

Standing Committee on Public Accounts: 2015 Auditor General Report

DRAFT Key Messages and Q&As

KEY ISSUES

1. **The report says the province has wasted billions of dollars on renewable procurements and paying above market prices for electricity (Global Adjustment)**
 - Ontario has paid \$37B above the market price for electricity over eight years and will spend \$133B by 2032
 - Ontario spent \$9.2B more in renewables under the current procurement program than it would have under previous programs
2. **The report alleges the long-term planning process has broken down**
 - The OPA's technical plans were ignored by the government, who made decisions without conducting proper cost/benefit analyses, with a lack of transparency and limited OEB oversight
3. **The report is critical of conservation, alleging:**
 - It contributes to surplus baseload generation and increases costs to ratepayers
 - Peak demand reduction targets have been too ambitious and have not been met
 - Many conservation initiatives are not cost-effective while others have not been evaluated for cost-effectiveness
4. **The report identifies transmission capacity and reliability issues**
 - Problems first identified in the OPA's 2007 IPSP have not yet been addressed, specifically in the Kitchener-Waterloo-Cambridge-Guelph, Windsor-Essex, and Greater Toronto Area West regions
 - Over 2,500 microFIT projects had to be relocated after receiving conditional offers from the OPA due to transmission capacity constraints
 - Constrained-on/off payments to generators have been increasing
5. **The report notes several instances where the IESO/OPA provided advice that was disregarded by the government to the detriment of the ratepayer**
 - In 2009, the OPA recommended the government use a competitive procurement for large renewable projects
 - In 2010, the OPA expressed concern that estimated costs at Lower Mattagami were \$1B over its initial estimate

- The OPA warned that conversion of Thunder Bay to biomass was not cost-effective

KEY MESSAGES

Conservation

- Conservation is one of the least expensive and cleanest options to meet our electricity needs. It's a key component to an integrated energy plan for Ontario.
- Over the long term, conservation can be used to avoid investments in potentially more expensive infrastructure (e.g. transmission, distribution and supply).
- Conservation benefits both customers and the provincial power system. Through saveONenergy programs, consumers are able to take control of their energy use and reduce both their current and future energy costs. On a power system level, every dollar invested in conservation saves about two dollars in avoided generation.
- The IESO is establishing a culture of conservation, building conservation capability in the marketplace for the times when it is needed the most.
- The IESO evaluates the success of its conservation programs by looking at the performance of the entire portfolio. This approach takes into consideration the fact that some programs are pilot projects intended to garner learnings that can be applied to future programs, while other programs are intended to realise broader benefits, such as assisting low-income households.

Reliability

- As Ontario's Reliability Coordinator, the IESO oversees the implementation and enforcement of reliability standards in Ontario. An audit by the North American Electric Reliability Corporation cited the IESO as a model for system operators, while a peer review showed that its practices in enforcing reliability are exemplary.
- The IESO's planning process includes consideration of how major initiatives would impact transmission. The IESO and Hydro One work together frequently to ensure that Ontario's electricity system will have adequate transmission capacity in the years to come.
- The IESO determines what is required to support future electricity demand growth through the development of Integrated Regional Resource Plans (IRRP). The plans are developed with input from local distribution companies, municipalities, community groups, stakeholders and the general public. The regional planning process is governed by the Ontario Energy Board and is a continual process, evaluated every five years, with plans developed for a 20-year outlook.

- Transmission upgrades in the Kitchener-Waterloo-Cambridge-Guelph area are underway. Most of the facilities are already in operation and the project is expected to be fully in-service by Summer 2017.

IESO Role in Government Decision-Making

- The IESO, and Ontario Power Authority before it, have had a substantial role in Ontario's long-term planning process. This involves working with the Ministry of Energy on a regular basis, providing data, analysis, and advice that informs the government's decision-making.
- Following the passing of Bill 135, the IESO is now responsible for submitting a technical report to the Minister of Energy that provides planning context for policy makers and industry stakeholders and serves as an early input into the government's LTEP consultation process.
- The IESO's role as an advisor to the Ministry of Energy is limited to electricity sector considerations. The IESO's recommendations may not always align with broader policy objectives.
- The IESO, along with the OEB, will also be responsible for an LTEP implementation plan following its release.

Ontario Planning Outlook

- The IESO submitted the Ontario Planning Outlook on September 1 and has been supporting the government's Long-Term Energy Plan public consultations.
- Ontario's supply mix has undergone a fairly dramatic transformation over the past decade, from the elimination of coal to the procurement of more natural gas and large amounts of wind and solar.
- Over the same period, demand declined as a result of the recession and conservation efforts.
- Long-term outlooks indicate that Ontario will remain adequately supplied into the foreseeable future if demand remains at or below today's level.
- We see accelerating change over the decades ahead. For the IESO, one of the most critical priorities will be to ensure continued reliability given the large number of moving parts. These include the following:
 - The continued expansion of renewables
 - Nuclear refurbishments at Darlington and Bruce
 - Growing consumer engagement and behavioural changes
 - Continued growth of embedded resources
 - New market mechanisms intended to spur increased competition
 - The Climate Change Action Plan
- Additional resources would be required to meet higher demand outlooks driven by electrification of end-uses in support of climate change actions.

- In the meantime, system needs will be based primarily on operational and regional considerations.

Q&As

1. Has the planning process broken down?

The IESO, and Ontario Power Authority (OPA) before it, have had a substantial role in Ontario's long-term planning process. This involves working with the Ministry of Energy on a regular basis, providing data, analysis, and advice that informs the government's decision-making. The IESO also consults and works alongside others in the industry — such as Hydro One, the Ontario Energy Board, local distribution companies and stakeholders — to inform its own decision-making, analysis and advice to government.

