility of energy storage when paired with renewable energy;
 - Allowing existing net metering customers to opt-in to the updated program.
- LTEP will also note the ministry's ongoing consideration of potential future net metering opportunities.

5. Next Steps

5. Next Steps

Engagement

- The Ministry is exploring options to publically report-back with a summary of the LTEP engagement process through a web-based mapping application.
- Engagement with Indigenous communities continues. The Ministry of Energy plans to report back to Indigenous communities and organizations on what was heard during the LTEP engagements and to discuss potential policy and program initiatives moving forward.
- As the content for LTEP is developed, the Ministry of Energy will work closely with other ministries both where policy areas overlap, and also to ensure alignment with other government initiatives (e.g. the Climate Change Action Plan, 2017 Budget, etc.)
 - An LTEP ADMs' Forum has been established and will continue to provide ongoing input into the LTEP process.

Development and Approvals

- The Ministry continues to identify and assess policy initiatives to be included in the LTEP. The Ministry will work with the IESO to assess how initiatives impact different outlooks (demand, supply, costs).
- The Ministry will seek Cabinet approval of the LTEP and implementation directives to IESO and OEB in late May 2017 for mid-June publication.

Appendix: Engagement ‘What we Heard’

3. Who we heard from: Transmitter/Distributors

Hydro One:

- **Delivery:** Eliminate regulatory barriers to building and expanding electricity infrastructure by providing flexibility to utilities to manage risks of capital cost recovery. Direct the OEB to explore further opportunities to enhance consumer choice with Hydro One and distributors
- **Innovation:** Provide new regulatory approaches to increase microgrids, community net metering and storage. Allocate Cap and Trade revenues to innovative energy solutions, conservation and EV charging.

Coalition of Large Distributors (CLD)

- **Innovation:** There is interest in opportunities for utilities to pooled innovation funding, both for technologies and for business activities. This enables shared learning.
- **Red Tape:** Explore a framework for regulatory oversight where a business case for a new regulation or regulatory change is published for consideration and consultation.
- **Conservation:** The current programs do not provide an incentive to reduce line losses for the distributor. Implement a regular renewal of the 6 year CDM framework to avoid transition difficulties and to promote long-term projects with associated savings to continue to go forward.

Electricity Distributors Association (EDA):

- **Conservation:** Reaffirm the government's commitment to 'Conservation First', extend and expand conservation programs to include in front of the meter conservation solutions.
- **Prices:** Move costs of the Rural or Remote Rate Program to the tax base. Reduce the regulatory burden imposed by the OEB and allow LDCs to perform the exclusive functions of the Meter Data and Management Repository at a lower cost.
- **Delivery:** Extend incentives and remove barriers to encourage consolidation and partnerships.

3. Who we heard from: Natural Gas Distributors

Enbridge:

- **Supply:** Incentivise fuel switching to compressed and renewable natural gas to reduce emissions.
- **Conservation:** Advocate natural gas demand side management programs as cost effective solutions
- **Innovation:** Just as the Ministry drove significant investment in electricity sector innovation through the Smart Grid Fund, storage procurements, and the IESO's Conservation and Innovation Fund, natural gas utilities require leadership from the Ministry to ensure they can make comparable forward-thinking investments. Propose a \$1/meter per month innovation levy.

Union Gas:

- **Delivery:** Expand natural gas access; combine natural gas for home heating with electrification initiatives to reduce winter peak demand.
- **Prices:** Identify cost impact of CCAP electrification; need to balance affordability and economy with emissions reductions.
- **Supply:** Provide funding for compressed natural gas refueling stations, Provide direction to OEB to require renewable natural gas in supply portfolio of natural gas utilities. Funding from CCAP for renewable natural gas should be split between development and offsetting rate impacts.

Note: Examples represent a selection of ~300 submissions received from organizations. ENERGY can provide full submissions upon request.

3. Who we heard from: Generators

Ontario Power Generation (OPG):

- OPG's submission highlights its commitment to LTEP 2013 goals. Some of its continuing or planned commitments include:
- **Supply:** Refurbish Darlington and make hydro investments to maintain a clean, reliable, and cost effective supply of electricity. Optimize storage at Sir Adam Beck Pump.
- **Innovation:** Continue investing in solar, biomass, microgrids, SMRs, supporting EV's and exporting nuclear expertise.
- **Indigenous:** Create new Indigenous partnerships to support northern electricity demand.

