Ontario

MINISTRY OF
ENERGY

Proposed Initiatives to Transform Ontario's Electricity Sector

Working Draft

November 2016

CONFIDENTIAL DRAFT

Context

- Electricity costs are increasing as the necessary investments are made to decarbonize and modernize the province's electricity infrastructure.
  - Since 2003, the Province has invested more than $35 billion in over 16,000 megawatts (MW) of new and refurbished cleaner generation, including nuclear, natural gas and renewables.
  - Over the same period, Hydro One has invested $15.5 billion to enhance and renew its transmission and distribution systems.
  - As additional electricity generation comes online, nuclear units are refurbished and distribution and transmission investments are made, prices are forecast to continue to increase.

- Actions have been taken to drive down electricity costs, including deferring investments in generation (e.g., new build nuclear), improving market efficiency (e.g., introduction of wind dispatch) and decreasing the cost of renewable procurements (e.g., GEIA renegotiation, decreasing FIT prices).

- Additional steps have be taken to increase cost effectiveness and improve efficiency by adopting new electricity market approaches, such as:
  - Enhancing competition between developers of large renewable projects through the Large Renewable Procurement (LRP) process to drive down price and secure clean, reliable generation for the province;
  - Directing IESO to end the process of negotiating new NUG contracts pending the development of a Capacity Auction (i.e., Market Renewal); and
  - Launching the first IESO Demand Response Auction (i.e., a competitive process through which demand-side resources are selected to be available to reduce their electricity consumption as needed).

Context (Cont'd)

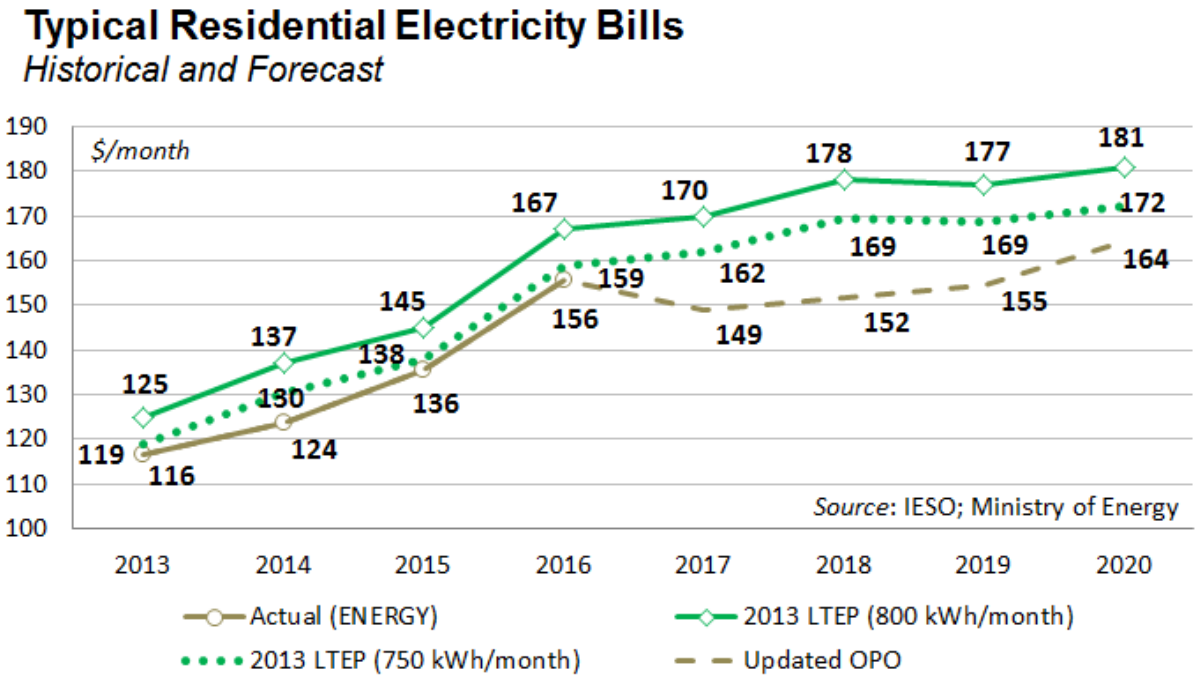
- Following the 2016 Throne Speech, a number of actions were announced to further reduce electricity costs, such as:
  - Providing an 8 per cent rebate, equivalent to the provincial portion of HST, for approximately 5 million eligible electricity consumers including residences, small businesses and farms;
  - Increasing the amount of rate protection available to approximately 330,000 eligible rural customers living in low-density areas by updating the Rural or Remote Rate Protection (RRRP) program;
  - Lowering the Industrial Conservation Initiative (ICI) threshold to 1 MW and removing sector restrictions so that more consumers can benefit;
  - Suspending the second round of the Large Renewable Procurement (LRP II); and
  - Recycling a portion of cap and trade auction proceeds to keep rates affordable for industrial and commercial electricity consumers.

- On November 28, 2016, the Minister of Energy announced the need for changes in how electricity resources are procured and the need for wholesale market renewal.

- The Ministry of Energy is currently updating its Long-Term Energy Plan (LTEP), which provides an opportunity to consider a range of policy changes to how the Ontario energy sector operates.

Historical and Forecast Electricity Prices – Residential

- Actual typical residential bills have been tracking below 2013 LTEP projections. Among other factors, the 8% rebate will ensure that bills continue to come in below the projections made in 2013.

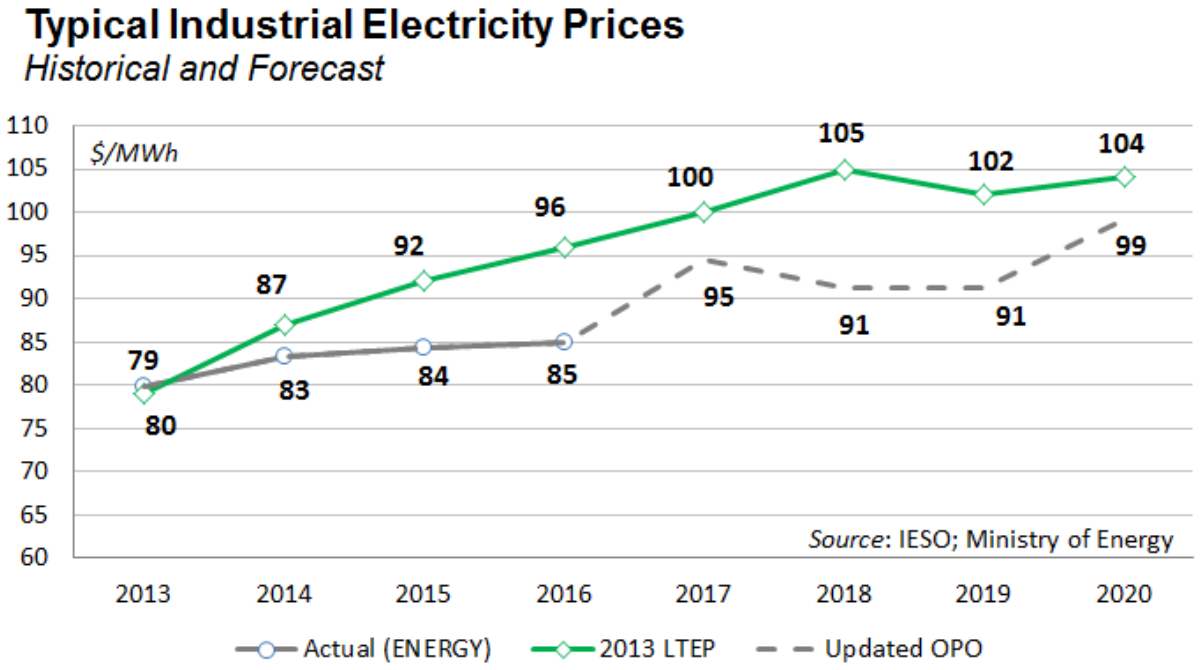


Note: "Updated OPO" reflects an IESO estimate of costs that includes the elimination of the LRP II and EFW procurements. There are no changes made for the latest Hydro Quebec agreement. The draft nature of IESO's LRP II and EFW case run will have implications on the information attached.

Note: Price projections in 2013 LTEP reflect 800 kWh/month usage. Since the release of 2013 LTEP, the OEB adopted 750 kWh/month usage as the new standard. ENERGY staff have estimated what 2013 LTEP projections would have been had they been done on a 750 kWh/month basis.

Historical and Forecast Electricity Prices – Industrial

- Similarly, actual typical industrial prices have been tracking below 2013 LTEP forecasts. Current expectations are that this trend will continue.