The former IESO and OPA were engaged in the development of the government's 2013 Long-Term Energy Plan. In addition to contributing to the government's planning process, the IESO plans for the mid- and long-term through its 18 Month Outlook report and regional planning process. The IESO invites municipalities, community groups, stakeholders and the general public to provide input into the development of their region's long-term electricity plan. Information about the IESO's planning is available online.

Since the release of the AG's report, a new planning process has been enacted in which the IESO submits a technical planning document to inform the government's long-term plans. The IESO submitted this document, the Ontario Planning Outlook, on September 1.

2. Did Ontario pay \$9.2B (AG) / \$5.3B (IESO) more for renewables under the Feed-in-Tariff Program than it would have under the previous renewable procurement program?

It is difficult to determine with any certainty the potential savings that may have been achieved had Ontario kept its previous renewable procurement programs and did not initiate the Feed-in-Tariff program. There are a number of assumptions, uncertainties and inherent inaccuracies that factor into any calculation. Predicting the outcome of competitive processes, for example, requires assumptions to be made about program participant's behaviour. Approximation is also required when assessing future technology costs or project development costs.

The FIT program was also designed to procure renewables on a much greater scale than the previous programs. It is unknown whether the uptake would have been the same had the previous program been maintained and, as such, it is uninformative to assume an equal uptake and compare spending based on those assumptions.

3. Why is only 80% of capacity available to meet peak demand (and 70% by 2032)?

There are a number of reasons why not all of Ontario's capacity is available at peak demand. For example, Ontario, like other jurisdictions, must account for scheduled and unscheduled outages at any given moment. The provincial power grid is built and operated under the assumption that there will never be 100% of capacity available.

In addition, not all facilities have fuel available to maximize their output. For example, wind and solar facilities produce energy depending on how strong the wind blows and how bright the sun shines. While their output is variable, these facilities act as baseload supply, meeting core energy demand needs. These generators are, however, highly flexible and can change output very quickly in response to system signals.

4. Did the Ontario Power Authority suggest the Ministry implement a competitive process for renewable procurement as opposed to a standard offer program?

Yes, the OPA's preference was to utilize a competitive process. However, the recommendation was made within the confines of its mandate and did not necessarily take into account other government policy considerations, like environmental, economic development, and other social policy considerations. Ontario's renewable procurements have been very successful at helping to transition the province's electricity supply to a more diverse and environmentally-friendly mix of resources.

5. Did the OPA warn the Ministry that the Lower Mattagami project was going to be \$1B over budget?

The Auditor General's report is based on a preliminary estimate of the cost of Lower Mattagami. The final budget more accurately reflected the estimated costs of the project, and the project ended up coming in under budget.

6. Does the Lower Mattagami project provide value?

The Lower Mattagami project provides capacity and energy that contributes to meeting Ontario's electricity demands. In February 2010, the Minister of Energy issued to the former OPA a letter which acknowledged the estimated costs of the project, confirmed the project's consistency with government priorities and instructed the former OPA to proceed with commercial negotiations surrounding the project.

7. The report says that the Thunder Bay biomass facility costs \$1600/MWh, about 25x higher than the average cost of Ontario biomass. Does the Thunder Bay biomass facility provide value?

The Thunder Bay biomass facility provides capacity and energy that contributes to meeting Ontario's electricity demands. The former OPA did not recommend converting the coal plant at Thunder Bay into a biomass facility. The Ministry of Energy directed the OPA to enter into the

contract with OPG to convert Thunder Bay in light of its consistency with government priorities.

8. Does conservation during periods of surplus generation contribute to expensive electricity curtailments and exports, as the report claims?

The IESO is establishing a culture of conservation, building conservation capability in the marketplace for the times when it is needed the most. Although Ontario currently has adequate supply, a need is expected to emerge in the mid-2020's, depending on a number of uncertainties, like electrification and the economy. This shortfall, would happen sooner and be even greater without expected conservation and energy efficiency savings.

Conservation through energy efficiency is always a good value proposition for customers across all sectors. Investing in conservation also provides value for Ontario's ratepayers as every \$1 invested in conservation saves \$2 in avoided generation costs.

9. Why were 18 of 37 conservation programs found not to be cost-effective?

The IESO evaluates the success of its conservation programs by looking at the performance of the entire portfolio. The portfolio includes a combination of programs with varying degrees of cost effectiveness, from less cost effective low income programs to the highly cost effective business programs. The bulk of the savings generated from the portfolio, 75%, come from highly cost-effective programs. This approach reflects the need to serve all customer types, and takes into consideration the fact that some programs are pilot projects intended to garner learnings that can be applied to future programs, while other programs are intended to realise broader benefits, such as assisting low-income households.

10. Why did the IESO only evaluate some of its conservation spending? Why has \$758M, or 36%, not been subject to third party evaluation?

Between 2006 and 2014, Ontario has spent about \$2.1 billion on conservation initiatives, of which about \$1.3 billion were evaluated by an independent third-party for cost effectiveness.. The remaining \$750 million spent on conservation initiatives has not been subject to a formal third-party cost effectiveness evaluation but was assessed internally for operational performance, savings achievement and budget compliance.

To ensure optimal use of ratepayer funds the remaining initiatives were deemed mature and predictable, were subject to previous reviews, or considered too new or too small, to warrant a dedicated third-party evaluation process.

11. Why did the IESO's cost-effectiveness evaluation only include costs that had been paid up to the time of evaluation?

The IESO's cost-effectiveness framework ensures that there is a 1 to 1 relationship between the electricity savings generated by the portfolio and the costs associated with acquiring those savings. The cost-effectiveness evaluations are done on an annual basis and reflect a snapshot in time. All costs associated with the savings generated by the portfolio and to administer the portfolio are captured, including future costs associated the savings that have been accrued but not yet disbursed.

