

Electricity Price Mitigation

Ministry of Energy

WORKING DRAFT

Date:

Minister

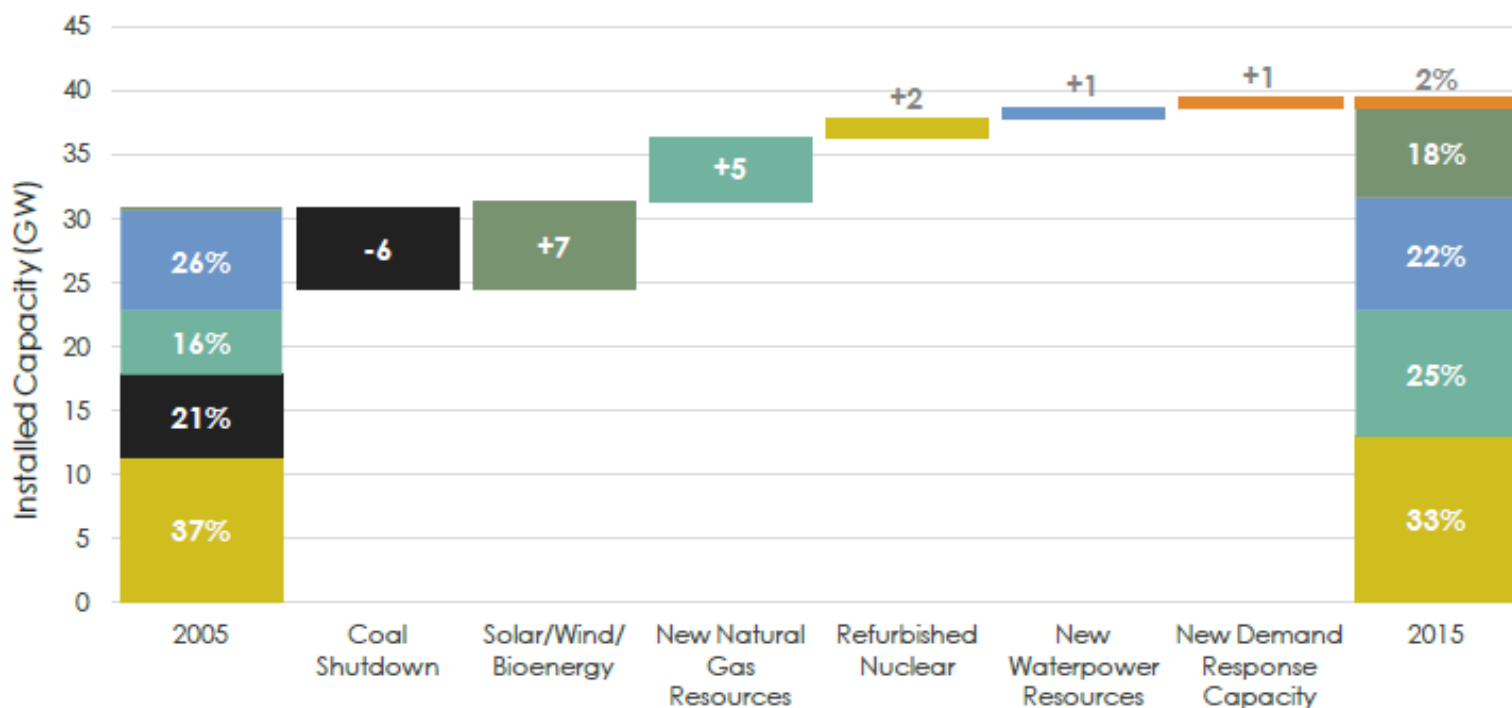
Deputy Minister

Context

- Electricity costs are increasing as the necessary investments are made to decarbonize and modernize the province's electricity infrastructure (i.e., \$35 billion+ investment in cleaner generation and \$15.5 billion investment in transmission and local distribution systems).
- Ontario has taken a number of actions to lower electricity costs for all consumers by:
 - Deferring investments in generation (e.g., new build nuclear), improving market efficiency (e.g., wind dispatch) and decreasing the cost of renewable procurements (e.g., GEIA renegotiation, decreasing FIT prices, competitive LRP).
 - Increasing cost effectiveness and improving efficiency by adopting new electricity market approaches (e.g., no new NUG contracting and demand response).
- Following the 2016 Throne Speech, actions were announced to further reduce electricity costs by:
 - Providing an 8% rebate (\$11/month savings), updating RRRP (\$45/month savings), expanding ICI (up to one-third savings for participants) and suspending the LRP II and the EFWSOP (up to \$3.8 billion in cost savings).
- On November 28, 2016, the Minister of Energy announced the need for changes in how electricity resources are procured, the need for wholesale market renewal and greater electricity consumer choice.
- 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.
- On a number of occasions the Premier has indicated publicly that further relief on electricity prices will be provided to consumers in the near term.

Context – Infrastructure Investments

- In the eleven year period between 2005 and 2015, government added new electrical capacity to Ontario's grid to restore reliability, replace coal and meet environmental objectives.



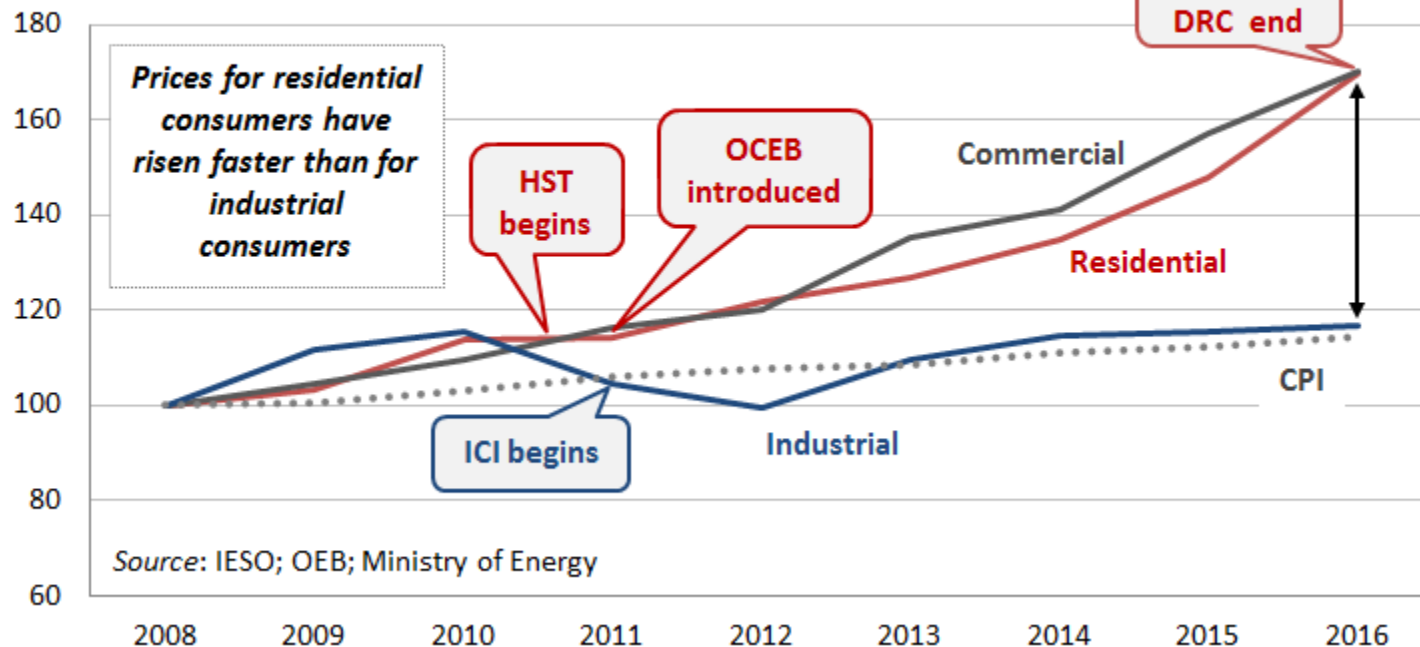
Source: IESO Ontario Planning Outlook

Context – Electricity Prices

- Electricity price increases have generally outpaced inflation. There have been several government policies that have impacted electricity prices over the past several years, including: HST, the Industrial Conservation Initiative, the Ontario Clean Energy Benefit (OCEB) and the Debt Retirement Charge (DRC).

Illustrative Electricity Prices by Customer Type

Index (2008 = 100)



Rate Mitigation Proposal

- Three options are proposed:
 - 1) Helping the most vulnerable by enhancing electricity support programs and shifting cost onto the tax-base:
 - Rural or Remote Electricity Rate Protection (RRRP) Enhancement (Delivery Charge Relief);
 - Ontario Electricity Support Program (OESP) Expansion;
 - LDC Affordability Fund; and
 - First Nations Rate.
 - 2) Ongoing activities to bend the future cost curve of electricity:
 - Ontario Energy Board (OEB) – Identify opportunities for OEB red-tape reduction and future LDC efficiencies and rates; and
 - Independent Electricity System Operator (IESO) – Modernize Ontario's electricity market through electricity Market Renewal initiatives.
 - 3) Smoothing the global adjustment (GA) to provide significant and immediate rate relief through cost deferral of the GA:
 - Implementation Model; and
 - Smoothing Mechanism.
- The following slides provide additional information on the above initiatives.

ELECTRICITY SUPPORT PROGRAMS TO HELP THE MOST VULNERABLE

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Electricity Support Programs to Help the Most Vulnerable

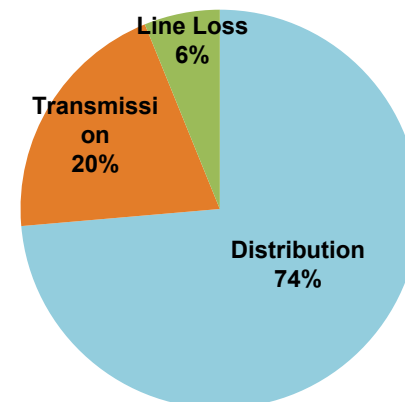
- In addition to broad electricity relief provided by the smoothing of Global Adjustment, there is opportunity to provide support to a more targeted subset of customers who are disproportionately affected by increased electricity costs.
- These customers include:
 - **High Delivery Cost Customers:** Some customers in rural areas where the cost to delivery electricity is high can experience difficulty in reducing their electricity bill through conservation, particularly when reliant on electric heating.
 - **Low-Income Customers:** Rising electricity costs make up a disproportionately large amount of the household expenditures for low-income households.
 - **First Nation On-Reserve Customers:** On-Reserve First Nations customers experience challenges with energy affordability and are seeking to address historical grievances associated with electricity system infrastructure.
- To provide targeted assistance to the customers and alleviate electricity cost burden, ENERGY proposes to:
 - a. **Enhance Rural or Remote Rate Protection (RRRP)** by funding its costs through the tax base and providing additional support to customers of designated Hydro One rate classes and other high distribution cost Local Distribution Companies (LDCs).
 - b. **Enhance Ontario Electricity Support Program (OESP)** by funding its costs through the tax base and increasing eligible benefits by 50%.
 - c. **Establish an LDC Affordability Fund**, providing energy efficiency measures at no or minimal cost to those struggling to pay electricity bills and are ineligible for low-income conservation or support programs.
 - d. **Implementing On-Reserve First Nations Delivery Credit**, to remove Delivery charges for on-reserve First Nations customers.