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Proposed Initiatives – Overview

- The suite of proposed initiatives are intended to:
  - Transform how the electricity market operates in Ontario;
  - Re-set how government programs are funded (i.e., rate-base vs tax-base); and
  - Provide system benefits (e.g., industrial load retention)
  - Lower the cost of electricity for residential and industrial consumers.
  - Increase cost effectiveness and improve efficiency

- The proposed initiatives include:
  1. Implement Market Renewal and Rate Design Initiatives
  2. Fund Electricity Support Programs Through The Tax-base
  3. Eliminate ICI
  4. Amortize Conservation Program Costs
  5. LDC Option
  6. OPG Lending Options
  7. End DRC Early for Industrials
  8. Deferred Tax Asset
  9. Dedicate Departure Tax
  10. Cancel/Adjust Renewable Energy Procurements

- The proposed initiatives provide opportunities to reduce electricity costs for residential and industrial consumers while at the same time transforming the province's electricity market and yielding benefits for the electricity system.

Proposed Initiatives – Impacts

- Each of the proposed initiatives under consideration target different government programs and different parts of the bill. The proposals impact different classes of electricity consumers to varying degrees.

Proposal	Program / Initiative	Line on Bills	Who Benefits
1. Implement Market Renewal and Rate Design Initiatives	Market Renewal, rate design initiatives	Electricity, Global Adjustment, Regulatory	Market Renewal: All electricity consumers Rate Design Initiatives: Participating electricity consumers
2. Fund Electricity Support Programs Through The Tax-base	OESP, RRRP	Regulatory	All electricity consumers evenly
3. Eliminate ICI	ICI	Electricity, Global Adjustment	Only Class B electricity consumers
4. Amortize Conservation Program Costs	Amortization	Electricity, Global Adjustment	Class B electricity consumers and to a lesser extent Class A consumers
5. LDC Option	n/a	Delivery	All embedded consumers
6. OPG Lending Option	n/a	Electricity, Global Adjustment	Class B electricity consumers and to a lesser extent Class A consumers
7. End DRC Early for Industrials	Debt Retirement Charge (DRC)	DRC	Class A consumers
8. Deferred Tax Asset	Deferred Tax Asset	Delivery	All Tx Customers / Hydro One Distribution customers
9. Dedicate Departure Tax	Departure Tax	TBD	TBD
10. Cancel/Adjust Renewable Energy Procurements	FIT, LRP, Support Programs	Electricity, Global Adjustment	Class B electricity consumers and to a lesser extent Class A consumers

Proposed Initiatives – Potential Residential Electricity Consumer Savings

$/750kWh	2017	2018	2019	2020	2021	2022
1. Implement Market Renewal and Rate Design Initiatives*	-	-	-	1.58	1.59	1.60
2. Fund Electricity Support Programs Through The Tax-base	2.17	2.31	2.42	2.49	2.52	2.55
3. Eliminate ICI	4.40	4.24	4.10	4.24	3.73	3.58
4. Amortize Conservation Program Costs	1.67	1.56	1.21	0.81	0.54	0.3
5. LDC Option						
6. OPG Lending Option						
7. End DRC Early for Industrials	-	-	-	-	-	-
8. Deferred Tax Asset	xx	xx	xx	xx	xx	xx
9. Dedicate Departure Tax	xx	xx	xx	xx	xx	xx
10. Cancel/Adjust Renewable Energy Procurements						
Total						

Note: The above initiatives will provide similar benefits for non-RPP Class B electricity consumers. Proposal 2 assumes OESP participation of 60% and 5-year maturity. *Savings estimates do not include changes related to rate design.

Proposed Initiatives – Potential Industrial Electricity Consumer Savings

$/MWh	2017	2018	2019	2020	2021	2022
1. Implement Market and Rate Design Initiatives*	-	-	-	2.11	2.12	2.13
2. Fund Electricity Support Programs Through The Tax-base	2.89	3.07	3.21	3.31	3.35	3.39
3. Eliminate Rate-based Industrial Programs	(24.12)	(23.21)	(22.45)	(23.23)	(20.42)	(19.61)
4. Amortize Conservation Program Costs	1.15	1.08	0.84	0.56	0.37	0.25
5. LDC Option						
6. OPG Lending Option						
7. End DRC Early for Industrials	7.00	1.75	-	-	-	-
8. Deferred Tax Asset	xx	xx	xx	xx	xx	xx
9. Dedicate Departure Tax	xx	xx	xx	xx	xx	xx
10. Cancel/Adjust Renewable Energy Procurements						
Total						

Note: Proposal 2 assumes OESP participation of 60% and 5-year maturity. Proposal 3 reflects the elimination of ICI, as opposed to moving ICI cost shift to the taxbase. The $1.75/MWh savings associated with Proposal 7 in 2018 accounts for the fact that under the status quo, DRC will be removed from bills in April 2018. *Savings estimates do not include changes related to rate design.

1. Electricity Market Renewal and Rate Design Initiatives

- Continue to move forward with IESO's Market Renewal initiatives and the OEB's Regulated Price Plan (RPP) roadmap
  - Market Renewal encompasses projects such as a single-schedule system (from the current two-schedule system), more frequent intertie scheduling to better align with other jurisdictions and a day-ahead market.
  - The OEB is undertaking a comprehensive review of the RPP, including analysis on time-of-use (TOU) pricing time periods and the effect of different peak to off-peak price ratios. TOU pricing could also be considered for Class B consumers to reduce Global Adjustment volatility and reduce system costs.
  - Moving to "technology-agnostic" procurements will provide new opportunities for innovation and modernization and ensure ratepayers receive the best prices possible.

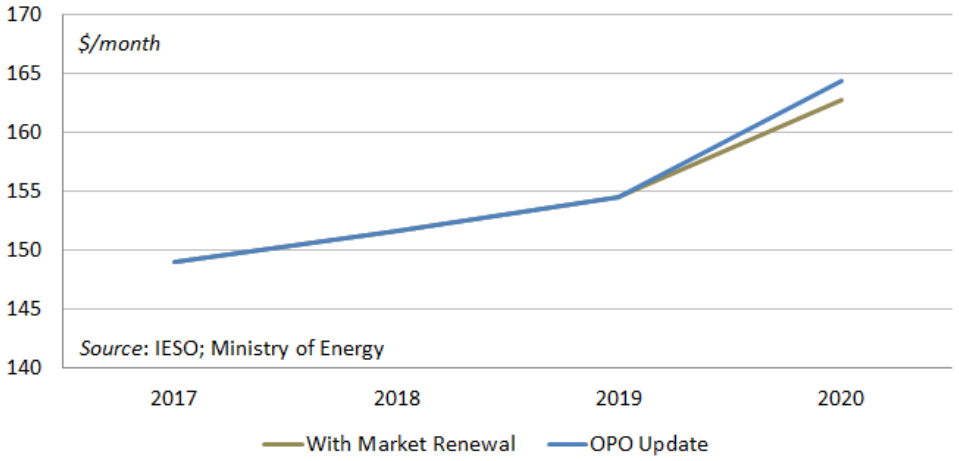
Considerations

- The IESO's Market Renewal is a broad initiative that will impact all aspects of Ontario's electricity market. Ontario has had a uniform price since market opening.
- Adopting a technology-agnostic stance will lower the overall cost of providing electricity service by selecting the most cost-effective resources to fulfill various system needs.
- As part of its RPP review, the OEB will be running pilots with LDCs to assess customer response to alternative time periods and pricing structures. Learnings from these pilots will help inform potential changes to the RPP. Pilots are expected to be in market May 2017 and run for one year. The OEB expects to implement RPP changes over the next 3 to 5 years.
- As Ontario's electricity system has evolved, TOU pricing periods have remained fixed. Realignment of TOU periods or a push towards "Critical Peak Pricing" by the OEB with support from government (e.g., regulation changes would be required) could reduce system costs.
- Class B electricity consumers currently pay Global Adjustment (GA) on a volumetric basis. Moving them to TOU would provide an incentive to shift consumption to off-peak periods.
  - Consumers, including manufacturers, who are unwilling to shift would face higher costs and likely not be supportive of the changes.
  - The decision to pursue TOU pricing for non-RPP class B consumers will impact proceeds recycling as there is interplay between the two initiatives.

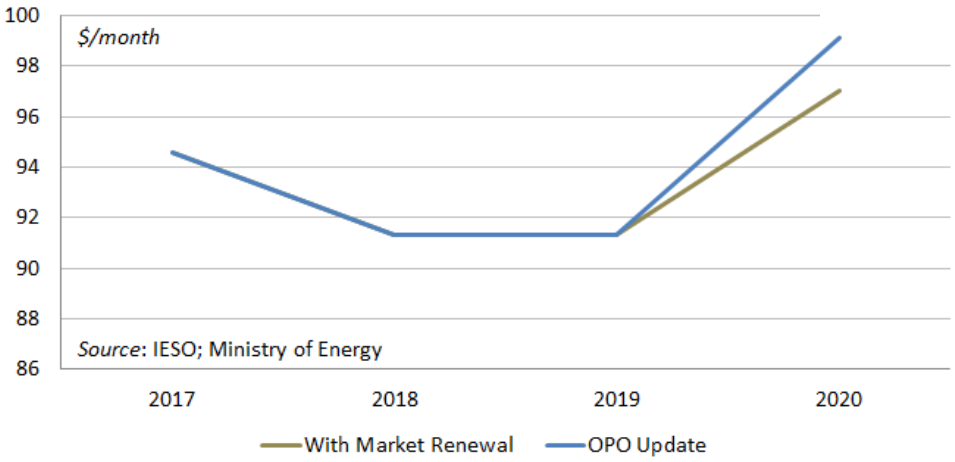
1. Electricity Market Renewal Initiatives – Cost Savings

- Assuming changes related to Market Renewal initiatives are reflected in HOEP and uplifts, $300 million in annual savings would lead to a reduction in a typical residential bill of about $1.60/month, or about 1% at current retail prices.