12. Why is the IESO failing to meet its peak demand reduction targets?

Ontario has reduced peak demand significantly since 2005, achieving an estimated peak demand reduction of 3,619 MW by the end of 2014. To put this into perspective, provincial peak demand was 22,774 MW in 2014. Reducing peak demand eases the burden on the provincial power grid as fewer resources are needed to keep the lights on, including less generation and transmission capacity. This results in savings for Ontario's ratepayers.

While the 2010-2015 Conservation Framework included demand reduction targets, the new 2016-2020 Framework only included energy targets. Peak demand targets are now part of the province's demand response targets, which are met through programs like the Industrial Conservation Initiative.

13. The Ministry estimates that extending IEI to 2024 from 2020 will cost an additional \$300M. Is there value to extending the IEI program?

The government's objectives with the IEI program extends beyond electricity system considerations. The program was designed to achieve a number of potential benefits that are outside of the IESO's expertise, such as economic and employment benefits.

14. Recommendation #4 suggests the Ministry work with the IESO to assess the effects of conservation and its impact on electricity costs during times of surplus generation. Does the IESO already do this?

The IESO already evaluates the cost-effectiveness of its conservation programs and includes expected conservation savings in its supply and demand forecasts. The IESO is establishing a culture of conservation, building conservation capability in the marketplace for the times when it is needed the most. Although Ontario currently has adequate supply, a need is expected to emerge in the mid-2020's, depending on a number of uncertainties, like electrification and the economy. This shortfall, would happen sooner and be even greater without expected conservation and energy efficiency savings.

15. Did the IESO lose \$3.1B exporting energy from 2009 to 2014?

It is incorrect to say that Ontario loses money when it exports power. In fact, Ontario benefits financially from exports and they contribute to maintaining a reliable system. Exporting electricity allows the IESO to bring in revenue that helps reduce fixed system costs that would

need to be paid regardless. They help reduce Global Adjustment for Ontario consumers, and also lower ratepayer costs through market uplifts, transmission rights and the export transmission tariff.

Electricity trade is a normal part of any jurisdiction's electricity market. The IESO also imports electricity when it is economic to do so.

16. Did the IESO pay exporters \$32.6M from 2009 to 2014 to take excess power? Why?

Negative prices are a normal occurrence, based on market conditions, and occur from time to time in electricity markets around the world.

It is incorrect to assume that exports are sold below the cost to generate electricity in Ontario when prices are negative. Some suppliers are willing to pay to generate power and submit negative offers into the market when costs would be incurred by reducing output or shutting down their facility.

Exporting electricity allows the IESO to bring in revenue that helps reduce fixed system costs that would need to be paid regardless. They help reduce Global Adjustment for Ontario consumers, and also lower ratepayer costs through market uplifts, transmission rights and the export transmission tariff.

17. Are there capacity and reliability issues in the Kitchener-Waterloo-Cambridge-Guelph and Windsor-Essex regions? Will these areas be able to meet peak demand in the coming years?

As an outcome of the regional planning processes undertaken in these two regions, capacity and reliability issues have been identified and are currently being addressed. Following the implementation of the following two projects, these areas will be able to meet projected growth in peak demand for the coming years:

- Transmission upgrades in the Kitchener-Waterloo-Cambridge-Guelph area are underway. Most of the facilities are already in operation and the project is expected to be fully in-service by Summer 2017.
- Transmission reinforcements in the Windsor-Essex region (collectively referred to as "SECTR"), are under construction and expected to come into service in 2018.

18. Recommendation #5 suggests the Ministry work with the IESO to perform adequate system planning and analysis prior to undertaking any major initiatives that would impact transmission. Does the IESO already do this?

The IESO's planning process already includes consideration of how major initiatives would impact transmission. The IESO works with the Ministry and other industry partners and participants (transmitters, distributors, customers, etc) to ensure that Ontario's electricity system will have adequate transmission capacity in the years to come.

Transmission constraints are a normal occurrence in any electricity jurisdiction and can happen for a number of reasons, including security or physical limits such as thermal capacity of a transmission line, a need to maintain voltage and stability, or the need to be prepared for unexpected failures of generation or transmission facilities. Generators are constrained only when required; Ontario's electricity market schedules the lowest cost resources when possible.

19. What is CMSC and why is it increasing?

Congestion Management Settlement Credits (CMSC) are used to restore market participants to the operating profit they would have received in the absence of Ontario constraints. Constraints are a normal occurrence in any electricity jurisdiction and can happen for a number of reasons, including security or physical limits such as thermal capacity of a transmission line, a need to maintain voltage and stability, or the need to be prepared for unexpected failures of generation or transmission facilities.

Ontario's electricity system has undergone significant changes in the past decade, from the retirement of coal-fired generating facilities to the integration of large amounts of renewable resources and changing electricity demand. This has contributed to an increase in constraints and, subsequently, CMSC payments.

The IESO is currently working with stakeholders through the Market Renewal project to design and implement fundamental and enduring changes to Ontario's electricity market, that would include the elimination of CMSC payments. The Market Renewal project includes a variety of initiatives that are collectively expected to increase the efficiency of the electricity market, prepare us to manage future change, and allow IESO to adopt best practices from other jurisdictions and incorporate lessons learned here in Ontario.

20. Recommendation #5 suggests the Ministry work with the IESO to investigate causes of the increasing volume of generator constraints, thereby minimizing any unnecessary costs to consumers. Does the IESO agree with this recommendation?

Generator constraints are a normal occurrence in any electricity jurisdiction and can happen for a number of reasons, including security or physical limits such as thermal capacity of a transmission line, a need to maintain voltage and stability, or the need to be prepared for unexpected failures of generation or transmission facilities. Generators are constrained only when required; Ontario's electricity market schedules the lowest cost resources when possible.