A. Delivery and Distribution Charge – Background

- The **Delivery** line on a typical consumer bill is specific to a consumer's Local Distribution Company (LDCs) and accounts for roughly 25-35% of the total bill before taxes.
- Delivery covers the costs of getting electricity from generating stations across the province to homes and businesses and combines three cost components of the electricity sector into one line item charge:
 - Transmission:** The costs of moving electricity across high voltage lines from generating stations to the distribution system. This cost is recovered through a variable charge that is approved by the OEB.
 - Distribution:** The costs of moving electricity from the transmission system to homes and businesses. Depending on the LDC, distribution costs makes up about 60% to 80% of the Delivery line.
 - This cost is currently recovered through both a variable charge and fixed charge, approved by the OEB. Distribution rates are moving to a fully-fixed charge over next 5 years.
 - Line Loss:** The costs to recover electricity that is lost as heat when its delivered over a power line, as well as power theft. Each LDC is assigned by the OEB a specific line-loss adjustment factor to reflect their losses particular to their assets. This factor is multiplied against the monthly electricity cost to determine the monthly cost.

SAMPLE MONTHLY BILL STATEMENT Anytown Hydro-Electric Limited	
Account Number:	000 000 000 000 0000
Meter Number:	00000000
Your Electricity Charges	
Electricity	
Off-Peak @ 8.700 ¢/kWh	41.20
Mid-Peak @ 13.200 ¢/kWh	16.35
On-Peak @ 18.00 ¢/kWh	23.60
Delivery	53.07
Regulatory Charges	
Debt Retirement Charge	4.79
	0.00
Total Electricity Charges	\$139.00
HST	18.07
8% Provincial Rebate	(11.12)
Total Amount	\$145.95

Cost breakdown of Delivery Line for an Average Residential Bill*



A. Rural or Remote Program – Background

- Rural or Remote Rate Protection (RRRP) mitigates some of the high costs of electricity distribution in rural or remote areas of the Province. It is a legacy program of the old Ontario Hydro and has existed in its current form since 2001.
 - RRRP is funded by ratepayers in Ontario.
- Part of the program helps fund the costs of Hydro One customers classified into the “R2” residential rate class. These customers have some of the highest Delivery costs in the Province.
 - From 2001-2016 the program provided \$125.4M to help defray these costs.
 - In the 2016 Speech from the Throne, this funding was expanded by \$116.4 million to a total of \$241.9 million.
 - As of Jan 2017 R2 customers receive \$60.50/month off their distribution costs.
- These customers still have high delivery and high distribution costs and are often faced with significantly higher than average bills.
 - The higher than average consumption patterns coupled with higher than average distribution rates has resulted in monthly bills that are no longer affordable.

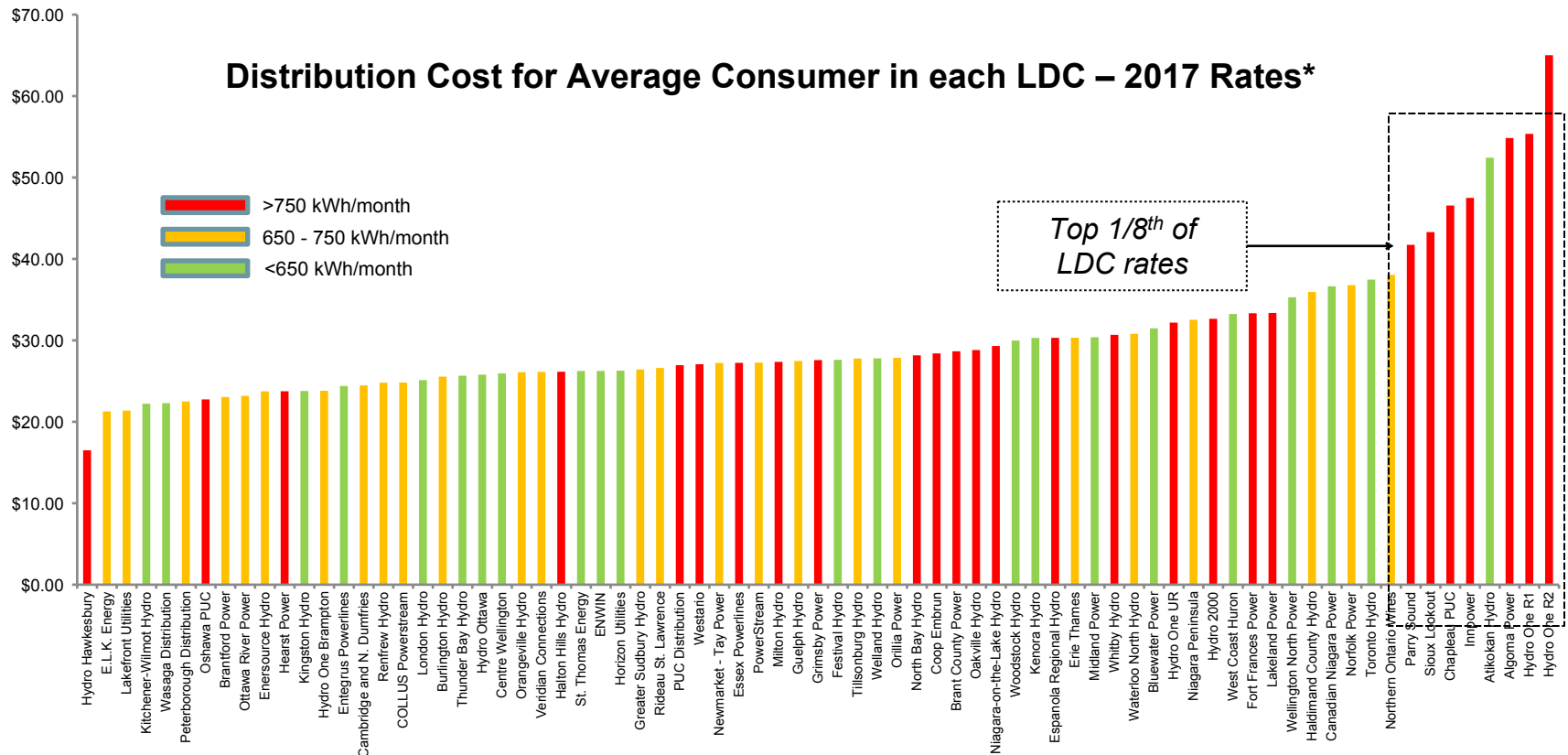


A. Enhancing the Rural or Remote Protection Program (RRRP)

- While the RRRP helps mitigate some of the higher distribution costs for Hydro One R2 customers, there is an opportunity to provide further relief to consumers in relatively high-distribution cost outlier LDCs (top ~1/8th of distribution rate classes).
 - If expanded to the top 1/8th of distribution costs, this enhancement would also include Hydro One R1 customers, as well as LDCs with high distribution costs include: Northern Ontario Wires, Lakeland Parry Sound, Chapleau, Sioux Lookout, InnPower, Atikokan and Algoma.
- Mitigation could be provided by harmonizing distribution rates for these LDCs at the lowest distribution rate paid by an average consumer in this group.
 - Based on projected 2017 LDC rates, the lowest distribution rate paid by an average consumer in this group would be ~\$38/month (with the highest being \$65).
 - Is consistent with the OEB's mandated move to fully fixed distribution rates for all LDCs.
 - An estimated 700,000 customers would benefit from these enhancements.
 - Setting a lowest distribution rate across these LDCs would help mitigate geographic-based differences in rates for the consumers who are most impacted and often see such differences as inequitable.
- Mitigation would be further provided by moving the existing RRRP program costs and the proposed enhancements from the electricity rate base to the tax-base.

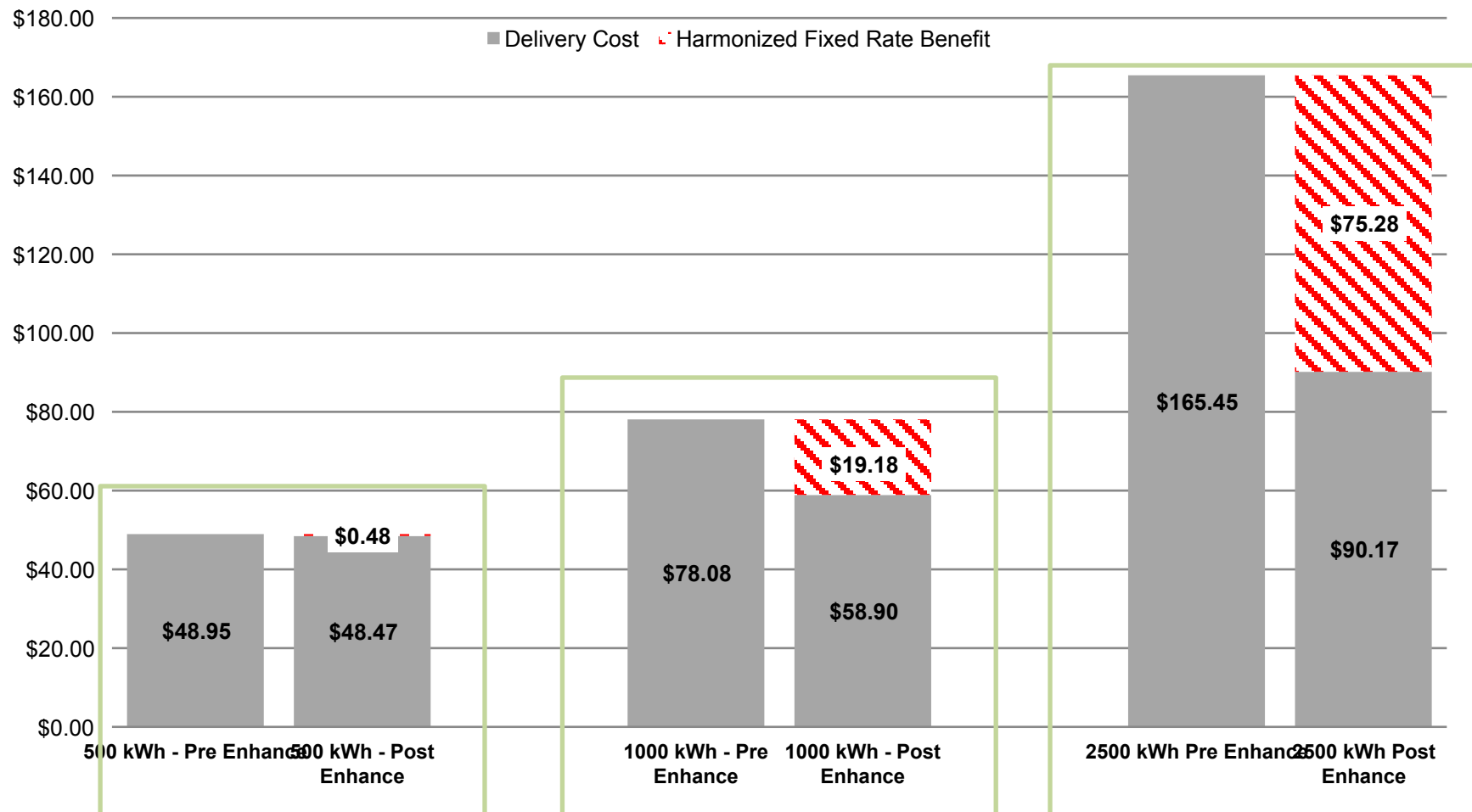
A. Enhancing the Rural or Remote Protection Program (RRRP)

- The table below shows what 2017 distribution costs are projected to be for the average consumer within each LDC across the province, and highlights the highest-cost distribution rates.
- The charts on the following slides show what the benefits would be in each LDC if the fiscal plan was used to support harmonizing distribution costs for customers of the LDCs in the top ~1/8th of rate classes at \$38/month.