Bruce Power:

- Bruce Power's submission also highlights its commitment to LTEP 2013 goals.
- **Supply:** Supports a balanced supply mix that allows for the continued advancement of renewable technology, along with nuclear to maintain emission-reduction efforts. Supports Darlington refurbishment and life extension at Pickering to 2024.
- **Conservation:** Supports focus on conservation and has launched advanced tools (e.g. the Bruce Power Saver) to help businesses understand and reduce consumption.
- **Innovation:** Supports innovation both within the electricity sector and broader economy (e.g. through initiatives such as NOSM).
- **Prices:** Highlights nuclear generation in delivery of electricity at an affordable price (30% less than average residential price). Highlights collaboration between Bruce Power and OPG to drive value and economies of scale through refurbishment programs.

Note: Examples represent a selection of ~300 submissions received from organizations. ENERGY can provide full submissions upon request.

3. Who we heard from: Associations

Canadian Solar Industries Association (CanSIA):

- **Supply:** Utility-scale renewable generation should be procured via competitive procurements for long-term contracts. Maintain low GHG emissions from electricity. Commit to full transparency on nuclear refurbishment off-ramps and cost thresholds that trigger them.
- **Innovation:** Develop robust net metering regulatory framework that encourages cost efficiencies, customer choice, Time of Use rates, virtual net metering and third-party ownership. Utilize solar thermal technologies to offset natural gas use for space and water heating.
- **Prices:** Modernize electricity rate models to encourage innovation from utilities while protecting individuals & businesses. Work with LDCs, OEB, and solar industry to reduce the cost of solar.

Canadian Wind Energy Association (CanWEA):

- **Supply:** There are few sites for economical, large-scale hydroelectric development and increased imports from Quebec and Manitoba would require transmission expansion - wind energy is the most promising technology to meet increased electricity demand. Competitive procurement for long-term contracts provides the best value for ratepayers to secure low cost wind generation. Close Pickering in 2018 to alleviate costs. Ensure market renewal supports renewable energy. Re-power existing wind generation through competitive re-contracting.

Canadian Fuels Association:

- **Supply:** Consider impacts of renewable fuels and impacts on feedstock. Expand pipeline principles to include an evaluation of ongoing domestic demand for products and safety benefits of pipelines in meeting those demands.
- **Conservation:** Broaden to other fuels: Focus on reducing fuel use from freight transportation; driver behaviour and efficiencies in internal combustion engines.

Note: These examples represent only a small selection of the ~300 submissions received from organizations

3. Who we heard from: Associations

Organization of Canadian Nuclear Industries Association (OCNI):

- **Supply:** The LTEP should prioritize an early start for developing a site (Darlington) for new nuclear generation, given that cost and carbon reductions will remain key drivers. Imports from Quebec and the development of new hydro options are complimentary to, but not a substitute for a continued commitment to nuclear capacity.
- **Innovation:** Ontario's nuclear industry has been a source of innovation and job creation in communities across southern Ontario and has supports Ontario's GDP through both domestic and export value creation.
- **Prices:** Nuclear is Ontario's low cost, non-emitting energy advantage today and in the future.

Ontario Waterpower Association (OWA):

- **Supply:** Expand existing hydroelectric facilities where possible and extend contracts for facilities with expiring contracts; consider operational flexibility of existing facilities; procure more waterpower. Regulatory reform across ministries to reduce the waterpower development timeline from 8 to 5yrs. Sustainability factors (e.g. land use intensity, energy payback) should be incorporated into the assessment of electricity supply options.
- **Delivery:** Include North-South tie as priority transmission project. Assess Ontario's pumped storage potential.
- **Indigenous:** Develop waterpower in proximity to the planned connection of Remote First Nations. Recommend a specific procurement mechanism for Remote First Nations. Include waterpower generation and potential into regional planning initiatives.

3. Who we heard from: Associations

Association of Power Producers of Ontario (APPrO):

- **Supply:** Procurement mechanisms should be transparent and disclosed in advance. Stronger, independent governance over the IESO.
- **Prices:** Minimize long-term electricity prices by maximizing use of existing resources, market effectiveness and competition amongst resource options, conduct independent cost-benefit analysis of all planning commitments, and develop contingency plans in the event additional capacity is required.