The IESO seeks ways to improve the efficiency of the electricity market on a regular basis. For example, last September, the IESO made changes to the Market Rules to limit constrained-off payments at Ontario's interties. The IESO is also considering changes to its two-schedule settlement system which may eliminate the need for congestion management settlement credits, which are payments to restore market participants to the operating profit they would have received in the absence of Ontario constraints. On the planning and procurement side, the IESO has restricted the awarding of contracts in areas with forecast congestion issues, thereby reducing the rate at which generation would be constrained.

The IESO is currently working with stakeholders through the Market Renewal project to design and implement fundamental and enduring changes to Ontario's electricity market. The Market Renewal project includes a variety of initiatives that are collectively expected to increase the efficiency of the electricity market, prepare us to manage future change, and allow IESO to adopt best practices from other jurisdictions and incorporate lessons learned here in Ontario.

21. Recommendation #5 suggests the Ministry work with the IESO, Hydro One and LDCs to address current capacity and reliability issues and identify what is required to support future electricity demand growth. Does the IESO agree with this recommendation?

As a result of coordinated regional planning process between the IESO, local distribution companies, and the local transmitter (Hydro One), the anticipated capacity and reliability issues identified in the report are currently being addressed:

- Transmission upgrades in the Kitchener-Waterloo-Cambridge-Guelph area are underway. Most of the facilities are already in operation and the project is expected to be fully in-service by Summer 2017.
- In the Windsor-Essex region, transmission reinforcements are under construction and expected to come into service in 2018.

In addition to these two areas, detailed regional plans have been completed for 10 other regions in the province to ensure long term capacity and reliability needs are addressed.

A formalized and coordinated regional planning process is the primary mechanism used to determine what is required to support future electricity demand growth. Through the development of the Integrated Regional Resource Plan (IRRP), the IESO invites municipalities, community groups, stakeholders and the general public to provide input into the development of their region's electricity plan. The IRRP compares relevant resource options to meet local electricity needs, such as conservation and demand management, distributed generation, large-scale generation, transmission and distribution. The plan ranks options by feasibility, cost, reliability, environmental performance and societal acceptance. The regional planning process is governed by the Ontario Energy Board and is a continual process, evaluated every five years, with plans developed for a 20-year outlook.

22. Is it true that 2,545 microFIT projects could not proceed because there wasn't enough transmission capacity? Did it cost \$239M (AG) / \$126M (IESO) to have microFIT projects re-apply under the FIT program because of a lack of transmission capacity?

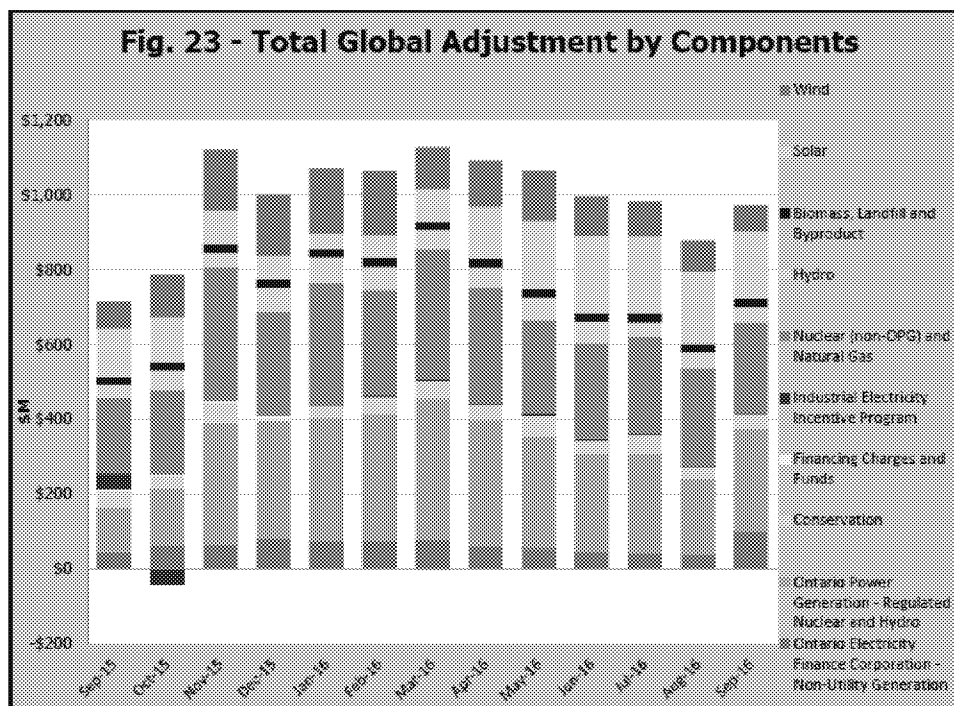
There was a very positive response to the microFIT program, resulting in over 11,000 applications. As with any electricity jurisdiction, Ontario's transmission facilities have specific technical operating limits which must be respected to ensure safety and prevent damage to equipment. In the case of the microFIT program, the ability to connect new generation was limited in some parts of the province to keep short circuit levels beneath a safe operating threshold. In order to facilitate participation in the FIT and microFIT programs, the Ontario Power Authority was directed to allow applicants to relocate their projects to a location where they would be able to obtain a connection.

23. What is the Global Adjustment and why is it costing Ontario over \$37B to date?

The Global Adjustment (GA) covers many of the fixed costs for providing both adequate generating capacity and conservation programs for Ontario. The GA is calculated based on the difference between the Hourly Ontario Electricity Price (HOEP) and:

- Regulated rates to Ontario Power Generation nuclear and baseload hydroelectric generating stations
- Contracts with the IESO, such as new gas-fired facilities, renewable facilities, and nuclear refurbishments, which cover the fixed costs of building these facilities
- Contracted rates administered by the Ontario Electricity Financial Corporation paid to existing generators.