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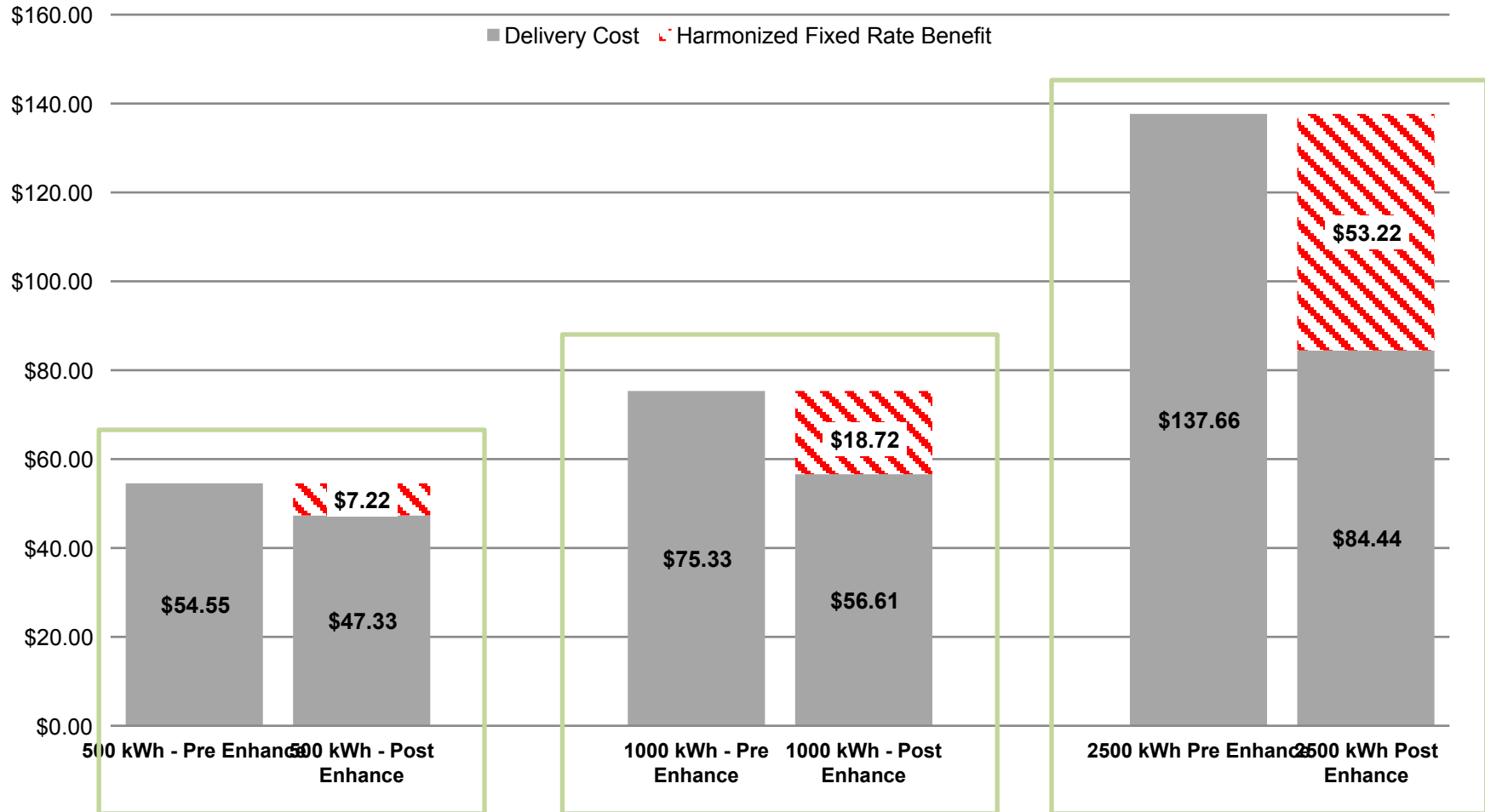
A. Harmonized Distribution Cost – Delivery Line Impact (Hydro One R2)



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Note: Rates are for 2017 (either approved or proposed)

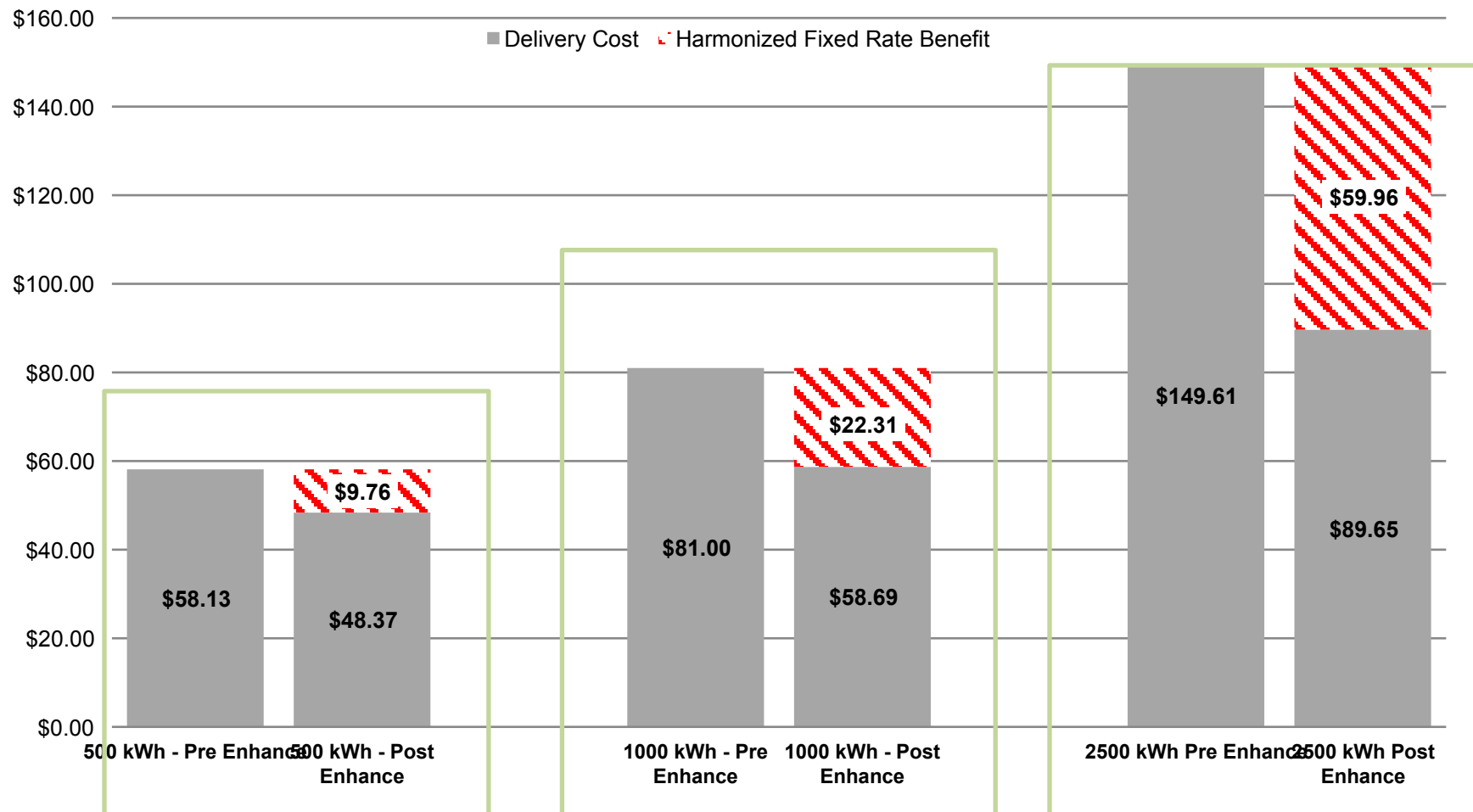
A. Harmonized Distribution Cost – Delivery Line Impact (Hydro One R1)



Note: Rates are for 2017 (either approved or proposed)

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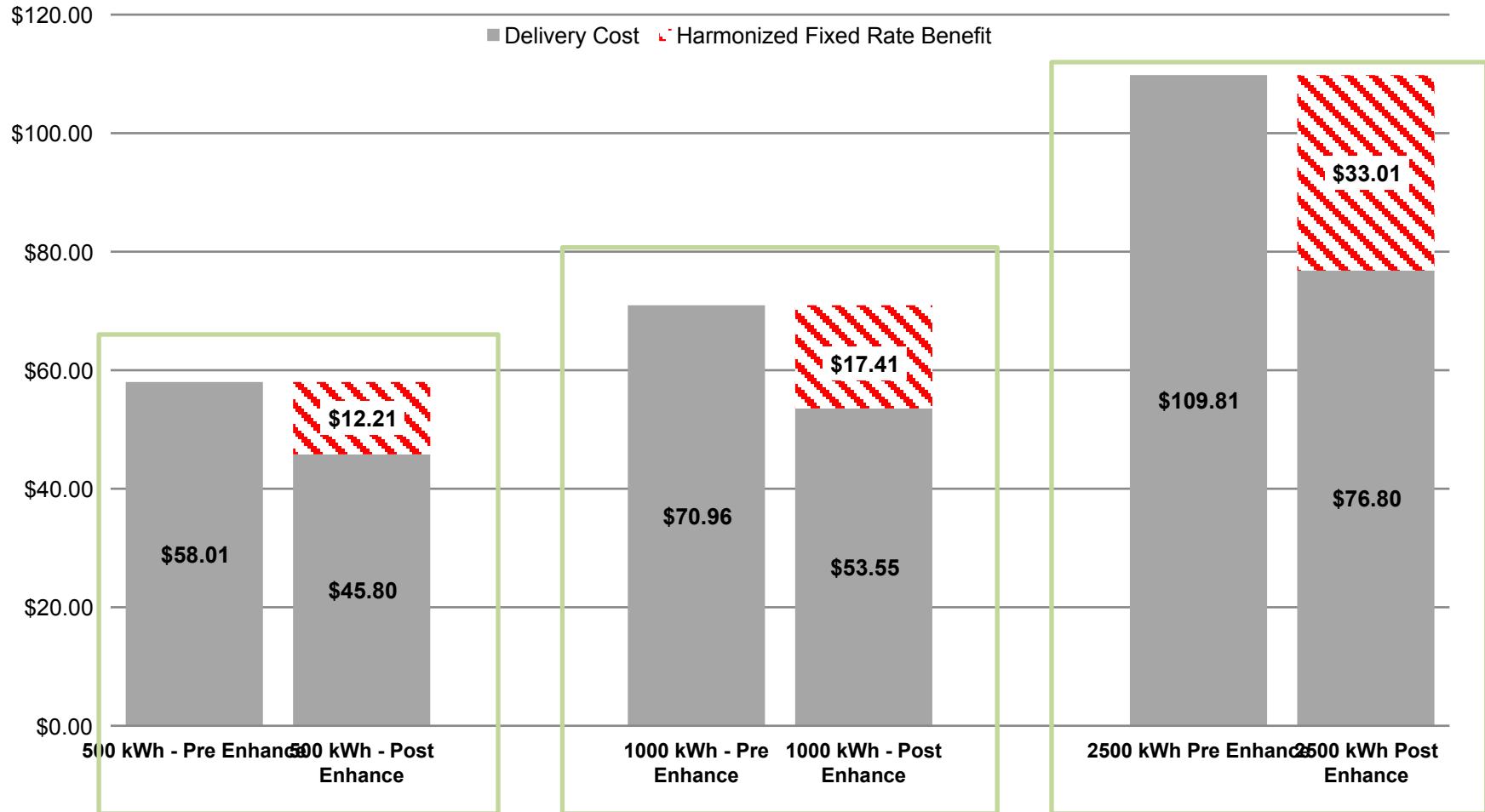
A. Harmonized Distribution Cost – Delivery Line Impact (Algoma Power)



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Note: Rates are for 2017 (either approved or proposed).
Algoma Power receives RRRP to support operational costs.