Northern Ontario Chambers of Commerce:

- **Prices:** Clarify components of Global Adjustment. Reduce electricity prices; increase details on cap and trade and how proceeds will be spent
- **Delivery:** Electricity infrastructure is key to economic development; new transmission projects with a clear economic benefit to the province should be paid for by all ratepayers; expand access to natural gas and the electricity transmission system

Environmental Defence:

- **Supply:** Re-commit to renewables and support continued development of clean tech sector. Plan to phase out fossil fuels and pledge that any new sources of generation will be non-emitting.
- **Conservation:** Develop conservation targets and pursue conservation before new generation whenever it is cost-effective
- **Prices:** Ensure costing of new generation options includes the social costs produced by greenhouse gas emissions

3. Who we heard from: Consumer Groups

Industrial Gas Users Association (IGUA):

- **Prices:** Use tax-base instead of rate base for funding initiatives with social benefits
- **Delivery:** Maximize the use of existing fuel and electricity infrastructure
- **Innovation:** Commit to becoming a world leader in low carbon heavy industry. Include measures to keep industry competitive during transition to decarbonisation;

Association of Major Power Consumers of Ontario (AMPCO):

- **Prices:** Maintain and expand industrial rate mitigation. Consider shifting initiatives from rate base to tax base; make cost containment the priority of market renewal initiatives
- **Delivery:** Review reliability issues related to the supply mix to reduce impact on industry
- **Supply:** Re-contract with expiring generators at lower rates
- **Conservation:** Continue to support demand response as a resource

Building Owners and Managers Association (BOMA)

- **Supply:** Increase decentralized generation and storage to increase reliability.
- **Prices:** Provide information on Global Adjustment and its various cost elements. Understand impact of different energy prices (electricity vs. gas) when setting GHG reduction targets.
- **Innovation:** Support for Green Button, combined heat & power and energy storage. Expedite approval process for new technologies
- **Conservation:** Provide more performance-based programs for buildings. Make participation in conservation programs easier; add new conservation incentives.

Note: Examples represent a selection of ~300 submissions received from organizations. ENERGY can provide full submissions upon request.

3. Who we heard from: Labour

Power Workers Union (PWU):

- **Delivery:** Invest in transmission and distribution infrastructure to improve reliability and prepare for increased electrification.
- **Supply:** Expand existing and develop new hydroelectric projects. Complete refurbishment of Darlington and Bruce stations. Plan a new nuclear station at Darlington. Proceed with extension of Pickering station beyond 2024. Convert idle coal plants to biomass/gas cogeneration facilities; do not add more solar and wind resources
- **Innovation:** Use the proceeds Cap & Trade Program to promote electrification of the transport, building and industry sectors

Society of Energy Professionals:

- **Delivery:** Invest in transmission and distribution infrastructure to improve reliability and prepare for increased electrification.
- **Supply:** LTEP should reflect the refurbishment of ten units at the Darlington and Bruce Nuclear Stations, ongoing operations at Pickering through 2024 and planning for new nuclear capacity at the Darlington. Continue existing and plan for new biomass and hydroelectric projects

Note: Examples represent a selection of ~300 submissions received from organizations. ENERGY can provide full submissions upon request.

3. Who we heard from: Municipalities

Durham Region

- **Delivery:** Provincial supports for their implementation of community energy plans should be enhanced; Prepare a cost-benefit analysis before of natural gas expansion
- **Supply:** Consider new nuclear generating stations
- **Prices:** Improve transparency of the energy system costs and impacts of rate relief measures
- **Innovation:** Support rural municipalities to enhance their competitiveness and energy resilience through development of distributed and behind-the-meter generation, bio-energy
- **Conservation:** Develop programs that encourage energy efficiency and innovation in new builds. Provide more efficiency and retrofit programs. Support training/education in fields such as net-zero construction, energy audits and demand management.

City of Ottawa

- **Delivery:** Provide funding support and structure to Local Advisory Committees in regional planning process to better understand and initiative cost-effective non-wires solutions; examine regulatory barriers that prevent utilities from providing clean energy solutions
- **Supply:** Procure more renewables in growing regions to contribute to regional & municipal planning process with criteria to ensure there is space on the grid and community ownership
- **Conservation:** Include all forms of energy. Make energy consumption reporting mandatory in public & private sector buildings. Allow LDCs to offer more energy solutions. Proceed with CCAP 'Near Net Zero Carbon Home' incentive. Provide capacity-building to municipalities for energy literacy and efficiency.
- **Innovation:** Require a rate-class specific for EV charging stations

3. Who we heard from: Municipalities

City of London

- **Prices:** Concern with rising electricity prices. LTEP should communicate that electricity prices are not expected to rise as a result of CCAP.
- **Conservation:** Partner with municipalities to provide energy literacy programs to homeowners and businesses. Broaden programs to include other fuels beyond natural gas. Encourage the province to place a greater emphasis on raising energy literacy for both homeowners and businesses
- **Delivery:** Allow utilities to provide new services (e.g., EV charging, compressed natural gas stations);
- **Supply:** LTEP should take a holistic view and consider electricity and fuels.