Typical Residential Electricity Bills
Highlighting Impact of Market Renewal



Typical Industrial Electricity Prices
Highlighting Impact of Market Renewal



- For industrial consumers, $300 million per year equates to a savings of approximately $2/MWh, or more than 2% at current all-in prices.

2. Fund Electricity Support Programs Through the Tax-Base

- Propose to fund electricity support programs, including Ontario Electricity Support Program (OESB) and Rural or Remote Electricity Rate Protection (RRRP), through the tax-base instead of a regulated charge. This would allow the OESP and the RRRP charges to be removed from the Regulatory line on electricity bills.
  - The total cost of RRRP and OESP in 2017 will be approximately $292 million and $157 million respectively.
  - The average 750 kWh bill impact for a residential customer to support RRRP and OESP through the regulatory charge was $1.80/month in 2016. This is expected to rise to approximately $2.45/month in 2017 as a result of the recently announced RRRP expansion.

Considerations

Consumer Impacts

- As RRRP and OESP provide strong social benefits, there is precedent for funding these programs through thetax-base.
- RRRP and OESP are included in the “Regulatory” line on bills. If RRRP and OESP were eliminated from bills, the Regulatory line would decrease; however, as the Regulatory line is the smallest line item component of invoices, there is risk the decrease may not be perceived by customers.
- Currently the recipients of RRRP and OESP pay for a small portion of the programs as they are still eligible for the related charges on their electricity invoices. Funding these programs with tax revenue would ensure that the households that are intended to benefit from these programs are also not directly paying for them, aside from contributions to the overall tax base
- Consideration would have to be given on treatment of credits or rebates as taxable income. For OESP, Ministry engaged with Ministry of Finance and Canada Revenue Agency to ensure OESP was not treated as taxable income.

Implementation

- Funding RRRP and/or OESP with tax revenue would require amendments to existing legislation and regulations.
- Provisions under the existing RRRP regulation allow for an escalating factor for the portion of the rate protection for Hydro One’s low-density R2 customers, beginning in 2018. Changes to that mechanism may be necessary under a revised funding process.
- Additionally, the RRRP regulation provides a funding mechanism for transmission infrastructure required to grid connect remote First Nation communities. Considerations for how that funding will be supported by the tax base will need to be determined.

2. Fund Electricity Support Programs Through the Tax-Base

- The Financial Assistance Working Group advised the OEB that social programs typically maximize enrollment of potentially eligible participants at 40%, which would be reached after 3 years of program delivery.
- The OEB planned for OESP participation of 60% by the end of 2016 to ensure there were sufficient funds available if uptake exceeded Working Group projections.
- To date, about 27% (155,000 customers) are enrolled, with a year-end figure that could be 31% (175,000 customers).
- The table below estimates annual costs up to the end of 2020 based on the following assumptions:
  - Under the 40% participation scenario, maximum enrollment is achieved within 3 years;
  - Under the 60% participation scenario, maximum enrollment is achieved within 5 years;
  - 10% administration costs (actual administration costs will depend largely on the credit process, program advertising, use of consultants, etc.); and
  - No escalation in the credit amount.

Year	Estimated Annual Cost, 40% Participation, 3-Year Maturity*	Estimated Annual Cost, 60% Participation, 5-Year Maturity*
2017	$100.2M (38%)	$121.3M (46%)
2018	$105.5M (40%)	$139.8M (53%)
2019	$105.5M (40%)	$153.0M (58%)
2020	$105.5M (40%)	$158.3M (60%)

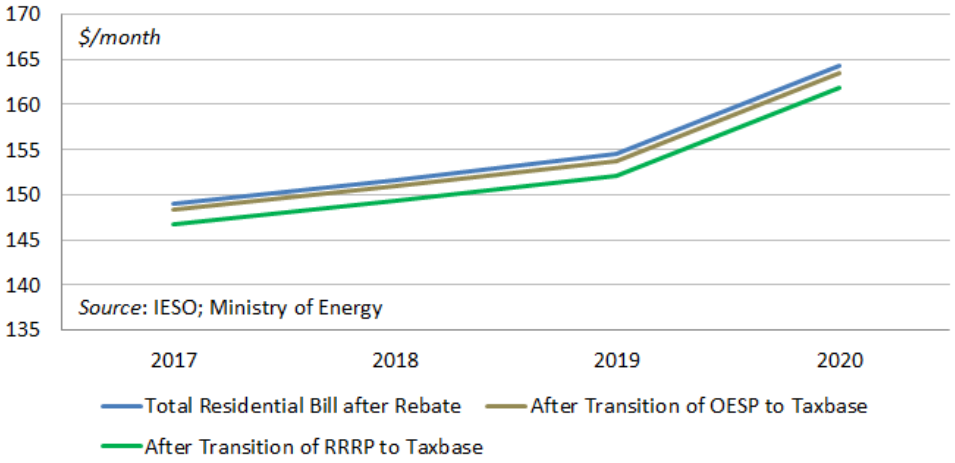
***Note:** 2016 was the first year of program delivery.

2. Fund Electricity Support Programs Through the Tax-base – Cost Savings

- Transitioning OESP and RRRP to the tax-base would reduce a typical residential bill by about $2.50/month by 2020.

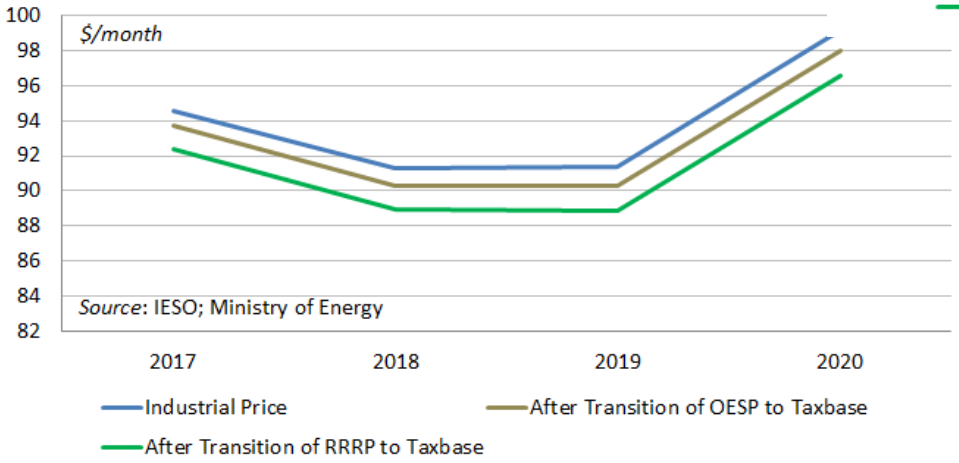
Typical Residential Electricity Bills

Impact of OESP and RRRP



Typical Industrial Electricity Prices

Impact of OESP and RRRP



3. Eliminate ICI

- The cost shift from the Industrial Conservation Initiative (ICI) could be removed from electricity bills by eliminating ICI.

- The ICI allows large electricity consumers to lower their electricity costs by reducing their demand during peak hours.

Considerations

- Absent ICI, industrial electricity rates would be substantially higher. Stakeholders have highlighted ICI as an integral factor in retaining industry in the province.

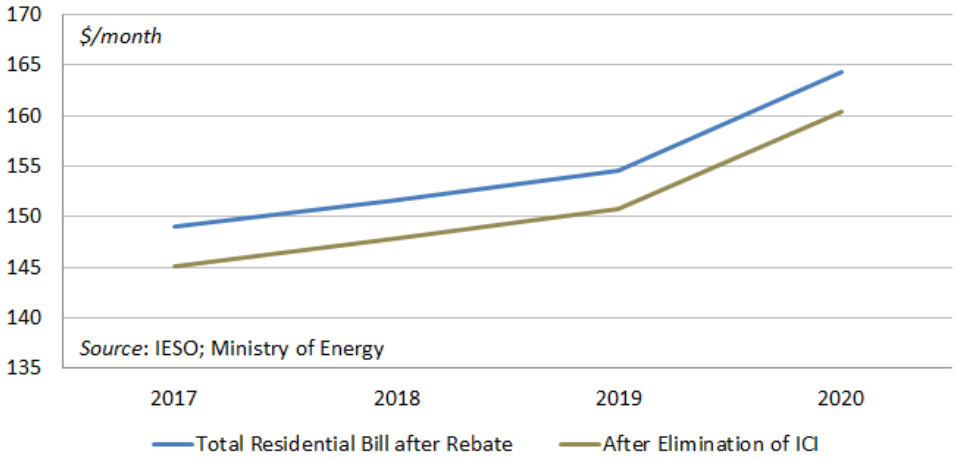
- If ICI is retained, current IESO projections indicate that the cost shift will decrease each year going forward as Global Adjustment (GA) decreases (due to an expected increase in HOEP).