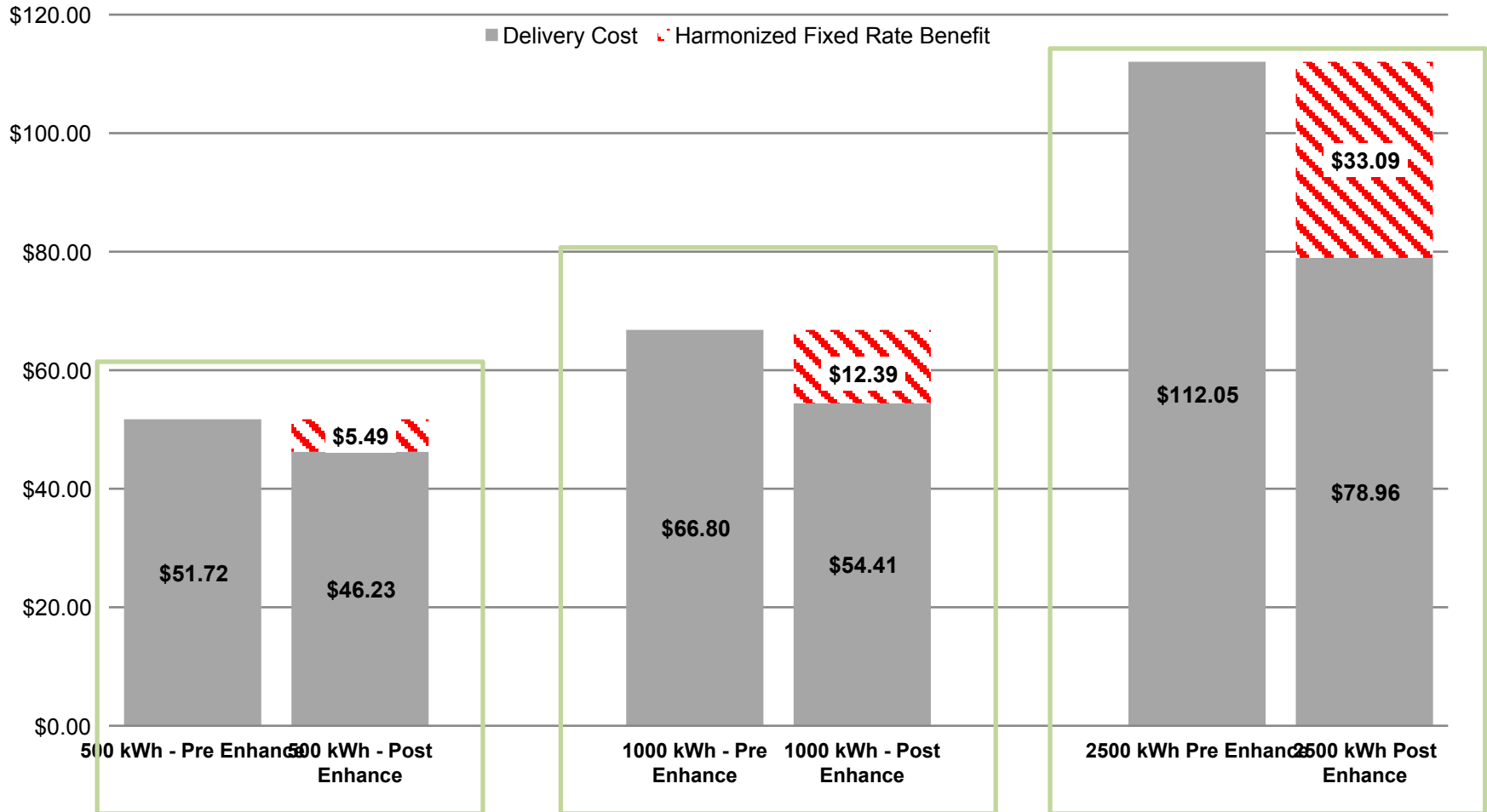
A. Harmonized Distribution Cost – Delivery Line Impact (Atikokan Hydro)



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Note: Rates are for 2017 (either approved or proposed)

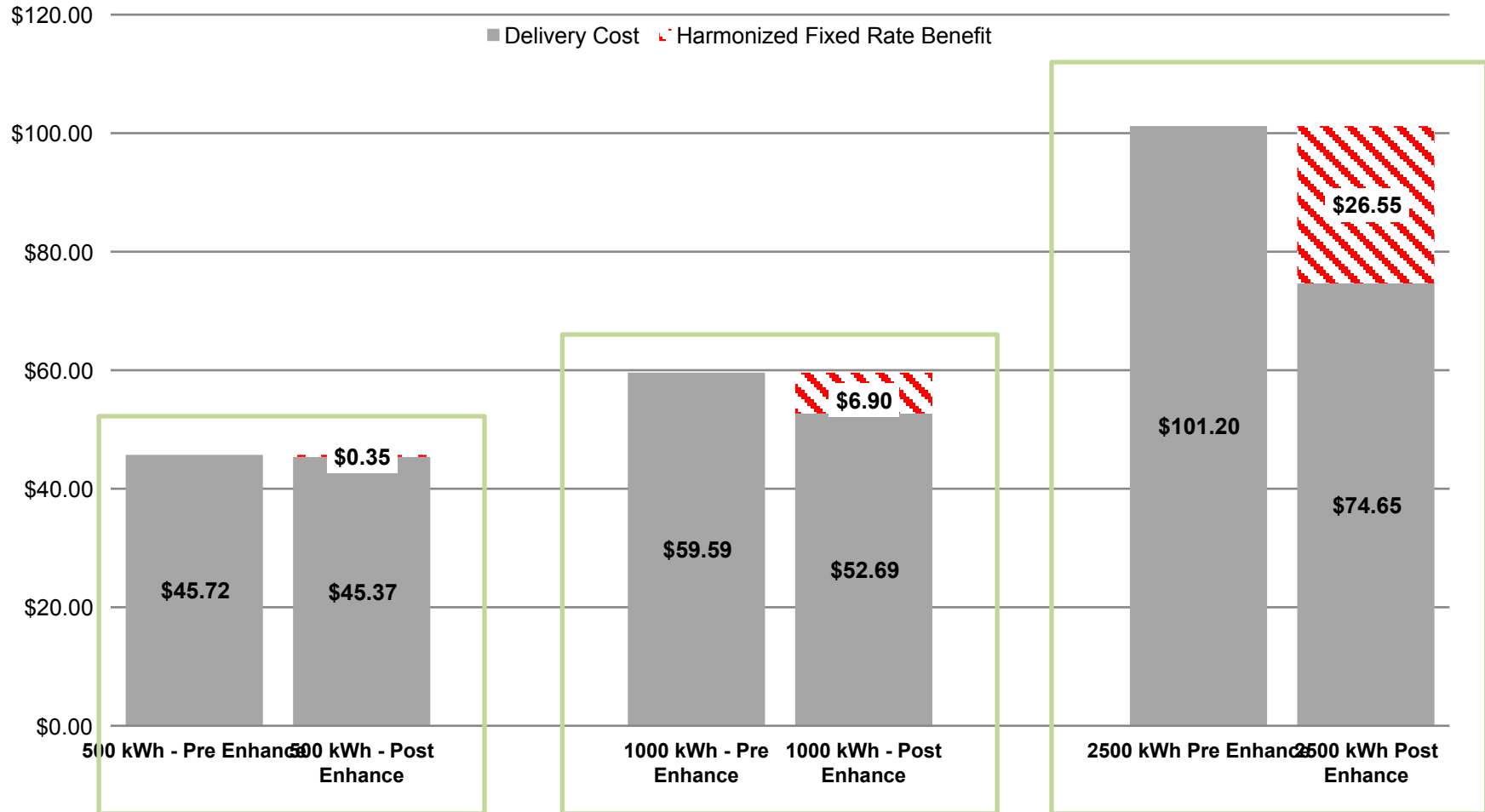
A. Harmonized Distribution Cost – Delivery Line Impact (InnPower)



Note: Rates are for 2017 (either approved or proposed)

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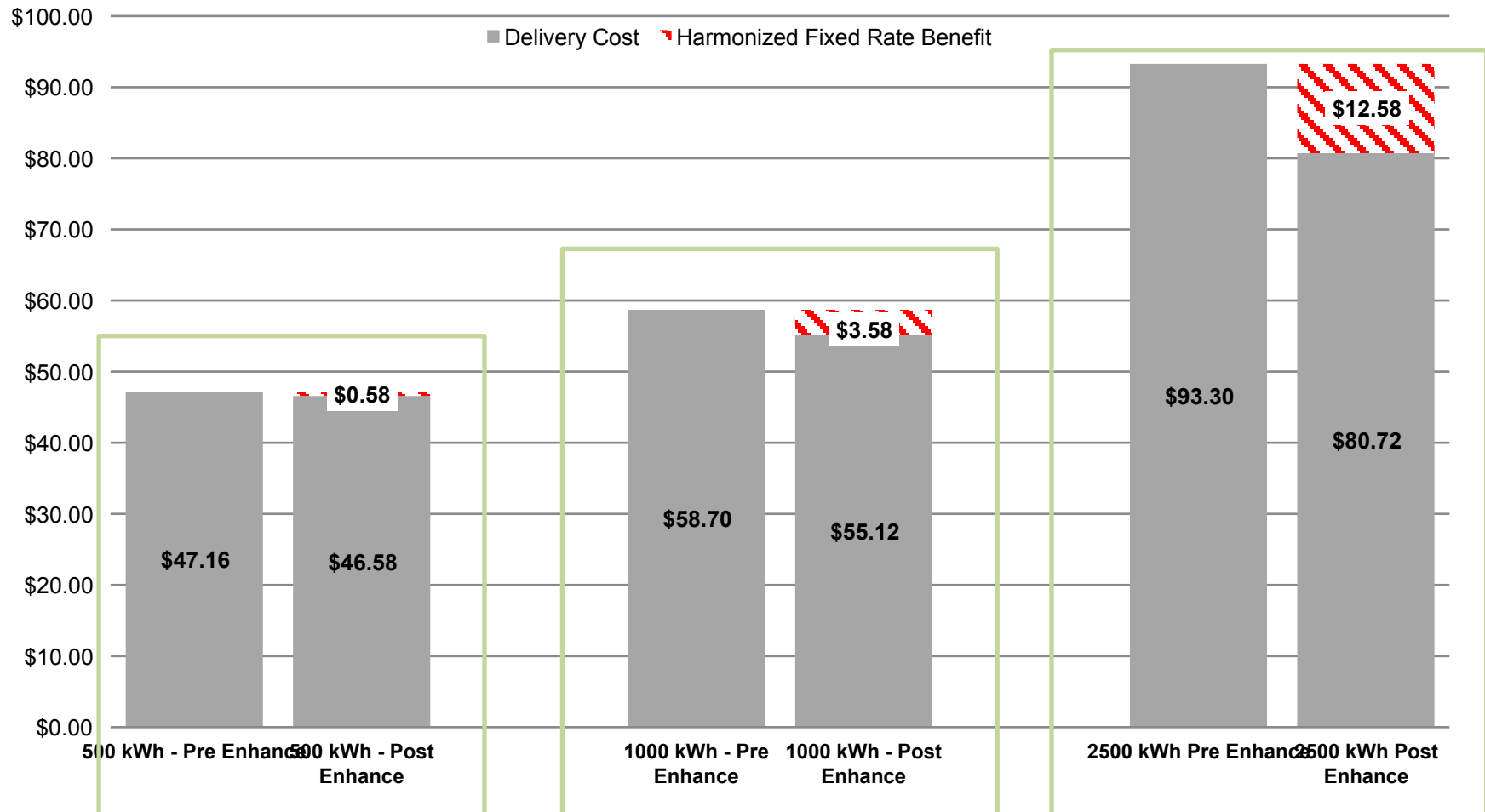
A. Harmonized Distribution Cost – Delivery Line Impact (Chapleau PUC)