All jurisdictions must recover the fixed costs of generation and conservation programs. Each jurisdiction has its own mechanism; the Global Adjustment is Ontario's.



24. Is the IESO involved in government decision-making (ex. directives, renewable procurements)?

The IESO meets regularly with the Ministry of Energy. This involves providing briefings on a regular basis and providing data and analysis to inform government decision-making. The IESO also engages and works alongside others in the industry—such as Hydro One, the Ontario Energy Board, generators, consumers, aboriginal groups, and local distribution companies—to inform its own decision-making, analysis and advice to government.

25. What's the value of the ICI program?

The Industrial Conservation Initiative (ICI) provides a strong incentive for large electricity consumers to shift their electricity consumption to off-peak hours to reduce their bills. By reducing the province's peak demand, ICI has the added benefit of deferring the need to build peaking generation. Under ICI, these consumers are charged Global Adjustment on the basis of their share of the total system demand during the highest five peak hours of the year. There are now about 300 participating consumers who collectively reduced Ontario's peak demand by an estimated 1,000 MW in 2015.

Expanding participation in the ICI program will:

- Reduce cost pressures on the electricity system by empowering more consumers to lower their electricity demand during peak periods; and
- Reduce electricity bills for new ICI participants who are able to reduce their electricity demand during peak demand periods.

Newly eligible customers would have the opportunity to opt-in to the ICI program.

26. Why did the IESO believe that cap and trade costs should appear as a separate line item on customer bills?

The IESO's initial thoughts, which were outlined in its submission to the OEB, were that it would be more accurate to associate GHG-related costs with commodity costs as opposed to distribution costs. The IESO also thought it might be best to show these costs as a separate line item to provide an additional price signal to consumers, beyond the price signal the overall cost of the bill provides. The OEB heard from many stakeholders and decided to take a different path, and the IESO respects its decision.

27. There are a number of NUG contracts expiring in the coming years. Will the IESO be renewing these contracts?

The IESO released a report in September 2015 that assessed opportunities for NUGs to compete in meeting anticipated system needs. Our recommendation at the time was to continue the current pause in the re-contracting of NUGs because of our adequate supply situation. We have since developed the Ontario Planning Outlook, which was released on September of this year and similarly concluded that Ontario will continue to benefit from adequate supply in the near-term. This assessment was made under the assumption that NUG contracts would not be renewed. Therefore, the IESO continues to recommend no further extension of NUG contracts.

The IESO is in the process of working on fundamental market design changes, including the implementation of capacity auctions to competitively procure future system needs. The IESO recommends that NUGs compete with other resources at that time to meet system needs.

28. At what point in the refurbishment of Bruce Power's nuclear units will the IESO decide that the cost is too high to proceed? When will the IESO execute its off-ramps?

When each off-ramp occurs, the IESO will consider whether changes to supply and demand have resulted in there no longer being a need to refurbish the remaining units or whether there are more economic electricity supply alternatives.

If pressed: The specific cost-threshold, which is only one component to the decision-making regarding off-ramps, is confidential.

Background fact:

- Initial price for Bruce Power's generation set at \$65.73/MWh starting January 1, 2016. The average price over the life of the contract is estimated to be \$77/MWh, or 7.7 cents per kilowatt hour (kWh).

29. Did the IESO consider conservation as an alternative to extending Pickering?

The IESO recently completed an Achievable Potential study that looked at the savings potential of economically feasible conservation measures based on predicted adoption rates. The study found that the achievable potential for conservation in Ontario is consistent with the targets set out in LTEP 2013.

Additional conservation would require greater incentive and therefore be less cost-efficient.

30. How much could Ontario save from cancelling LRP I?

The capacity from LRP I will be needed to meet Ontario's future demand. If LRP were to be cancelled, the capacity would have to be replaced beginning in the early-mid 2020s time frame. The overall cost impact would depend on the replacement supply.

In addition, there would be costs associated with cancelling the contracts as they have already been executed.

For these reasons, the IESO has not considered or done any analysis on cancelling the contracts.

31. Why doesn't the IESO rely more on conservation?

The IESO recently completed an Achievable Potential study that looked at what's possible for conservation in the province. The study concluded that our potential for conservation is consistent with the targets set in LTEP 2013; so we're already working to achieve conservation reductions that are close to the maximum of what's likely possible within current incentive levels.

The IESO's 2015-2020 Conservation First Framework set an ambitious conservation target of 8.7 TWh of electricity consumption by December, 2020 – 1.7 TWh to be achieved through conservation projects with transmission-connected customers and 7 TWh from conservation programs delivered by LDCs.

There is also a mid-term review in 2017 for the CFF, which will give us another opportunity to assess our progress towards the targets we've set and to understand potential for improvement.

**Achievable Potential: The savings potential of economically feasible measures based on predicted adoption rates. Adoption rates factor in historic experience of conservation participation and the degree to which conservation is incentivized.*

Additional Timely Topics

1. Market Surveillance Report and GCG Issue

See separate key messages and Q&A document.

2. IESO “Accounting Error”

ISSUE: On October 25, it was reported that the IESO noted a “previously unrecognized actuarial loss and past service costs” of just over \$80 million.

KEY MESSAGES

- This has been in our publicly issued audited financial statements ever since the change and therefore part of our ongoing annual review by the OEB.
- The figure is a function of change in accounting rules from commercial Generally Accepted Accounting Principles (GAAP) to Canadian Public Sector Accounting Standards determined to be more relevant to the IESO.
- This item was always part of our balance sheet under GAAP, the former accounting principles. The difference in moving to the new accounting principles is that we were required to separate it out and show it separately in our statements.
- The IESO’s fees have been reduced over the period. Our fee dropped from 0.137 cents per kilowatt hour in 2010 to 0.124 cents per kilowatt hour in 2015. Our latest rate proposal, if approved by the Ontario Energy Board, would see a further reduction to 0.113 cents per kilowatt (or approximately one-tenth of one cent per kilowatt hour).