- Alternatively, ICI could be funded through the tax-base. There is precedent to use the tax-base for industrial support programs, including the Northern Industrial Electricity Rate Program (NIERP) and the Jobs and Prosperity Fund.

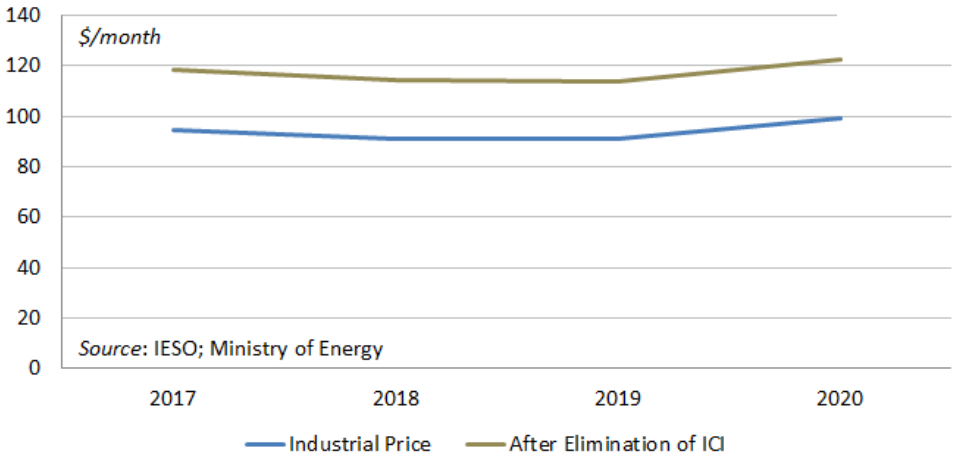
3. Eliminate ICI – Cost Savings

- Eliminating ICI would result in a benefit of more than $4/month for residential electricity consumers in 2017…

Typical Residential Electricity Bills
Highlighting Impact of ICI



Typical Industrial Electricity Prices
Highlighting Impact of ICI



…and unless government took action to mitigate the associated cost shift back to industrial consumers, typical industrial prices would increase by about one-third. Such a price increase would pose significant challenges for energy-intensive consumers.

4. Amortize Conservation Program Costs – Overview

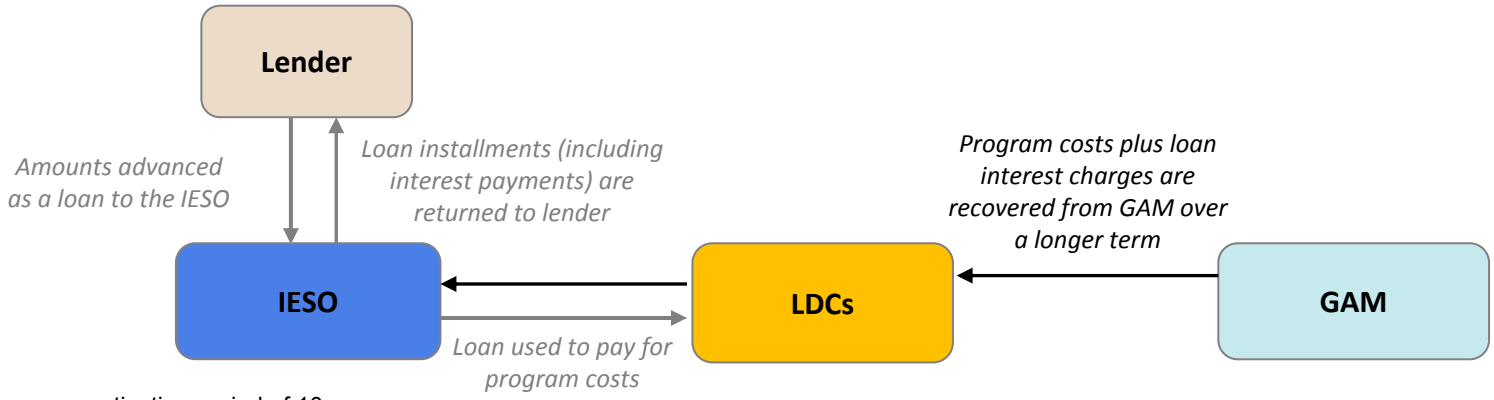
- ~$3 billion from the electricity ratepayer base will be spent on conservation programs delivered under the Conservation First Framework and the Industrial Accelerator Program (IAP) between 2015 and 2020.
- Currently, Conservation and Demand Management (CDM) program costs are recovered from the Global Adjustment (GA) mechanism about one month after expenses are incurred.
- As a potential short-term rate mitigation measure, certain CDM costs could potentially be amortized. This would involve IESO taking a loan to cover CDM costs and then making payments from the GA toward the loan (with interest payments) over a period of several years.

Illustrative Example for One Year of Program Costs*

1) 2018: LDCs incur $100 million in conservation program costs.

2) 2018: $10 million is recovered from ratepayers via GAM to cover program costs. IESO borrows $90 million from lender to pay for remaining program costs.

3) 2019-2027 (9 year period): IESO collects $10 million per year plus interest payments from ratepayers (via GA) to make payments on loan until the loan is paid off in 2027.



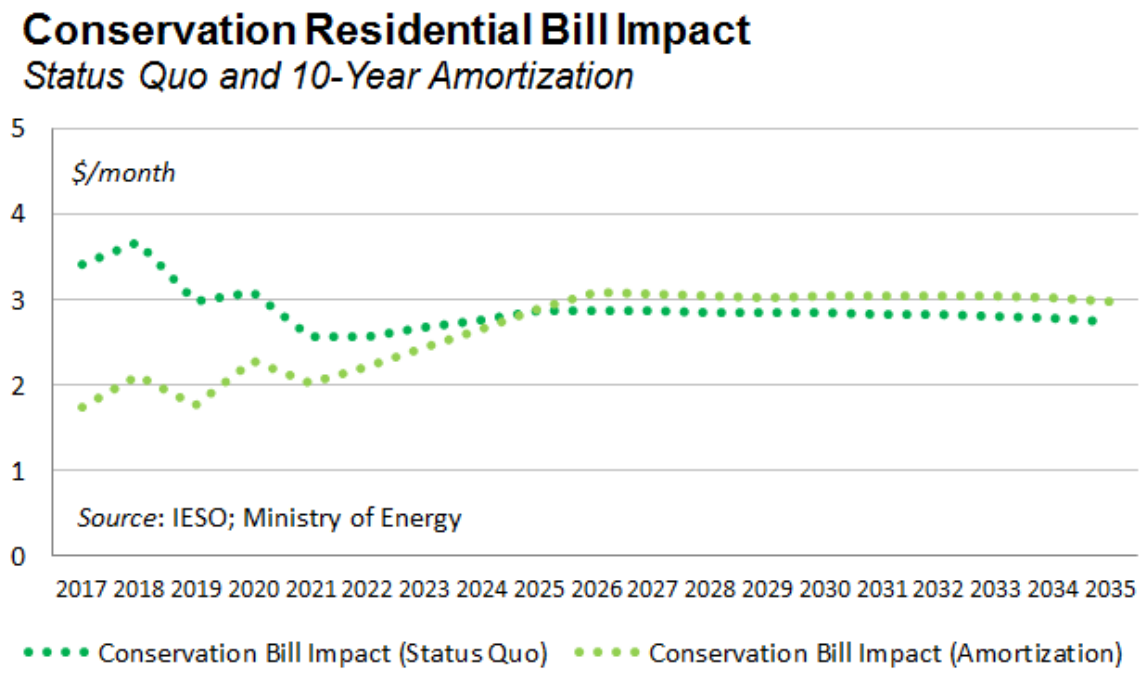
***Note:** Assumes an amortization period of 10 years

4. Amortize Conservation Program Costs – Considerations and Next Steps

- Under **Public Sector Accounting Board (PSAB) accounting standards**, used by both the Province and IESO, only certain assets can be amortized : 1. pensions and 2. tangible capital assets. Under PSAB an asset must meet several criteria to be considered a capital asset, including:
  - A tangible capital asset must be tangible and substantive and the Ontario government must have title and operate the asset.
  - A tangible capital asset must bring a tangible benefit to the government or to Ontario.
- CDM costs, on their own, do not meet the criteria of a tangible capital asset because customers would have ownership and control of installed CDM measures, not the Province or IESO.
- **Rate-regulated accounting** was developed to recognize the unique nature of regulated entities (e.g., electricity generators, LDCs). Under rate-regulated accounting certain costs can be treated as amortizable assets that would not normally be considered assets under accounting principles.
  - Over the past several years, the Auditor General (AG) has expressed concerns about the appropriateness of recognizing rate-regulated assets in the Province's consolidated financial statements.
  - Rate-regulated accounting is currently under review by international accounting standard setting bodies and is currently permitted only on an interim basis, so its future is unclear at present.
- If some of Ontario's CDM costs could be amortized, analysis shows that ratepayer impacts would be reduced in the short-term but interest charges on the loan would result in increased overall ratepayer costs in the longer-term.
- Legislative amendments would be needed to allow recovery of loan interest charges from GA.
- If there is a desire to proceed:
  - Formal accounting advice will need to be sought from IESO's external auditor as well as the Ontario Provincial Controller (OPC) to determine whether CDM costs could be amortized according to rate-regulated accounting standards.
  - Further legal analysis would also be required to confirm legal viability and possible approaches to implementation.