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Note: Rates are for 2017 (either approved or proposed)

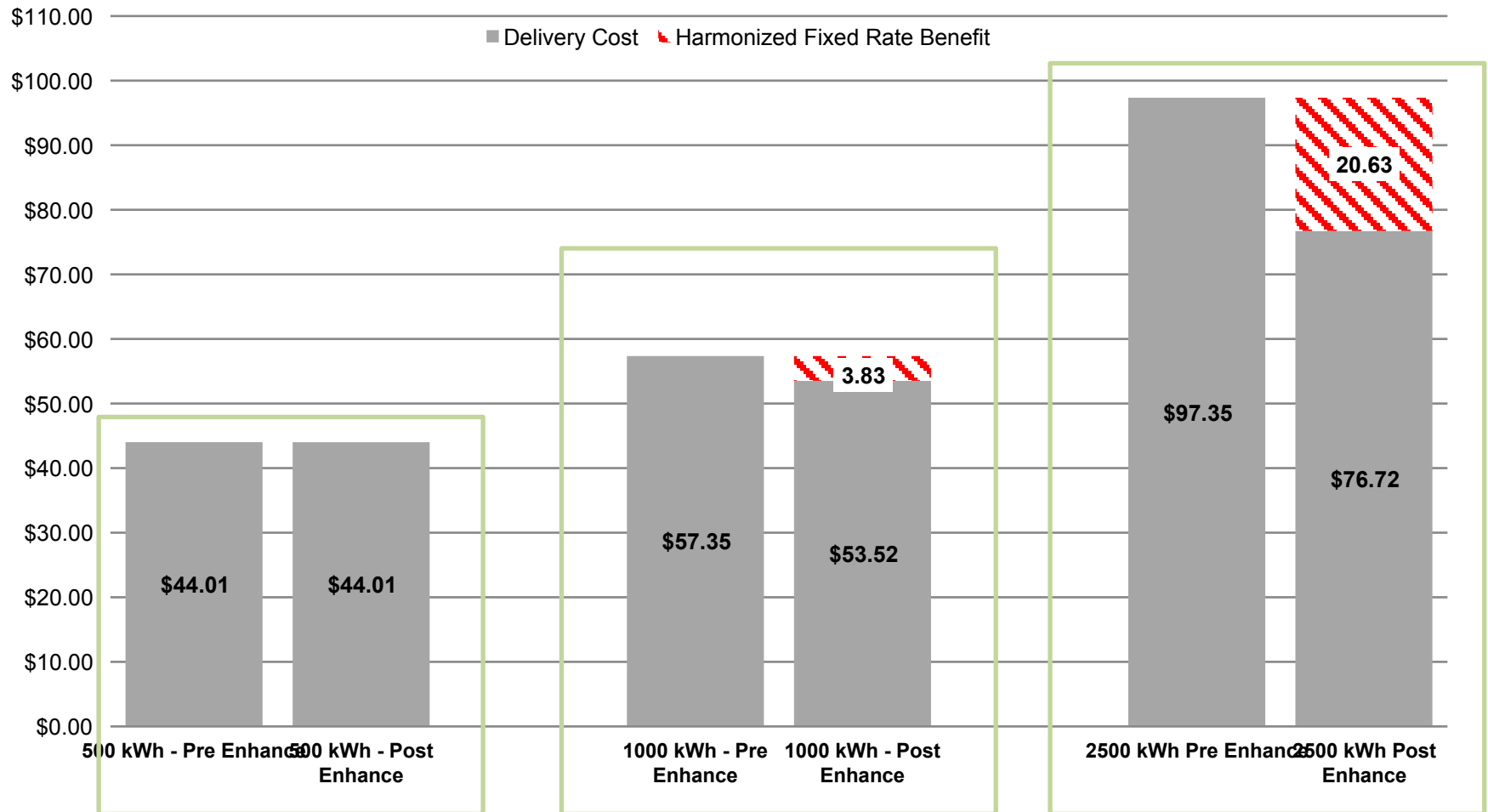
A. Harmonized Distribution Cost – Delivery Line Impact (Sioux Lookout Hydro)



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Note: Rates are for 2017 (either approved or proposed)

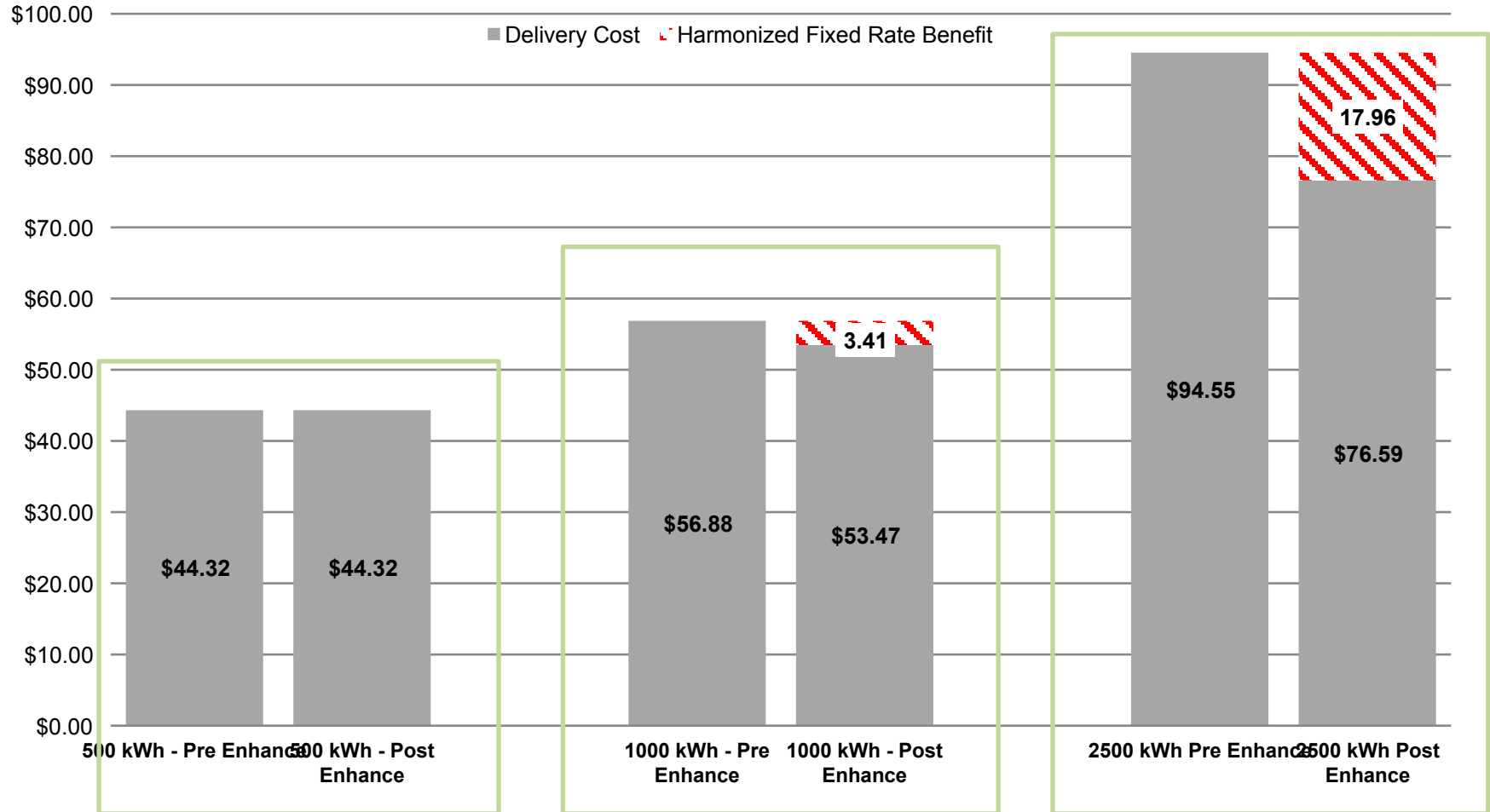
A. Harmonized Distribution Cost – Delivery Line Impact (Lakeland Power – Parry Sound)



Note: Rates are for 2017 (either approved or proposed). Rates are for the Parry Sound territory within Lakeland Power. Other Lakeland Power customers (Huntsville area) not impacted.

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A. Harmonized Distribution Cost – Delivery Line Impact (Northern Ontario Wires Inc.)



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Note: Rates are for 2017 (either approved or proposed)

A. RRRP Enhancement – Considerations

Implementation

- The Ministry will need to ensure that only the high distribution cost LDCs are captured within the program framework
 - LDCs may need to be named explicitly in the legislation/regulation
 - A mechanism would also need to be created to ensure the level of benefit changes year to year
- LDCs will need to change their billing and customer information systems. OEB estimates that the implementation would take at least 6 months or more, following finalized regulations
- New legislation would be required to establish this program. Legal and regulatory risks (particularly with regards to legal authority and to the Ontario Energy Board's role in setting rates and incenting efficiencies) require further analysis
 - Some options may impact OEB rate-setting processes and create disincentives towards Hydro One productivity and performance improvements.
- Providing a tax-based subsidy outside of exiting rate setting mechanism reduces incentives for customers and distributors to engage on operating costs and capital planning.
- A mechanism will need to be created to ensure that LDCs/OEB/IESO/Province are aligned in the year-to-year forecasting and costing of the RRRP program and the enhancements.

A. RRRP Enhancement – Considerations (cont'd)

Fiscal

- As distribution costs vary year to year, forecasting fiscal impacts are challenging.
 - Hydro One is expected to submit its cost of service application for 2018 and beyond (3-5 years) in spring 2017. The rate increases requested in this application could potentially increase the proposed fixed rate which would have significant impact on fiscal requirements and ratepayer impacts.
 - The other high distribution cost LDCs generally have lower distribution cost increases, however, it is difficult to forecast fiscally the impact of the program until LDCs submit their cost of service applications to the Ontario Energy Board.

Fiscal Impact (\$M)	16-17	17-18	18-19	19-20	20-21
Legacy Rural or Remote Rate Protection (RRRP)*	-	126	130	133	136
RRRP 2016 – Speech from the Throne Expansion*	-	117	120	123	127
Harmonizing Fixed Rates for Hydro One and High Cost LDCs**	-	211	200	190	181
TOTAL	-	454	450	446	444

***Note:** Current regulatory framework calls for RRRP to increase by average distribution rate increase. Forecast assumes 2.6% annually though is subject to OEB proceedings . Does not include Algoma Power or Hydro One Remotes which would continue to be on the ratebase.

****Note:** Funding for accelerating fixed rate benefits is completed as the move to fixed rates is accomplished over OEB timelines. Ongoing cost for harmonization continues. Cost forecasts assumes 2.6% annual rise in distribution rates; Until move to fixed rates is complete, fiscal projection is subject to consumer consumption patterns that may change due to extreme weather or other factors.

B. Ontario Electricity Support Program (OESP)

- The OESP is an income-tested, application based program that lowers electricity costs of the most vulnerable consumers by a rebate directly on bills.
- OESP benefits vary by income level and family size, and there are two benefit scales that include:
 - The basic program credit ranges from \$30/month to \$50/month.
 - An enhanced credit that ranges from \$45/month to \$75/month for consumers that are either Indigenous, use electric heat or have certain medical devices.
- The OESP launched on January 1, 2016, and in just over a year:
 - Almost 180,000 have been enrolled in the program representing 30% of the total targeted low-income population and some 278,000 applications have been received.
 - Almost \$50 million in benefits have been provided to vulnerable consumers.
 - Some 172 intake agencies have been mobilized to assist low income consumers to apply for the OESP.
- To drive this uptake, the OEB has engaged in extensive outreach, including advertising in multiple languages, and continuing to work with partner agencies to develop a model for “application clinics” across the province to increase program awareness and uptake across the province.