Bruce County/ Kincardine/Brockton/Owen Sound/Saugeen Shores

- **Supply:** Support for the nuclear industry and continued refurbishment of Bruce Nuclear Station
- **Delivery:** Support for the expansion of natural gas to rural parts of Southern Ontario.

Note: Examples represent a selection of ~300 submissions received from organizations. ENERGY can provide full submissions upon request.

3. Who we heard from: Municipalities

Federation of Northern Ontario Municipalities and Northwestern Ontario Municipal Association:

- **Prices:** Clarify components of Global Adjustment. Reduce electricity prices; increase details on cap and trade and how proceeds will be spent.
- **Delivery:** Electricity infrastructure is key to economic development. New transmission projects with a clear economic benefit to the province should be paid for by all ratepayers. Expand access to natural gas and the electricity transmission system

Eastern Ontario Wardens Caucus

- **Delivery:** Invest in natural gas and transmission and distribution infrastructure to improve reliability and support economic development
- **Prices:** Investigate high electricity prices and the global adjustment. Consider ratepayer impacts before investing in green energy
- **Supply:** Increase hydroelectric portfolio. Engage municipalities in the planning process for large infrastructure.

Note: Examples represent a selection of ~300 submissions received from organizations. ENERGY can provide full submissions upon request.

3. Who we heard from: Indigenous Communities and Organizations

Animbiigoo Zaagi'igan Anishinaabek First Nation:

- **Delivery:** Expressed intent to develop a new transmission line to Greenstone, in partnership with other First Nation communities, to address poor reliability in the Greenstone-Marathon area and future load growth to enable economic development opportunities. Desire to have the Greenstone line identified as a priority project and to have the 'user pay' principle reconsidered for this project.
- **Supply:** Interest in continued renewable energy development opportunities for First Nations including Little Jackfish hydro-electric project and other hydro-electric, wind and solar projects.

Nishnawbe Aski Nation (NAN):

- **Delivery:** First Nation ownership of transmission and distribution assets; support for grid-connection of remote First Nations and request for updated timeline for connection; interest in the acquisition of Hydro One assets in Northern Ontario.
- **Supply:** Continued opportunities for First Nation ownership in generation projects. Greater role of NAN and NAN First Nations in the development of new energy projects in their territories. Renewable energy projects and remote community connection project should be viewed as complementary.
- **Conservation and Programming:** Disparity of conservation programming across LDCs; adequate support needed for Independent Power Authorities including support to prepare for grid connection and access to conservation and energy efficiency programming. Communities need support to implement community energy plans. NAN and NAN-represented communities should have greater involvement in the development of programming.

3. Who we heard from: Indigenous Communities and Organizations

Canadian Council for Aboriginal Business:

- **Supply:** Support for Bruce Power and its enhanced contracting process that supports Indigenous-owned businesses.

Wataynikaneyap Power:

- **Delivery:** Ontario should continue to encourage federal government to develop a responsible funding framework for the remote connection project.
- **Programming:** Continue to support Indigenous communities develop and finance projects and build capacity. Support through CCAP should be directed to help remote First Nations become 'transmission ready'.

Historic Saugeen Métis:

- **Supply:** Support for nuclear and Bruce Power's continued operation and highlights jobs and economic benefits to Métis people.

3. Who we heard from: Indigenous Communities and Organizations

Grand Council Treaty 3:

- **Innovation:** Support for the development of microgrid projects for First Nations, lack of capacity to maintain the systems and the high development costs are barriers.
- **Supply:** Support for continued renewable energy opportunities to support economic development of First Nations, renewable energy helps combat climate change. Support the reduction of diesel use for remote First Nations. Renewable energy and conservation are complementary. Access to natural gas to help with electricity costs.
- **Prices:** Delivery charges too high, current OESP program not adequate.
- **Conservation:** Conservation initiatives should result in tangible savings for communities; need for more programming to support improved infrastructure and housing retrofits in communities.
- **Programming:** Continue to support Indigenous communities develop and finance projects and build capacity. Support through CCAP should be directed to help remote First Nations become 'transmission ready'.