4. Amortize Conservation Program Costs – Cost Savings

- Amortizing a portion of conservation spending would produce a benefit for electricity ratepayers in excess of $1/month at the outset. Over time, the benefit would decrease and turn into a cost, as interest charges begin to grow.



Note: Chart assumes that conservation incentive costs are available for amortization while administration cost are not. Although there is variable from year to year, incentives represent about two-thirds of conservation spending in Ontario. Chart assumes conservation spending continues at a similar rate beyond 2020. Chart assumes a 10-year borrowing rate of 3.0%.

5. LDC Option

- Propose to XXXXXXXXXXXXXXX

Considerations

- XXXXXXXXXXXXXXXXXX

5. LDC Option – Cost Savings

6. OPG Lending Option

- Propose to XXXXXXXXXXXXXX

Considerations

- XXXXXXXXXXXXX

6. OPG Lending Option – Cost Savings

7. End DRC Early for Industrials

- Propose to remove the $0.07/kWh Debt Retirement Charge (DRC) from the bills of industrial consumers beginning on January 1, 2017, instead of April 1, 2018.

Considerations

- Alternatively, a variation on ~~this~~ the proposal would be to reduce the DRC to $0.035/kWh starting on January 1, 2017, to provide relief for cap and trade until proceeds recycling is fully operational.

- Residential consumers had the DRC removed from bills since January 1, 2016. Taking DRC off industrial bills would result in equal treatment for these two groups of consumers.

- Small business and other commercial consumers would be opposed to this proposal, because they would continue to pay DRC until at least April 1, 2018.

- From a billing and settlement perspective, in the context of this proposal, it would be necessary to define an industrial consumer. For example, consideration would have to be given to whether the proposal would apply to large industrials only (i.e., demand greater than 5 MW) or include smaller industrials.
  - LDCs may claim that it will be difficult to remove DRC from industrial bills without removing it from the bills of large commercial consumers.

- The savings for industrial consumers associated with this proposal would drop to zero in April 2018, since this is the current planned date for removing the DRC from non-residential bills.

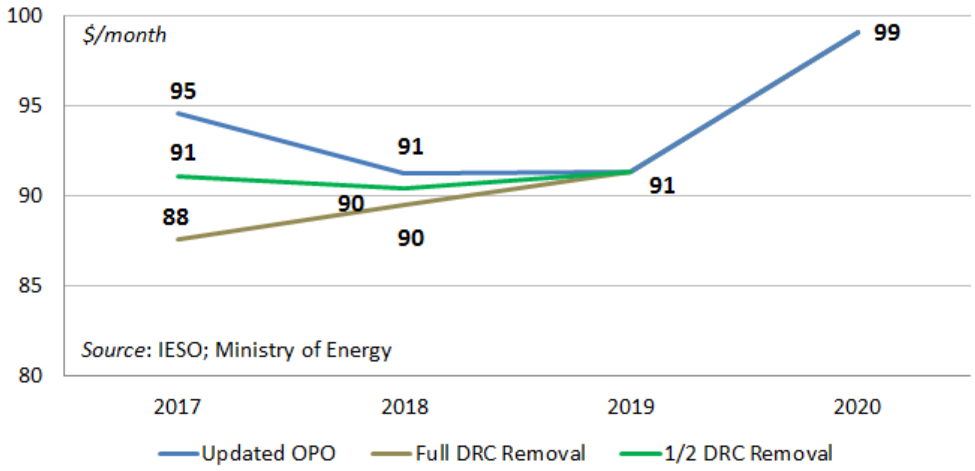
- Prior to moving forward with this proposal, additional analysis from Legal Services and the Ministry of Finance would be needed.

7. End DRC Early for Industrials – Cost Savings

- For a typical large industrial paying $85/MWh, removal of DRC would represent a savings of more than 8%.
- A 50% reduction in the DRC charge would represent a savings of more than 4%.
- In 2017, when typical large industrial prices are expected to increase to $95/MWh, the savings would fall to 7%.

Typical Industrial Electricity Prices

Impact of DRC Removal



- For industrial consumers paying higher prices (i.e., embedded industrials, those that pay a relatively high GA), the percentage savings would be less.

8. Dedicate Departure Tax

- In connection with the IPO, as a result of leaving the PILs regime and entering the corporate tax regime, Hydro One was deemed to dispose of its assets for proceeds equal to its fair market value, triggering a PILs liability of $2.6 billion (Departure Tax).
- This was paid to the Ontario Electricity Financial Corporation (OEFC), to be dedicated towards repayment of electricity sector stranded debt.
- The Province could consider repurposing those funds to the benefit of ratepayers.
- This could be done with an agreement by the OEB to allow Hydro One to keep the DTA benefit that resulted from the IPO.

Considerations

- Depending on the Province's approach, this may be seen as interfering with the independence of the OEB, and may not be possible.
- Cost savings to ratepayers would depend on how the Province flows the $2.6 billion value.
- This may help to preserve the value of Hydro One, allowing the Province to proceed with share offerings and meet its overall targets:
  - However, it may appear that the Province is protecting the company (and its shareholders) from a potentially adverse decision from the OEB.
- These funds were paid to the Ontario Electricity Financial Corporation (OEFC), to be dedicated towards repayment of electricity sector stranded debt. Repurposing may have an impact on the defeasance of this debt.

9. Deferred Tax Asset

- In connection with the IPO, the revaluation of the tax basis of the assets of Hydro One and its subsidiaries to fair market value resulted in a net deferred tax recovery of $2,619 million recorded in 2015.
  - The Deferred Tax Asset (DTA) arises because cash taxes payable by Hydro One, including those payable to the Province, will be reduced for some period into the future.
- The Ontario Energy Board (OEB) is currently reviewing whether the benefit from a tax asset resulting from the Initial Public Offering (IPO) of Hydro One should flow to ratepayers:
  - Assuming all value flows to ratepayers, this could result in relatively small savings (<10 cents per month on the Tx portion of bills) for 8-10 years; and
  - Assuming a similar decision is mirrored for Hydro One's Dx application, savings for Hydro One customers of ~50 cents to ~$1 per month could flow to ratepayers for 8 – 10 years.

Considerations

- In August 2016, the Province announced it had dedicated $3.2 billion from the sale of Hydro One shares in 2015 to the Trillium Trust – this included the provincial portion (84% or ~$2.4 billion) of the $2.6 billion Deferred Tax Asset.
- Depending on amounts flowing to ratepayers, Hydro One may also write down a portion of the $2.6 billion DTA, which could affect the Province's financials and amounts available for investment through the Trillium Trust.
- Hydro One's share price would likely decline as a result of this adverse decision, potentially impacting future Provincial offerings and the ability of the Province to reach its share sale targets.
- Although this would have a material impact on the Province's financials, this could be messaged as a benefit to ratepayers, reflective of an independent regulator focused on protecting customers.

10. Cancel/Adjust Renewable Energy Procurements

- The Ministry could consider the following actions to further mitigate future impacts to electricity bills:

Unallocated/Terminated Capacity	Announced Procurement & Programs	Executed Contracts	Additional Programs
A. Do not procure unallocated or terminated capacity (i.e. revisit/defer achievement of the 20,000 MW LTEP 2013 target)	B. Cancel microFIT 2017	F. Cancel LRP I contracts	G. Cancel Support Programs
	C. Revise FIT 5 target or		
	D. Cancel FIT 5		
	E. Cancel FIT 6		

Overarching Considerations

- Cost savings associated with reducing or cancelling renewable energy procurements and programs will not reduce current electricity bills, but would result in future cost reductions relative to Ontario Planning Outlook forecasts.
- Implementing any of A to F would affect achievement of the 2013 LTEP targets of 10,700 MW of non-hydro renewable energy online by 2021 and 20,000 MW of renewable energy online by 2025.
- Stakeholders may question Ontario's ability to meet climate change targets if renewable energy commitments are reduced.