BACKGROUND:

Effective January 1, 2011, the IESO adopted Canadian public sector accounting standards with a transition date of January 1, 2010. The adoption of PSAB was accounted for by retroactive application with restatement of prior periods subject to the requirements in Section PS 2125, *First-time Adoption by Government Organizations*. The corresponding change to pension and other-post employment benefits resulted in previously unrecognized actuarial losses and past service costs of \$80,617 thousand at the date of transition being charged to the accumulated deficit.

The IESO includes a portion of the accumulated deficit resulting from the PSAB transition items in the annual proposed expenditures to the OEB for recovery through system fees.

3. Windstream NAFTA Decision

ISSUE: In 2013, Windstream Energy LLC (“Windstream”) filed a NAFTA Chapter 11 arbitration claim against Canada alleging that certain measures adopted by the Government of Ontario were inconsistent with Canada’s NAFTA obligations and that Windstream suffered substantial damages relating to its proposed offshore wind energy facility under the FIT Program as a result of such measures.

On September 30, 2016, the Tribunal provided Canada with a copy of its unanimous decision. Although Canada was successful on three of the four claims advanced by Windstream, the 3-member Tribunal found that Canada breached Article 1105 and awarded Windstream over \$25M in damages plus 50% of their legal and other costs in the amount of \$2.9M. Canada and Windstream are to bear their own arbitration costs in the amount of approximately CAD \$600K each. Article 1105 guarantees the customary international law minimum standard of treatment for the investments of US and Mexican investors in Canada.

While the imposition of the moratorium did not in and of itself constitute a breach of the obligation to give fair and equitable treatment to Windstream’s investment under Article 1105, the Tribunal concluded that the failure of the Ontario government to take the necessary measures to bring clarity to the regulatory uncertainty affecting Windstream’s project (including, when necessary, by way of directing the OPA) within a reasonable period of time after the imposition of the moratorium, did. The Tribunal did not find any wrongdoing on the part of the OPA.

KEY MESSAGES:

- Windstream Wolfe Island Shoals Inc. (“WWIS”) has a FIT contract for the development of a 300 MW offshore wind project in Lake Ontario. The outcome of Windstream’s arbitration claim does not change the status of its contract with the IESO.
- Windstream’s contract is currently in force majeure. Events of force majeure provide temporary relief of contractual obligations when unforeseeable events beyond the supplier’s reasonable control occur.
- The IESO is unable to comment on to the specifics of Windstream’s or any other entity’s FIT contract, as that information is considered to be confidential.
- Ontario is well-positioned to meet the province’s energy needs until the mid-2020s, as identified in the IESO’s Ontario Planning Outlook.

Q&As:

1. What is the current status of the Windstream contract?

WWIS has a version 1.3 FIT contract for the development of a 300 MW offshore wind project in Lake Ontario. The contract is currently in force majeure.

2. What is force majeure?

Under the FIT contract, either party may rely on the force majeure provisions, which provide relief to a party when an unforeseen act, event, cause or condition that is beyond a party's reasonable control prevents that party from performing certain of its contractual obligations. Whether a force majeure has occurred and how long the force majeure remains in effect depends on the specific facts of the situation.

3. How long has the Windstream contract been in force majeure?

Pursuant to the terms of its FIT contract, in December 2010, WWIS submitted a notice of force majeure in connection with a force majeure event that commenced on November 22, 2010.

4. When was the Windstream project supposed to reach commercial operation?

The Milestone Commercial Operation Date for Windstream's project was five years following its contract date (i.e. May 4, 2015).

5. Why hasn't the IESO terminated Windstream's FIT contract?

The IESO is unable to comment on to the specifics of Windstream's or any other entity's FIT contract, as that information is considered to be confidential.

6. When will the IESO terminate Windstream's FIT contract?

The IESO is unable to comment on to the specifics of Windstream's or any other entity's FIT contract, as that information is considered to be confidential.

7. What does the IESO plan to do about Windstream's FIT contract?

The IESO is unable to comment on to the specifics of Windstream's or any other entity's FIT contract, as that information is considered to be confidential.

8. Why didn't the OPA agree to the alternative projects that were proposed by Windstream?

The FIT program is a standard offer program. Applicants who meet the program requirements are offered a standard contract pursuant to the applicable FIT rules. The IESO adheres to and administers the FIT program in accordance with the applicable FIT rules. The IESO is unable to comment on to the specifics of Windstream's or any other entity's FIT contract, as that information is considered to be confidential.

9. How long can a contract remain in a force majeure status before it is terminated?

The IESO has the right to terminate version 1.3 FIT contracts if, by reason of one or more events of force majeure, the commercial operation date is delayed for an aggregate of more than 24 months after the contractual Milestone Commercial Operation Date—the date when a project is expected to achieve commercial operation. There are also instances where a mutually agreed upon termination can occur.

10. What will happen with the 300 MW of capacity associated with Windstream's project if its FIT Contract is terminated?

The IESO will continue to meet the requirements outlined in the directions issued by the Minister of Energy.

As identified in the IESO's Ontario Planning Outlook, Ontario is well-positioned to meet the province's energy needs until the mid-2020s. The Ontario Planning Outlook will help inform the Ministry of Energy's Long-Term Energy Plan (LTEP), with LTEP consultations scheduled to begin in fall 2016.

11. Why isn't Ontario moving forward on offshore wind power development?

On February 11, 2011, Ontario announced that it would not proceed with proposed offshore wind projects while further scientific research is conducted. As this is a policy decision of the Ontario government, any policy questions should be directed to the Ministry of Energy, Ministry of Environment and Climate Change, or Ministry of Natural Resources and Forestry, as appropriate.