B. Ontario Electricity Support Program (OESP) (cont'd)

- There are a number of ways that the OESP program can be enhanced, including:
 - Working to get the OESP participation as close as possible to 100%:
 - Streamlining the application process to make it easier / quicker to get through (e.g., an alternative to the requirement to mail-in signed consent forms);
 - Putting in place a more aggressive communications strategy to make sure vulnerable communities are aware of the program; and
 - Exploring automatic OESP qualification for those who receive provincial programs (e.g., OW, ODSP).
 - Increasing the existing benefit scales by an additional 50% (see the following slide for details on what this enhancement would do).
- It is also recommended that the OESP be supported from the tax base as part of the rate mitigation package.

B. Ontario Electricity Support Program (OESP) (cont'd)

- The tables below outline the existing OESP benefit scales and how the scales would be enhanced if increased by 50%:

Existing OESP Benefit Scales



Proposed +50% OESP Benefit Increase

Sliding Scale #1		Household Size						
		!	2	3	4	5	6	7 +
Income Bracket	< \$28,000	\$30	\$30	\$34	\$38	\$42	\$50	\$50
	\$28,001 - \$39,000	-	-	\$30	\$34	\$38	\$42	\$50
	\$39,001 - \$48,000	-	-	-	-	\$30	\$34	\$38
	\$48,001 - \$52,000	-	-	-	-	-	-	\$30

Sliding Scale #2		Household Size						
		!	2	3	4	5	6	7 +
Income Bracket	< \$28,000	\$45	\$45	\$50	\$55	\$60	\$75	\$75
	\$28,001 - \$39,000	-	-	\$45	\$50	\$55	\$60	\$75
	\$39,001 - \$48,000	-	-	-	-	\$45	\$50	\$55
	\$48,001 - \$52,000	-	-	-	-	-	-	\$45

Sliding Scale #1		Household Size						
		!	2	3	4	5	6	7 +
Income Bracket	< \$28,000	\$45	\$45	\$51	\$57	\$63	\$75	\$75
	\$28,001 - \$39,000	-	-	\$45	\$51	\$57	\$63	\$75
	\$39,001 - \$48,000	-	-	-	-	\$45	\$51	\$57
	\$48,001 - \$52,000	-	-	-	-	-	-	\$45

Sliding Scale #2		Household Size						
		!	2	3	4	5	6	7 +
Income Bracket	< \$28,000	\$68	\$68	\$75	\$83	\$90	\$113	\$113
	\$28,001 - \$39,000	-	-	\$68	\$75	\$83	\$90	\$113
	\$39,001 - \$48,000	-	-	-	-	\$68	\$75	\$83
	\$48,001 - \$52,000	-	-	-	-	-	-	\$68

B. Ontario Electricity Support Program (OESP) – Considerations

Fiscal Impact

- Changes to legislation / regulation may be required to establish and define the parameters for OESP to receive funding from the tax-bas. The scope of changes would depend on the implementation / delivery mechanisms. -
- Financial flow-through mechanisms would need to be considered in consultation with IESO and LDCs. Likely to be modeled after processes used for the Ontario Rebate for Electricity Consumers (OREC).
- The OEB has been collecting program funding in excess of program costs and has accrued a positive balance. This balance must be addressed when moving to the tax base.
- If OESP amounts are increased, it will need to be confirmed that the credit is not treated as taxable income. This was addressed in the current iteration of the OESP.

Fiscal Impact (\$M)	16-17	17-18	18-19	19-20	20-21
Ontario Electricity Support Program, including the 50% Enhancement	-	178	239	290	334

C. Establishing a New LDC Affordability Fund

- For eligible low-income customers, the Home Assistance Program (HAP), delivered by LDCs under the Conservation First Framework, provides efficiency upgrades and education, at no cost, to help improve the energy efficiency and comfort of their homes and help customers manage their electricity bills.
 - Unlike others, low-income customers do not have money available to make upfront investments to improve the energy efficiency of their homes. Conservation programs typically provide incentives that cover only a portion of the incremental cost of the more energy efficient measure, requiring an upfront investment by customers.
- HAP does not address the needs of those customers that have difficulty paying their electricity bills ~~are struggling~~ and do not qualify as “low-income”.
 - At the end of 2015, there were over 560,000 residential electricity accounts in arrears; of these about 19,900 (~3.6%) accounts were eligible to participate in low-income conservation and support programs.
 - According to the Ontario Energy Board, in 2015 about 60,000 customers had their electricity service disconnected.
- Other low-income financial assistance and conservation programs delivered by utilities include: OESP, Low Income Energy Assistance Program (LEAP) Emergency Financial Assistance, weatherization programs delivered by gas utilities (see Appendix for more details).

Proposal: Establish Affordability Fund to Provide Existing Low-Income Conservation Program to Other Electricity Customers

- The Ministry proposes establishing an Affordability Fund which would be available to LDCs to provide similar energy efficiency measures as provided under HAP to targeted customers.
- The Affordability Fund would not be used to provide grants or financial assistance to customers to forgive all or a portion of their arrears or electricity bill.

C. Establishing a New LDC Affordability Fund

Fund Details:

- An Affordability Fund would be accessible to LDCs only, and would target those customers who are most in need, such as those who are facing disconnection and who cannot qualify for the low-income programs.
 - By providing support for energy efficiency improvements, the Fund could help these customers get back on track with their bills and also save on disconnection costs; and
 - The Fund would provide LDCs with a degree of flexibility and would be an additional tool to provide assistance to their customers.

Eligibility Criteria/Fund Principles:

- Determination of eligibility could involve a number of factors and metrics:
 - Do not meet the definition of “low-income”
 - May have triggered action by an LDC collection department (e.g., are in arrears, have been placed on one or more payment plans, are due to be disconnected, etc.).
 - Priority could be given to eligible customers in electrically-heated homes, or other unique circumstances.
 - Require financial assistance to pay for energy efficiency measures.

C. Establishing a New LDC Affordability Fund

Implementation

- The LDC Affordability Fund would represent a fiscal impact of \$200 million in FY 2016/17.
- To allow for funds to flow in FY 2016/17, ENERGY would sign a Transfer Payment Agreement (TPA) with one or several LDCs to administer the Fund.
- ENERGY is currently in discussions with several large LDCs to determine the feasibility of establishing a Fund and to identify a willing funding partner(s).
 - LDCs have over 10 years of experience in delivering conservation programs, including experience specific to contracting for programs that target low-income customers.
 - LDCs are best positioned to identify and target their customers who are most in need.
- Given the scope of the Fund, an LDC would need a firm financial commitment up front before implementation. LDCs rely on rate-payer funding for most of their activities. The Affordability Fund would be a unique venture from an LDC perspective given that it is tax funded.
- LDCs would apply for funding to the Fund administrator, to offer energy efficiency measures to those customers that meet the targeted eligibility criteria.
 - Recipients could receive measures ranging from \$3,000 to \$5,000 per customer, at no or minimal cost. For example, measures available in the Home Assistance Program include:
 - Energy-saving light bulbs (LEDs); power bars; energy efficient window ACs, refrigerators, freezers, dehumidifiers; low-flow showerheads, hot water blankets, pipe wrap and faucet aerators (in homes with electric water heating); and
 - Programmable thermostats, weather stripping, insulation (in homes with electric heating).
 - Consideration could also be given to including cold climate air source heat pumps for electrically heated homes, which can range in cost from \$7,000 to \$13,000.
 - As an illustration, with \$200 million, the estimated reach of the fund could be 15,000 to 65,000 households, depending on measures and uptake.

C. Establishing a New LDC Affordability Fund

Considerations

- Determining allocation of funds to LDCs
 - Some LDCs may have a disproportionate number of customers in need of assistance
 - ENERGY is proposing to establish a Working Group, including the OEB, LDCs and potentially low income organizations to help develop funding criteria and allocation.
- The LDC Affordability Fund addresses a real need
 - LDCs have expressed the need for an additional tool to provide assistance to their customers.
- LDCs need flexibility to target customers:
 - Not all customers who are in need will actively seek help
 - Some customers in arrears may be “gaming the system” and not truly in need.
 - LDCs recommend targeted outreach as opposed to broad marketing.
 - A high volume of applications would limit the ability to deliver assistance to customers who need it most.

Funding Conservation Programs Through the GGRA

- Propose to fund 2017-2020 electricity conservation and demand management program costs* using Greenhouse Gas Reduction Account (GGRA) funds instead of ratepayer dollars.

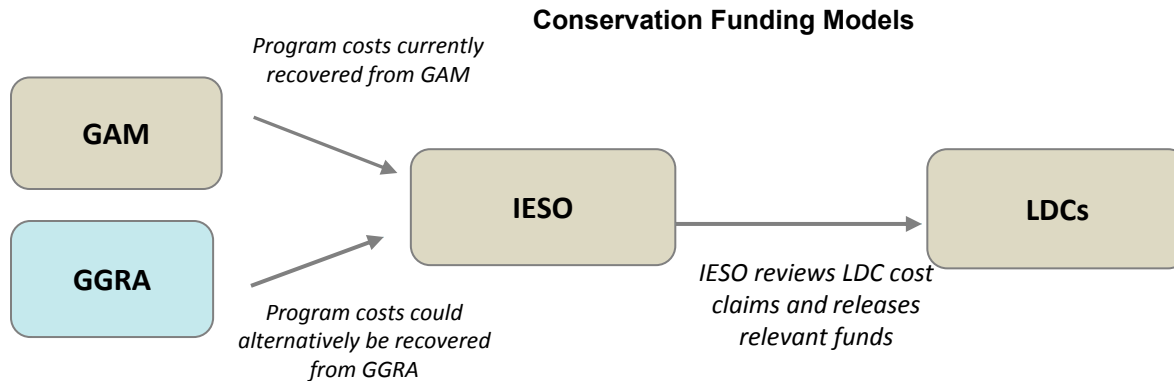


Table X: Electricity Conservation Programs- Costs (\$ Millions)

2017	2018	2019	2020	2017-2020 Total
605	653	527	546	2,331

Considerations

- The October 2015 Climate Change Strategy Cabinet Minute (Minute 5.F) states that “Existing commitments that were made primarily for purposes other than reducing carbon emissions, but where GHG reduction co-benefits exist, may be considered for funding using regulatory proceeds provided the reductions are in addition to those included in Ontario’s 2014 emission forecast.”
 - The Minister of Energy issued directions and a directive to the IESO and OEB in 2014 to establish the Conservation First Framework and Industrial Accelerator Program. The CFF and IAP were incorporated into the 2013 LTEP supply/demand forecast and MOECC’s 2014 emission forecast.
 - The Crown Law Office at the Ministry of Attorney General is currently reviewing the legal viability of using GGRA funds towards planned 2017-2020 conservation programs.

Funding Conservation Programs Through the GGRA

Considerations (cont'd)

- The table below outlines expected consumer impact as a result of funding conservation programs through the GGRA.