10. Cancel/Adjust Renewable Energy Procurements– Unallocated/terminated Capacity

- Do not procure any unallocated or terminated capacity.
- [placeholder for IESO: Report on amount unallocated capacity to 20,000 MW target]
- [placeholder for IESO: Cost calculation relative to OPO and bill impact]

Considerations

- With a few exceptions (e.g. rollover of unallocated microFIT capacity; addition of terminated microFIT and small FIT capacity to FIT 5), plans for unallocated or terminated capacity are not defined in any announcements or existing directions.
- Amending directions would be required to change or revoke existing directions related to unallocated or terminated capacity.

10. Cancel/Adjust Renewable Energy Procurements– Announced Procurements

- FIT and/or microFIT procurements could be reduced or cancelled.

B. Cancel microFIT 2017

- 50 MW microFIT 2017 is anticipated to cost approximately $190 million (NPV to 2016).
- [placeholder for IESO: Cost calculation relative to OPO and bill impact]

C. Proceed with a 150 MW FIT 5 Procurement

- Procuring 150 MW for FIT 5 is estimated to cost approximately $420 million (NPV to 2016).
- [placeholder for IESO: Cost calculation relative to OPO and associated bill impact]

D. Do not Proceed with a FIT 5 Procurement

- [placeholder for IESO: Cost calculation relative to OPO and associated bill impact]

E. Cancel the FIT 6 Procurement

- FIT 6 is anticipated to have a 150 MW procurement target and is estimated to have a value of $380 million (NPV 2016).
- [placeholder for IESO: Cost calculation relative to OPO and bill impact]

Considerations

- All options would require amendments to existing directions to IESO.
- The FIT 5 procurement is underway with a base target of 150 MW and inclusion of any capacity available from contract terminations under prior small FIT and microFIT procurements. The application window closed on November 25, 2016.
- FIT program can be cancelled without reimbursement to Applicants prior to issuing contracts. There is a higher risk of successful legal challenge if the Minister directs the IESO to terminate FIT 5 once contract offers have been issued.

10. Cancel/Adjust Renewable Energy Procurements – Existing Contracts

- Seek Cabinet approval to cancel LRP I contracts

G. Cancel Existing LRP I Contracts

- The 16 LRP I contracts (approx. 455 MW) have been executed.
- Projects are under development. No projects have met their Key Development Milestones.
- The total value of the LRP I Contracts is estimated at approximately $1 billion (NPV to 2016).

[Placeholder for IESO: Cost calculation relative to OPO and associated bill impact]

Considerations

- Cancellation of contracts would be expected to result in strong negative stakeholder reaction, potentially affecting Ontario's business reputation and discouraging future investment.
- 13 of the 16 LRP I contracts have Indigenous participation. Cancelling LRP I contracts would remove this economic development opportunity and would likely damage relationships between Indigenous communities and the government.
- To help inform a decision, IESO or OEB could be asked to evaluate and provide guidance to the Ministry on the system need for LRP I projects and potential ratepayer impacts/benefits.
- LRP I Contract includes an "Optional Termination" provision allowing IESO to terminate any contract prior to the "Commercial Operation Date" with 6 months written notice.
- IESO obligations under the Optional Termination provision depend on whether the project has met all "Key Development Milestones".
  - As no projects have met their Key Development Milestones, the estimated total cost payable to contract holders is about $8 million.

Legal Analysis

- Any new directive to cancel LRP I contracts would need to be approved by Cabinet, either as part of an LTEP implementation directive to the IESO, or pursuant to the overall power to direct the IESO with respect to procurements.
  - An amendment to an existing direction would not require Cabinet approval, however, further analysis is required to determine if direction to cancel LRP I contracts could be considered as amending existing direction.
- ENERGY has previously received advice that there is a high risk that a court would conclude that the Minister has no authority under the *Electricity Act , 1998* to issue a direction requiring the IESO to terminate microFIT Conditional Offers and FIT Offer Notices that have already been issued to applicants, because these offers create vested contractual rights. This reasoning would likely apply equally to any direction to the IESO to cancel LRP I contracts. Previous advice has also flagged a risk that the Province could be liable for damages in tort for inducing a breach of contract (or other claims).
- The risk and costs associated with potential law suits resulting from the cancellation of contracts requires further analysis. LSB recommends ENERGY seek an opinion from Crown Law Office Civil before proceeding.

10. Cancel/Adjust Renewable Energy Procurements– Support Programs

- The energy Support Programs could be cancelled.

F. Cancel Support Programs

- The 2016 Support Programs budget is $14 million.
- Support Programs included:
  - **Education and Capacity Building Program (ECB):** Submissions window opened on October 24, 2016 and will close on December 21, 2016
  - **Energy Partnerships Program (EPP):** Applications received by December 9, 2016 will be reviewed together
  - **Aboriginal Community Energy Plans (ACEP):** Deadline for proposals was October 7, 2016

Considerations

- Cancelling support programs would be seen negatively by Indigenous communities, cooperatives, and municipalities.
- Amendments to existing direction to IESO would be required.
- Given the relatively low cost of delivering the support programs, ratepayer savings associated with cancelling the programs would be negligible.
- If procurements are cancelled the role of support programs would need to be revisited.
- An assessment of any future need for support programs may be best considered as part of the updated Long-Term Energy Plan (LTEP), including considering any feedback received through consultation and engagement.

Appendix

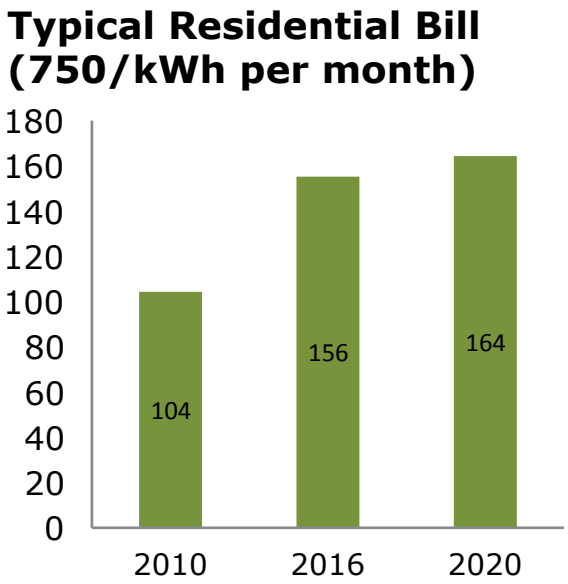
Electricity Consumer Classes

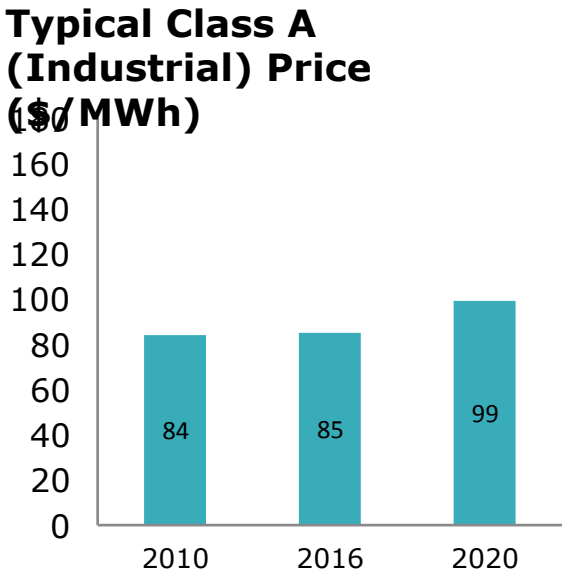
- In Ontario, there are three classes of electricity consumers:

	Regulated Price Plan	Class B	Class A
Consumer Types	• Residential • Small Business • Farms	• Commercial • Institutional • Small industrial	• Large commercial • Large industrial
Load Size	Below 0.05 MW	Between 0.05 MW and 1 MW	Above 1 MW
Total Consumption	58 TWh	57 TWh	26 TWh
Share of Consumption	41.1%	40.4%	18.4%

Prices by Electricity Consumer Class

- Since 2010, average bills for residential consumers (i.e., using 750 kWh/month) have increased by over 50%. Rates are forecast to continue to increase, with residential consumers paying an estimated 6% by 2020.
- Industrial electricity rates have remained relatively flat over the same time period, due primarily to the Industrial Conservation Initiative (ICI). ICI represents a cost shift of about $5/month for residential electricity consumers. Industrial electricity consumers are forecast to see an increase of 16% by and 2020.





Note: 2016 represents year-to-date September 2016 for industrial. Cap and trade proceeds recycling is included for the industrial consumer for 2020.

Rate Mitigation Levers

- To provide further rate relief to Ontario electricity consumers, the government can use one or more of the levers outlined below:
  - **Tax-based Lever:**
    - Provide rebates funded from the tax-base or transfer items currently paid through the rate-base to the tax-base.
  - **Rate-based Lever:**
    - Shifts costs within the rate-base from one customer group to another to achieve electricity system benefits and/or policy goals.
  - **Cap and Trade Proceeds Lever:**
    - Use cap and trade proceeds on initiatives that help reduce greenhouse gas (GHG) emissions from the electricity sector (e.g., recycling proceeds during off-peak periods) while providing benefits to some or all electricity consumers.