12. What other contracts or applications do you have for offshore wind projects? What happened to them?

Prior to the February 2011 announcement of the moratorium on offshore wind development, the OPA had received a total of four applications for offshore wind projects under the FIT program, one of which was in respect of the WWIS project. All four of these applications were submitted during the FIT launch period between October 1, 2009 and November 30, 2009. WWIS was the only offshore wind applicant to be offered a contract.

4. Ontario-Québec Electricity Trade Agreement

Issue: An announcement was made after the joint Ontario-Quebec cabinet meeting on October 21, 2016, that the IESO and Ontario and Quebec have agreed on the principal terms for an electricity trade agreement running to 2023 and involving three bundled components: energy, capacity and cycling.

Key Messages

General

- The IESO and Hydro Québec have agreed to principal terms for an electricity trade agreement that extends to 2023 and includes three components: energy, capacity and cycling.
- This agreement will take advantage of the complementary nature of both provinces electricity systems without requiring additional investments in infrastructure.
- Building on the *Seasonal Capacity Sharing Agreement*, the provinces will continue to exchange capacity during their respective peak periods.
- Ontario will receive two terawatt hours of clean energy annually that will be targeted to displace GHG-emitting resources, helping to reduce emissions by about one MT per year.
- Ontario will better manage surplus energy by cycling it from Ontario to Québec so that it can be returned during high demand periods, which will also displace production from greenhouse gas emitting resources.
- Discussions are ongoing between the IESO and Hydro-Québec to complete the final agreement by December 1, 2016. Any details beyond the agreement on principal terms remain to be worked out by the two parties.
- The Ontario-Québec electricity trade agreement is expected to fulfill the intent of the Memorandum of Understanding signed in September 2015.
- Ontario already imports and exports electricity to and from Québec on a daily basis through Ontario's electricity market. Imports compete with domestic generation, with the lowest cost resources available scheduled to meet demand, while exports help reduce fixed system costs that would otherwise need to be paid for by Ontario's ratepayers.

The Agreement on Principal Terms

- The agreement builds on the *Seasonal Capacity Sharing Agreement* between Ontario and Quebec that began in December 2015. Under the proposed terms, Ontario will continue to supply Québec with 500 MW of capacity each winter from December to March until 2023. The 500 MW of winter capacity supplied by IESO over 2015/16 will be returned by Hydro-Québec during a summer period prior to 2030.

- Hydro-Québec will provide fixed volumes of energy to Ontario of about two terawatt hours for seven years, from January 1, 2016 to December 31, 2023. This energy will be targeted to displace greenhouse gas emitting resources.
- The IESO and Hydro-Québec agree to cycle surplus energy from Ontario to Québec so that it can be returned to displace future production from greenhouse gas emitting resources during high demand periods, when electricity is usually higher priced.

Q&As

1. What financial compensation will Ontario and/or Québec receive? How much is Ontario paying for the energy?

As this is a commercial agreement between the IESO and Hydro-Québec, the IESO is unable to reveal any specific payment details.

2. Can you quantify the cost savings for Ontario's ratepayers?

The amount of savings for Ontario's ratepayers is subject to the terms of the final agreement and to the dynamics of the electricity market. However, preliminary estimates conclude that this agreement could save Ontario's ratepayers up to \$70M over the seven year term of the agreement.

3. Can you quantify the expected emissions reductions in Ontario?

The amount of emissions saved is subject to the terms of the final agreement and to the dynamics of the electricity market. However, preliminary estimates conclude that Ontario could reduce GHG emissions by up to 1 MT per year over the seven year term of the agreement.

4. The OPO said the province is in a strong supply situation and the government recently cancelled LRP II. Why sign an agreement for more energy and capacity?

The energy Ontario receives will be targeted to displace greenhouse gas emitting resources that are typically used during high demand periods, when electricity is typically higher priced. This is expected to reduce emissions and result in cost savings for Ontario's ratepayers.

5. Won't Ontario still have to pay for the generation facilities that are being displaced, only for them to sit idle?

Facilities that have contracts with the IESO will receive payments to help them recover fixed costs, as they would have in any case, but they will not receive payment through the market if they are not scheduled.

6. What are the emitting resources that Ontario is displacing with the energy from Quebec?

The energy from Québec will be used when it is cost-effective and when it will reduce emissions. This will typically involve displacing natural gas-fired generation that is used during higher demand periods.

7. It has been suggested that imports from Québec should be used as an alternative to refurbishing nuclear units. Does this agreement allow for that possibility?

This agreement is not about replacing nuclear. The energy Ontario receives will be targeted to displace greenhouse gas emitting resources that are typically used during high demand periods, when electricity is typically higher priced. This will reduce emissions and result in cost savings for Ontario's ratepayers.

8. If energy from Québec is clean and can lower costs for Ontario's ratepayers, why doesn't Ontario agree to import more?

This agreement takes advantage of the complementary nature of both provinces electricity systems without requiring additional investment. Flexibility over Ontario's interties is critical for maintaining reliability and any agreement that involved larger quantities of energy or capacity could require billions of dollars in additional infrastructure investments.

9. Will there be any transmission investments required to facilitate this agreement?

No. Imports and exports will flow through the Ontario electricity market, like all imports and exports, and will be scheduled only if they meet reliability requirements.

10. How much surplus energy does Ontario have?

Ontario doesn't always have surplus energy and when it does the amount varies depending on circumstances.

11. Why does Ontario have surplus energy?

As with all jurisdictions, the electricity system must be built to reliably manage peak demand periods. This means that during times of lower demand there can be surplus energy. This is a normal periodic occurrence in electricity systems all over the world and depends on day-to-day demand.

12. What is the benefit of the capacity component of the agreement?

Ontario is typically a summer-peaking province, and capacity is built to meet summer peaks under extreme weather conditions. That means that at other times of the year there is spare capacity available, such as in the winter. Quebec happens to be winter peaking largely because they use more electricity for heating than Ontario, which relies more on natural gas in the winter.