Table X: Alternate Funding of Conservation Programs- Consumer Impact**

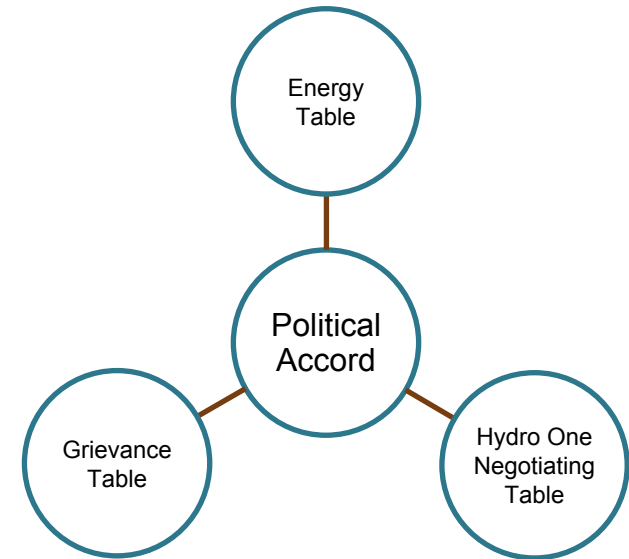
<i>Customer Type</i>	2017	2018	2019	2020
Typical Residential Electricity Consumers (\$/750 kWh)	3.47	3.83	3.17	3.35
Average Industrial Electricity Consumers (\$/MWh)	2.88	3.17	2.66	2.77

***Funding of conservation programs through the GGRA will provide similar benefits to non-RPP Class B electricity consumers.*

- Electricity conservation programs provide a number of benefits to society, however, Ontario's ratepayers have been covering these costs:
 - Avoiding/deferring future energy infrastructure investments and reducing disruption in communities (e.g. avoiding the need to build new gas plants)
 - Environmental benefits (e.g. reduced natural gas peaking generation and GHG emissions)
 - Social and economic benefits (e.g. job creation and assistance managing electricity bills).
- Electricity conservation programs between 2015 and 2020 are expected to result in 1.3 Mt of GHG reduction in 2020, equivalent to taking 300,000 cars off the road in that year.
- There is precedent for using non-ratepayer dollars to fund conservation programs.
 - Between 2007 and 2011, Ontario funded the Home Energy Savings retrofit program using tax dollars.

D. Implementing On-Reserve First Nations Delivery Credit

- ENERGY has a number of Tables with the Chiefs of Ontario (COO) and First Nations that include the Energy Table to discuss policy issues, the Hydro One Negotiating Table to discuss Hydro One shares, and the Grievance Table
- The Grievance Table process was established at the request of COO as a means to avoid litigation to resolve historic grievances related to the energy sector and prevent these issues from impeding progress in negotiations for First Nation ownership of Hydro One shares
- The cost of electricity and delivery charges were identified as the prevailing grievance at the First Nations-Ontario Energy Table meeting in Timmins on XX, 2016, and the Minister of Energy agreed to explore options for a First Nations Rate through the Grievance Table process
- In June 2016, following discussions on Hydro One shares and rates at COO's All Chiefs Conference, the Minister of Energy issued a letter directing the OEB to prepare a report providing *"advice on options for an appropriate electricity rate (or rate assistance) for on-reserve First Nations electricity consumers"*
 - OEB engaged with First Nations, including remote communities, the distributors serving them, and consumer groups such as the Low Income Energy Network. It also established an Advisory Committee with the Chiefs of Ontario's Grievance Committee
- The Ontario Energy Board (OEB) has worked with COO to engage with First Nations to develop options for a First Nations electricity rate. The OEB provided a report to the Minister on December 29, 2016



D. Implementing On-Reserve First Nations Delivery Credit (cont'd)

- On-reserve First Nations customers face unique challenges that impact electricity affordability, such as the poor quality of the housing stock on-reserve. These challenges result in significantly higher electricity consumption levels and costs.
- First Nations living on reserve are particularly vulnerable low-income consumers: the average income is considerably lower compared to First Nations living off reserve and compared to non-Indigenous populations:
 - Average income of First Nations on reserve in Ontario: \$21,100;
 - Average income of First Nations off reserve in Ontario: \$31,527;
 - Average income of Non-Indigenous people in Ontario: \$42,506; and
 - Median incomes on smaller reserves can fall below \$10,000 (e.g., Cat Lake FN).
- Employment rates also differ between on-reserve First Nations, off-reserve First Nations and Non-Indigenous individuals, as well as other indices of social vulnerability:
 - 54% of Indigenous people over 15 years old and living on-reserve in Ontario are unemployed or not in the labour force;
 - The on-reserve unemployment rate is 18.3% compared to 6.4% in Ontario generally; and
 - 67% of families residing on-reserve are single parent families, compared to the Canadian equivalent of 19 %.
- First Nations are seeking redress for historic grievances related to lands affected by energy developments, such as transmission or distribution infrastructure built on reserve lands and traditional territories where, in some cases, they may not have been appropriately consulted.
- Further, in some circumstances, linear infrastructure corridors cut First Nation reserves in half, significantly disturbing the use and management of an already small land base; the First Nation communities disturbed by the energy infrastructure report having experienced long wait times (e.g., 20 years) for their communities to get connected and receive the benefits of the energy derived from the local infrastructure.

D. Implementing On-Reserve First Nations Delivery Credit (cont'd)

- The OEB report to the Minister of Energy on a First Nation on-reserve rate recommended:
 - Eliminate the delivery charge for all on-reserve First Nations residential customers and eliminate the monthly service charge for customers of licensed distributors which charge a bundled rate;
 - The OEB estimates this would provide residential customers an average monthly benefit of \$85 at a total annual cost of \$13 to \$20 million or 11 cents a month for a typical residential electricity consumer.
 - Automatically qualify on-reserve First Nations residential customers (~21,500 customers);
 - Enable greater information sharing between distributors and band councils to identify all on-reserve First Nations customers; and
 - Continue to provide assistance through OESP and LEAP to eligible on-reserve First Nations customers.
- The OEB suggested the program should be funded from the tax base as it is targeted to a particular segment of the provincial population, or, if rate based, to use a province-wide charge
- ENERGY recommends moving forward with the implementation of the OEB's recommendations as part of the wider electricity rate relief package and as the Hydro One share agreement with COO continues to be implemented

D. Implementing On-Reserve First Nations Delivery Credit – Considerations

- Legislative and regulatory will be required to implement this program.
- The OEB will need to work with the LDCs to identify on-reserve consumers to administer the delivery rebate.
- Development of a communications plan containing the following elements:
 - Public release of the OEB report;
 - Commitment to working with LDCs on implementation details; and
 - Advanced notice to the OEB and COO regarding the ministry's decision to move forward on the OEB's recommendation and indicate a willingness to work collaboratively with COO on ways in improve community-LDC communication to ease implementation.
- The rebate will appear on customer's electricity bills, either as a specific line item or a communicated call-out
- Recipients would continue to be eligible for programs such as the Ontario Electricity Support Program (OESP) and the Low-Income Electricity Assistance Program (LEAP)

Distributor	Number of On-Reserve Residential Customers
Algoma Power Inc.	473
Attawapiskat Power Corporation	336
Bluewater Power Distribution Corporation	237
Cat Lake Power Utility Ltd.	80
Cornwall Electric Distribution	514
Hydro One Networks Inc.	16,679
Hydro One Remote Communities Inc.	2,579
PUC Distribution Inc. (Sault Ste. Marie)	264
Thunder Bay Hydro Electricity Distribution	332
Total Number of Customers	21,494

Source: OEB Report to Minister: Options for an Appropriate Rate Assistance Program for On-Reserve First Nations Electricity Consumers (Page 5).

Fiscal Impact (\$M)	16-17	17-18	18-19	19-20	20-21
First Nation Rate	-	20	20	20	20

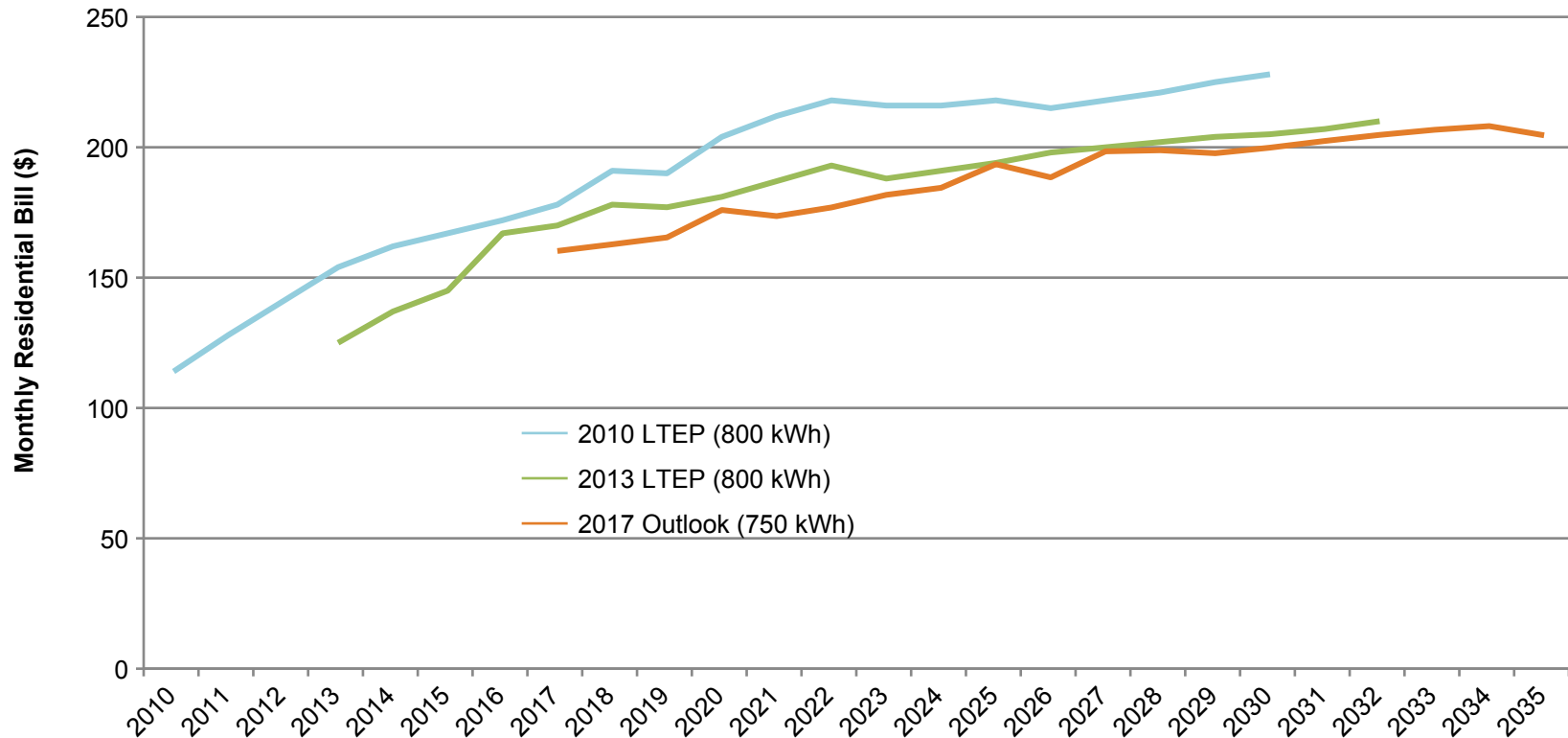
BENDING THE FUTURE COST CURVE OF ELECTRICITY

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Existing Rate Mitigation Actions To Bend The Cost Curve

- Since 2013, the government has taken a number of actions to reduce electricity ratepayer costs, including:
 - Renegotiating the Green Energy Investment Agreement to reduce contract costs by \$3.7 billion.
 - Reducing Feed-In Tariff (FIT) prices saving ratepayers at least \$1.9 billion.
 - Introducing a competitive Large Renewable Procurement (LRP) process to drive down costs approximately \$1.5 billion lower than the 2013 LTEP forecast.
 - Suspending the second round of the LRP process and the Energy-from-Waste Standard Offer Program, which is expected to save up to \$3.8 billion in costs.
 - Deferring the construction of two new nuclear reactors at Darlington, avoiding an estimated \$15 billion in new construction costs.
 - Maximizing the value of our existing nuclear fleet by starting Bruce refurbishments in 2020 instead of 2016, thus helping to achieve \$1.7 billion in savings and by continuing to operate Pickering up to 2024, pending regulatory approvals, which could save ratepayers about \$600 million.