Traditional Rate Mitigation Programs

- Ontario has implemented a number of rate-based programs to help residential and industrial electricity consumers:
  - The Ontario Electricity Support Program (OESP) provides ongoing assistance directly on the bills of eligible low-income electricity consumers
  - The Rural or Remote Rate Protection (RRRP) program is provided to rural and remote residential and farm customers because the cost of distributing power to remote areas is much higher than for urban areas.
  - The Industrial Conservation Initiative (ICI) encourages Ontario's largest consumers to reduce consumption during peak periods while reducing system costs.
- There are also tax-base programs to help manage electricity prices:
  - Rebate the provincial portion of the HST from the electricity bills of residential, small business and farms as of January 1, 2017.
  - Northern Industrial Electricity Rate Program (NIERP), in which participants receive a rebate of two cents per kilowatt hour. On average, industrial electricity prices can be reduced by up to 20%.
- While rate-based programs provide relief to certain electricity consumers, they shift other costs to remaining ratepayers (See Appendix for additional details).

Driving Down Prices for Consumers

- Since 2013, a number of actions have been taken to drive down prices for consumers wherever possible:
  - Renegotiating the Green Energy Investment Agreement, reducing contract costs by $3.7 billion;
  - Deferring the construction of two new nuclear reactors at Ontario Power Generation's Darlington facility, avoiding an estimated $15 billion in new construction costs;
  - Approving Ontario Power Generation's plans to enable the ongoing operation of Pickering up to 2024, which is expected to save ratepayers as much as $600 million;
  - Reducing Feed-In-Tariff (FIT) prices through annual price reviews, saving ratepayers at least $1.9 billion relative to the 2013 Long-Term Energy Plan (2013 LTEP) forecast; and
  - Suspending the second round of the Large Renewable Procurement (LRP II) process and the Energy-from-Waste Standard Offer Program to save up to $3.8 billion in electricity system costs relative to 2013 LTEP.

Cost Shifts in the Electricity Sector – Current Programs

- Several programs in the electricity sector "shift costs" from one group of electricity consumers to another:
  - **Rural or Remote Rate Protect** (**RRRP)** is a longstanding program that reduces the delivery charge for rural electricity consumers and is paid for by all consumers in Ontario through a regulatory charge on bills.
  - **Ontario Electricity Support Program (OESP)** is funded via a regulatory charge on consumer bills and provides support for qualifying low income electricity consumers.
  - **Industrial Conservation Initiative (ICI)** empowers large consumers to lower their costs by reducing their demand during peak hours. In the process, ICI shifts costs from large electricity consumers to all other consumers in Ontario.
  - **Industrial Electricity Incentive** (**IEI**) program, offers reduced electricity prices for companies starting or expanding operations in Ontario. All electricity consumers in Ontario pay for the price reduction that IEI participants receive.

Cost Shifts in the Electricity Sector (Cont'd)

- The tables on the right show the estimated cost shifts that result from existing government programs.
- ICI has had the largest cost shift of all the programs, due to the large size of Global Adjustment (GA) and the way that it is recovered from consumer classes.
- RRRP and OESP impact the regulatory line on consumer bills, while ICI, IEI and conservation affect GA (i.e., Electricity line on bills of Regulated Price Plan consumers).

Cost Shift Impacts - Residential Bill

Typical 750 kWh/month Toronto Hydro consumer

$/month	2011	2012	2013	2014	2015	2016
ICI	2.65	3.25	3.88	3.53	4.75	4.77
RRRP	0.90	0.82	0.84	0.92	0.93	0.94
OESP	-	-	-	-	-	0.84
Conservation	1.85	1.92	2.00	1.58	2.43	2.45
IEI	-	-	0.08	0.09	0.11	0.12
Total	**5.41**	**5.99**	**6.81**	**6.13**	**8.21**	**9.12**

Cost Shift Impacts - Industrial Bill

Typical Class A consumer

$/MWh	2011	2012	2013	2014	2015	2016
ICI	-22.17	-26.36	-30.29	-25.91	-33.79	-33.92
RRRP	1.20	1.10	1.12	1.23	1.24	1.25
OESP	-	-	-	-	-	1.13
Conservation	1.53	1.59	1.66	1.31	2.01	2.02
IEI	-	-	0.07	0.08	0.09	0.10
Total	**-19.43**	**-23.67**	**-27.44**	**-23.29**	**-30.45**	**-29.43**

Note: OESP did not come into effect until 2016. The 2016 values represent forecasts and are subject to change.

Cost Shifts in the Electricity Sector (Cont'd)

- The table on the right shows the total cost for various government electricity programs. These programs are currently funded through the electricity system ratebase.

- Funding of these programs through the fiscal plan would remove these costs from the electricity system (i.e., Placing these costs on the taxbase).

Cost of Programs

By government program

$M	2011	2012	2013	2014	2015	2016
ICI	506	615	736	670	890	893
RRRP	172	156	159	176	174	176
OESP	-	-	-	-	-	158
Conservation	329	339	354	280	425	428
IEI	-	-	15	16	18	19

- For example, removing the roughly $900 million of program cost from the Industrial Conservation Initiative (ICI) program would save the typical residential electricity consumer $4.77 per month in 2016.

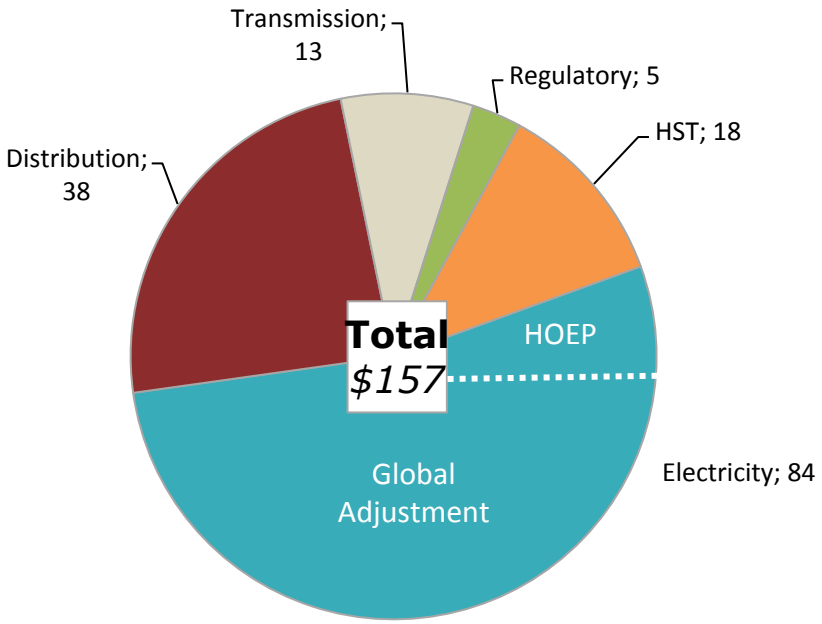
Note: OESP did not come into effect until 2016. The 2016 values represent forecasts and are subject to change.

Residential Electricity Prices

- There are approximately 4.5 million residential consumers in Ontario.
- The Regulated Price Plan includes nearly all residential consumers, as well as small businesses. Regulated Price Plan consumers pay a blended commodity rate regulated by the OEB, which is set every six months.
- For households, the Debt Retirement Charge (DRC) was removed from residential electricity bills as of January 1, 2016.
- In addition, the Ontario Electricity Support Program (OESP) provides an ongoing rate reduction directly on the bills of low-income electricity consumers who have applied and meet the eligibility requirements. The program is funded through the rate base.
- Rural customers, in particular those with electrical heating, pay higher monthly bills.