13. How is this agreement different from the previous capacity swap agreement?

The previous agreement was for a seasonal capacity exchange during the years 2015 to 2020. Under the proposed terms, Ontario will now supply Québec with 500 MW of capacity each winter from December to March until 2023. Hydro-Québec, in return for the 500 MW of winter capacity supplied by IESO over 2015/16, commits to returning 500 MW of summer capacity to IESO before September 30, 2030.

In addition to the capacity component of this agreement, Hydro-Québec will provide fixed volumes of energy to Ontario of about two terawatt hours for seven years, from January 1, 2016 to December 31, 2023. This energy will be targeted to displace greenhouse gas emitting resources.

The IESO and Hydro-Québec agree to cycle surplus energy from Ontario to Québec so that it can be returned to displace future production from greenhouse gas emitting resources during high demand periods, when electricity is usually higher priced.

14. Does this agreement replace the previous capacity swap agreement?

Yes.

15. What is cycling?

Cycling is when energy is stored during off-peak periods and used during on-peak periods, typically for reasons of price arbitrage but, in this case, to reduce emissions as well.

16. Does this agreement make Ontario's electricity system more reliable?

Ontario does not require this agreement to improve the reliability of the electricity system as it is already reliable, and that wasn't an objective in reaching the agreement on principal terms.

The objectives were:

- To reduce GHG emissions in Ontario
- To provide savings for Ontario ratepayers
- To complement other electricity wholesale market and policy initiatives.

17. Does this agreement complement other electricity wholesale market and policy initiatives as per one of the three objectives of the 2015 MOU?

Yes. This agreement is consistent with the goal of Ontario's cap and trade program and ongoing conservation and demand management programs.

5. LRP II Suspension

Key Messages

- Further to the Minister of Energy's September 27, 2016, direction announcing the government's intention to suspend the Large Renewable Procurement (LRP), the IESO cancelled the LRP II RFQ process and will not be commencing the subsequent LRP II RFP process.
- The IESO notified the 55 applicants who submitted Requests for Qualification in response to the September 8, 2016, RFQ deadline.
- As identified in the Ontario Planning Outlook, released on September 1, 2016, Ontario is well-positioned to meet provincial needs until the mid-2020s in four demand scenarios. This decision will not impact that assessment.
- There is time to wait and see how the electricity system evolves and make decisions if and when a need arises.

Q&As

- 1. The government's media release indicates the suspension of LRP II will result in a savings of up to \$3.8 billion in costs against the 2013 LTEP. How will this change the IESO's cost outlook (as characterized in the Ontario Planning Outlook)?**

- The Ontario Planning Outlook considered a range of demand and cost outlooks. This decision will have the effect of reducing and/or deferring future electricity system costs.
- As identified in the Ontario Planning Outlook, released on September 1, 2016, Ontario is well-positioned to meet provincial needs until the mid-2020s in four demand scenarios. This decision will not impact that conclusion.

If Pressed:

- The figure used by the government, \$3.8 billion, is the NPV cost savings between 2017-2040. Annually, it would be about \$285 million dollars per year relative to the 2013 LTEP.
2. **Generally speaking, how does the current Ontario Planning Outlook cost projection (or outlook) compare to the 2013 LTEP?**
 - The Ontario Planning Outlook looks at a range of demand scenarios, and as such a range of cost outlooks were provided. The total cost of electricity service over the planning outlook will be a function of demand growth, the cost of operating the existing system and the investments required in new resources to meet potential needs.
 - In the flat demand outlook ("Outlook B"), the total cost of electricity service would average approximately \$21 billion per year (2016\$) over the next 10 years and is estimated to decrease to approximately \$19 billion per year by 2035 (Figure 19).
 - In higher demand outlooks, additional investments in new resources (conservation, generation and transmission) would be required to meet the increase in demand. However, this would be associated with an increase in energy consumption in the province. As a result, the average unit cost of electricity service would be within the range of the flat demand outlook.
 3. **The government's news release says not moving forward with LRP II will save the typical residential electricity consumer an average of approximately \$2.45 per month on their electricity bill. What does it mean for industrial customers?**
 - The removal of LRP II will result in a reduction in the industrial rate of about \$1.10/MWh on average over the LTEP period from that forecasted in LTEP 2013 (Fig 8, Pg 18).
 4. **What is the IESO doing to control the system costs?**
 - The IESO remains committed to planning and operating a reliable power system in the most cost-effective way.
 - The report provides the planning context for policy makers and industry stakeholders and serves as an early input into the government's Long-Term Energy Plan (LTEP) development process. As the planning outlook illustrates, there are enough resources to meet demand until the mid-2020s.
 - As a result of Ontario's strong supply situation, IESO has increased its focus on moving towards competitive capacity procurement models, price bid-down tools and other efficiencies.

- Prices for the IESO-administered Feed-in Tariff solar projects were recently reduced between 23 and 30 percent from 2015 prices, and 50 to 75 percent from the 2009 prices when the FIT and microFIT programs were first introduced.
- FIT 4 also included a bid-down price option, where applicants could earn points for offering in a price lower than the price schedule offers.
- The LRP I was a competitive process for procuring large renewable energy projects, wherein only project proposals that were economical below the price caps would be considered for a contract.
- The DR auction provides a competitive platform for a wide range of demand response resources, allowing more commercial and industrial customers to participate with greater flexibility in response to changing conditions on the power system.
- Building on the DR auction, the IESO is considering the development of a capacity auction. In the future resources may need to compete through capacity auctions to ensure best value for ratepayers.
- The IESO is currently undertaking a cost-benefit analysis for a market renewal initiative, which will address known market inefficiencies and is expected to improve cost-effectiveness.