Typical Residential Monthly Bills ($)

As of November 1, 2016 (750 kWh/month)



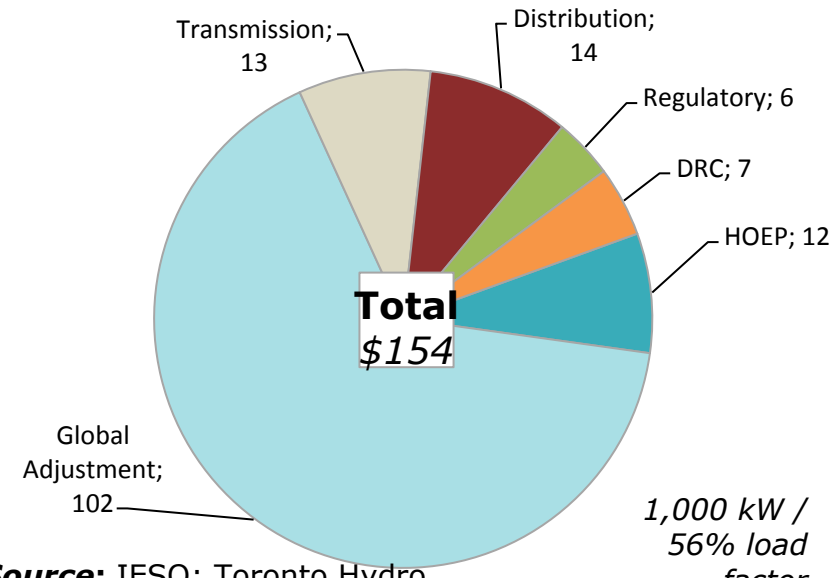
***Source*:** OEB, Toronto Hydro

Commercial Electricity Prices

- There are approximately 55,000 commercial and institutional consumers in the province. These consumers are Class B consumers, and have separate line items on the electricity bill for HOEP and GA.
- There is a high degree of differentiation amongst consumers within the commercial sector in terms of size and consumption patterns. For example, an elementary school has a much different hourly load profile compared to a full service restaurant. This is an important consideration when looking at the bill impacts of policy options.

Typical Commercial Price ($/MWh)

YTD June 2016 (Non-RPP Class B)



***Source*: IESO; Toronto Hydro**

- Consumers in the commercial sector do not pay time-of-use prices and have little incentive to shift demand away from high demand hours.
- Targeted pricing programs are currently not available for Class B consumers.

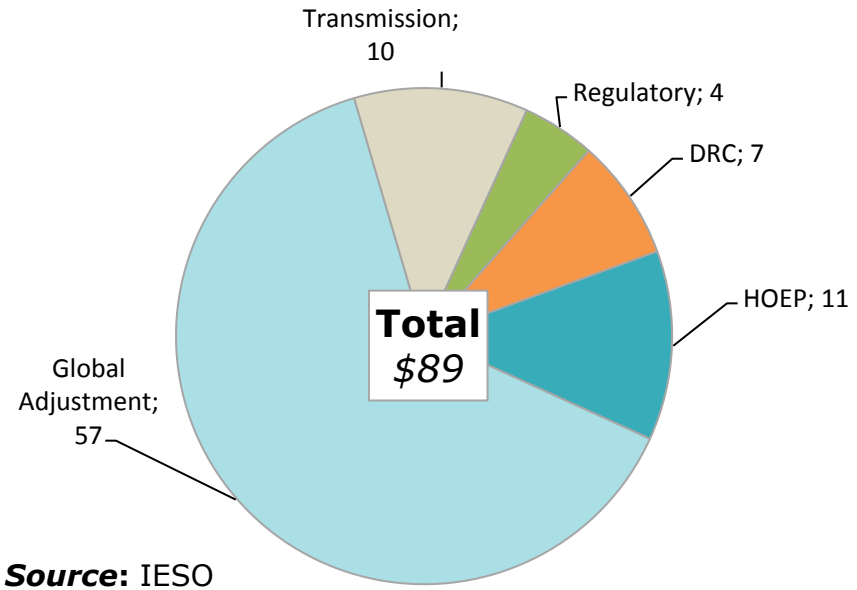
*** Note**: Most commercial consumers receive input tax credits for their HST.

Industrial Electricity Prices

- There are about 300 large industrial consumers in Ontario.
- Measures in place to mitigate industrial electricity prices include ICI and NIERP.
- ICI lowers costs for eligible large electricity consumers (i.e., those with monthly peak demand exceeding 3 MW) that reduce consumption during peak periods.
  - ICI consumers reduce their electricity rates by 25% on average.

Typical Large Industrial Price ($/MWh)

YTD June 2016



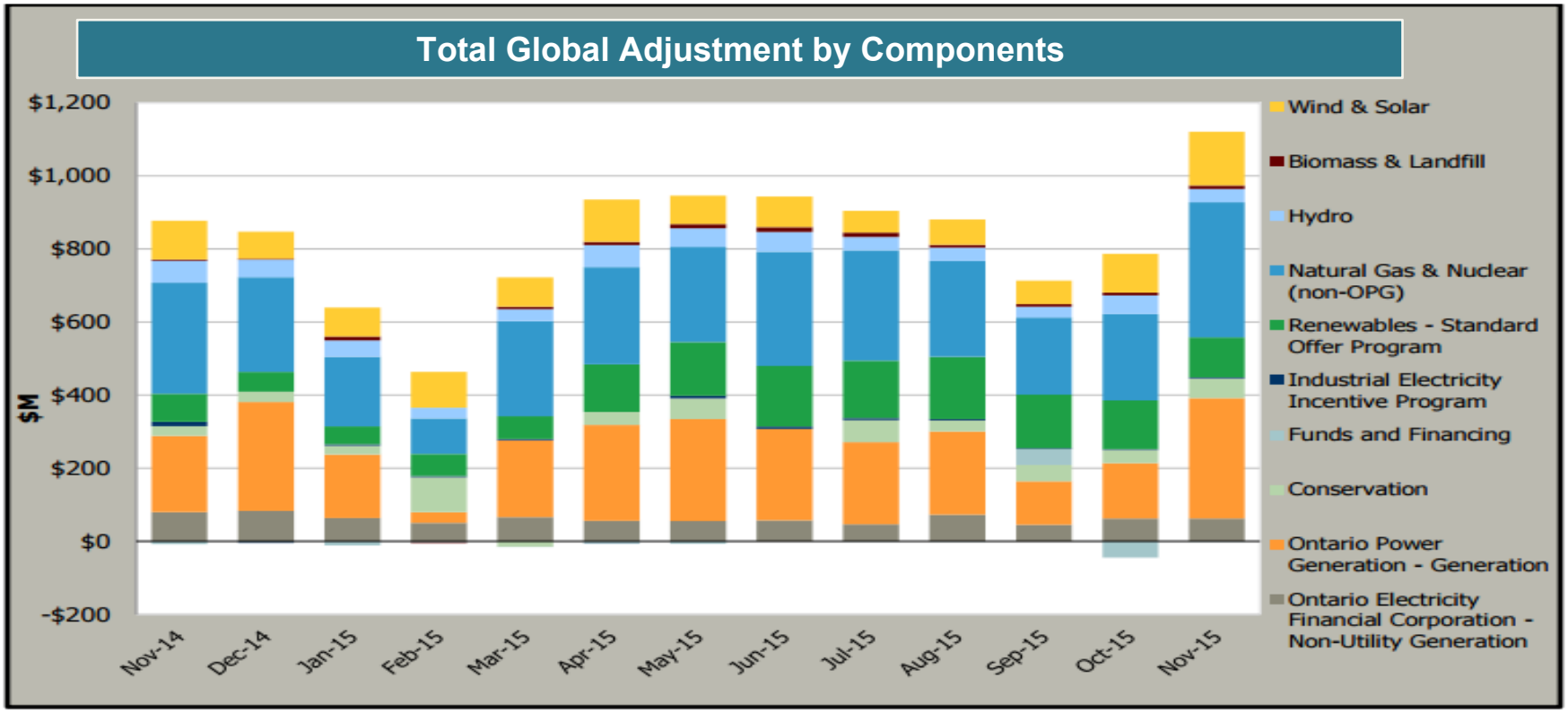
***Source*: IESO**

- Participants in NIERP receive a rebate of $20/MWh. On average, industrial electricity prices are reduced by about 20% through the program, reducing all-in prices to $69/MWh for these consumers. The program is funded through the tax base.

*** Note:** Industrial consumers receive input tax credits for their HST.

Total Components of Global Adjustment

- Global Adjustment (GA) is a market mechanism that recovers costs from electricity consumers, including the cost of almost all conservation programs in the province (i.e., approximately half a billion dollars in 2016).



Source: IESO Monthly Market Report (November 2015)

Cancel/Adjust Renewable Energy Procurements

Appendix A. LRP I Pre-Construction Liability Limits

- All 16 successful LRP I developers accepted Optional Termination Provisions when the LRP I Contracts were executed in April 2016.
- If the IESO chooses to enact the Optional Termination provision before a project has met all Key Development Milestones, the IESO is required to pay pre-construction development costs up to the Pre Construction Liability Limit.
- Pre-construction development costs include costs incurred for feasibility studies, obtaining site access rights, work towards environmental approvals, business development plans, negotiation of contracts for design, equipment, construction and financing, reasonable overhead expenses, and other reasonable costs incurred.
- The Pre Construction Liability Limits are:
    - Non-Rooftop Solar: $250,000 plus $10.00/kW of Contract Capacity
    - Waterpower: $500,000 plus $20.00/kW of Contract Capacity
    - On-Shore Wind: $400,000 plus $2.00/kW of Contract Capacity
- According to the LRP I Optional Termination provision, the developer has a duty to take reasonable steps to mitigate losses, liabilities, costs and damages incurred as a result of the Optional Termination.
    - The IESO will not provide compensation for amounts which are attributable to a developer's failure to take reasonable steps to mitigate.