Existing Rate Mitigation Actions To Bend The Cost Curve



Sources: 2010 LTEP (800 kWh/month); 2013 LTEP (800 kWh/month); Revised Ontario Planning Outlook (750 kWh/month as of December 2016).

A. OEB – Red-Tape Reductions / LDC Efficiencies and Rates

Leveraging the OEB

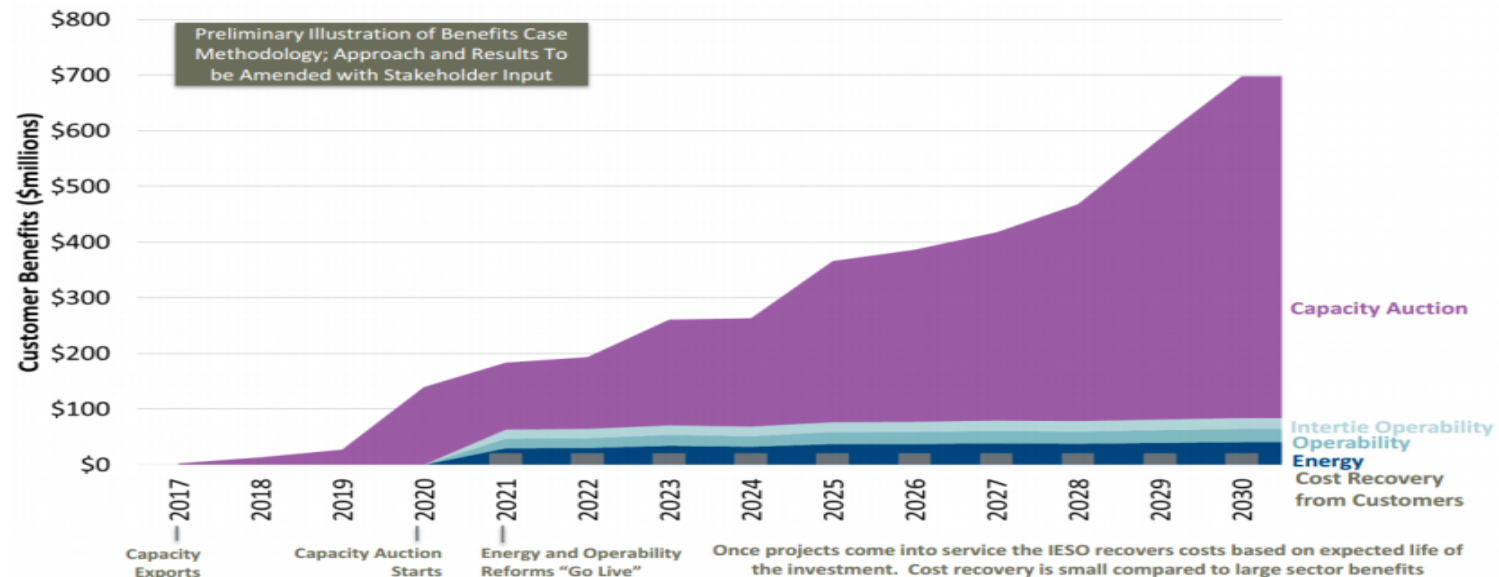
- The Ontario Energy Board (OEB) has a mandate to regulate the electricity distribution sector in the public interest, ensuring the financial viability of the sector while promoting reliable service to customers at just and reasonable rates.
- The OEB, through the Renewed Regulatory Framework for Energy (RRFE), has since 2012 attempted to move the distribution sector towards a performance/outcomes-based regulatory framework.
 - While new reporting requirements such as the LDC performance scorecard are positive developments, RRFE does not tie these system performance expectations to LDC financial performance.
- Encouraging shared partnerships on services between utilities will help reduce costs in the back end and encourage further innovation for small to medium sized utilities.
- In 2012, the government asked the Ontario Distribution Sector Review Panel to make recommendations about how the distribution sector could become more efficient. The Panel concluded that a \$1.2 billion net present value in savings could be achieved by consolidating LDCs into 8-12 regional entities.

Opportunities

- ENERGY could help promote and accelerate these efforts by asking the OEB to look at opportunities to further drive LDC efficiencies and productivity. This may indirectly incent LDC consolidation.
- In parallel, the OEB could be instructed to review business cases behind its own regulatory requirements to reduce “red tape” and eliminate costs that LDCs indicate are creating pressures on operating expenses.
- This could be done through the Minister's letter, the LTEP Implementation Directive, s. 35 of the *Ontario Energy Board Act, 1998*, and/or the 2017 Mandate Letter and other agency business planning processes.

B. IESO – Market Renewal

- Continue to move forward with Independent Electricity System Operator's (IESO) Market Renewal initiatives
 - Moving to "technology-agnostic" procurements will provide new opportunities for innovation and modernization and ensure ratepayers receive the best prices possible.
 - 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. There will be up front capital costs to enable the initiative. IESO is currently assessing these costs.
- Changes related to IESO's Market Renewal initiatives, reflected in HOEP and uplifts, are estimated to save up to \$300 million per year, starting in 2021, leading to a reduction of:
 - About \$1/month or less than 1% at current retail prices for a typical residential bill; and
 - About \$1.30/MWh at current all-in prices for industrial and SME electricity consumers.



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GLOBAL ADJUSTMENT (GA) SMOOTHING

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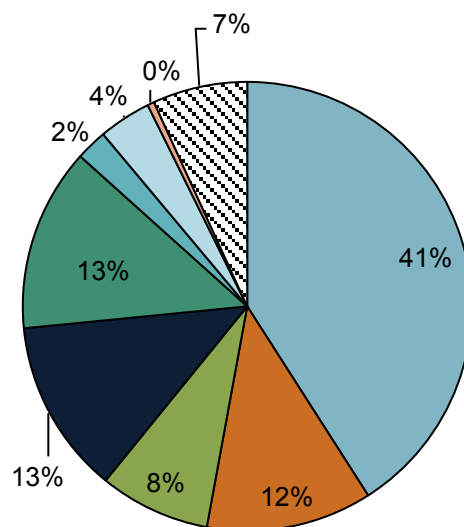
Overview – GA Smoothing

- The Global Adjustment (GA) has risen over the past decade as the province's electricity system has decarbonized.
 - The vast majority of GA costs now stem from greenhouse gas (GHG) emissions-free renewable and nuclear generation facilities, as well as natural gas plants that were constructed to restore system reliability and replace coal-fired capacity.
 - The GA recovers the fixed costs of running the province's generation fleet, as well as the cost of conservation programs.
- The majority of the province's electricity generators are under 20-year contracts. Some of these generators will continue to provide value to the electricity system beyond their contract lives (i.e., beyond 20 years).
 - There is an opportunity to recognize the long-term benefit of these assets to the electricity system and “bring forward” that benefit for ratepayers today by deferring some of the current costs.
 - GA Smoothing would spread these costs over a longer period and provide immediate ratepayer relief (i.e., similar to re-financing a mortgage). By recognizing that generation assets are expected to continue to provide residual benefit to future ratepayers, beyond the term of current contracts, future ratepayers are expected to be able to utilize these assets and reduce the need to finance the development of new generation assets.
- The GA Smoothing options under consideration show potential rate mitigation measures to meet a targeted 25% and 20% reduction from the projected residential bill in 2017.
 - These residential impacts are based on a forecast for a household connected to Toronto Hydro that consumes 750 kWh per month.
 - Actual ratepayer savings would vary due to differences in consumption patterns.

GA Smoothing – Cost Breakout

- The Global Adjustment (GA) accounts for the fixed costs, including capital costs, of running Ontario's generation fleet, as well as the cost of conservation programs. The GA is instrumental in maintaining a reliable electricity system by ensuring that sufficient generating capacity is available.
- Chart below shows the breakout of the GA by generator and program types. In 2016, the GA costs were \$12.3 billion. These costs will evolve over time as 2,181 MW of previously contracted generation comes online in the coming years.

2016 GA Cost: \$12.3 billion



Nuclear
Hydro
Natural Gas
Wind
Solar
Biomass, Landfill and Byproduct
Conservation
IEI Program
OEFC*

GA (\$M)	
Nuclear	5,053
Hydro	1,473
Natural Gas	985
Wind	1,552
Solar	1,630
Biomass, Landfill and Byproduct	278
Conservation	467
IEI Program	60
OEFC*	842

*OEFC indicates the cost of generator contracts managed by the OEFC which include contracts for natural gas, hydro and biomass generators .

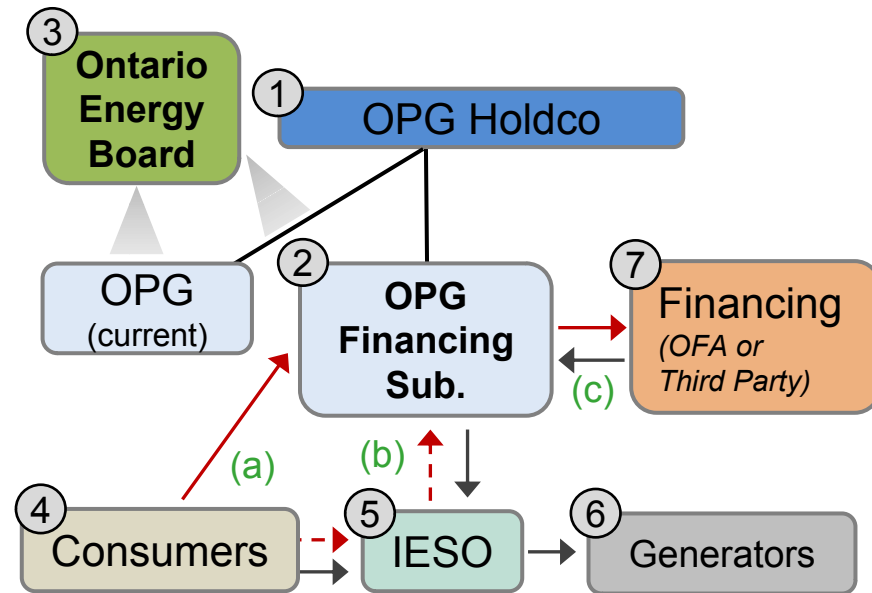
** Conservation measures, not quantified here, serve to reduce Ontario energy demand. Actual electricity generation would be larger than 155 TWh in the absence of conservation programs.

A. GA Smoothing – Implementation

- The Province continues to consider mechanisms to finance and administer GA smoothing. The leading option under consideration is to allow Ontario Power Generation (OPG) to assume responsibility for GA smoothing.
 - The Independent Electricity System Operator (IESO) is also under review as a back-up in the event OPG is not viable.
 - Other options have been considered, including creation of a new special purpose entity, independent from the Province that would be dedicated to GA smoothing.
- OPG is potentially positioned to administer GA Smoothing for the following reasons:
 - OPG represents about one-third of GA costs and should have a role in smoothing. It is also well placed to forecast future GA expenses;
 - Currently, jointly managing \$18 billion nuclear fund, therefore has infrastructure and expertise;
 - Regulated by OEB and OPG has experience with regulatory deferral and variance accounts; and
 - OPG borrows from Province, and from 3rd parties, allowing to access low cost financing.

A. GA Smoothing – OPG Model

- The diagram outlines a implementation approach that includes a Financing Subsidiary of OPG.



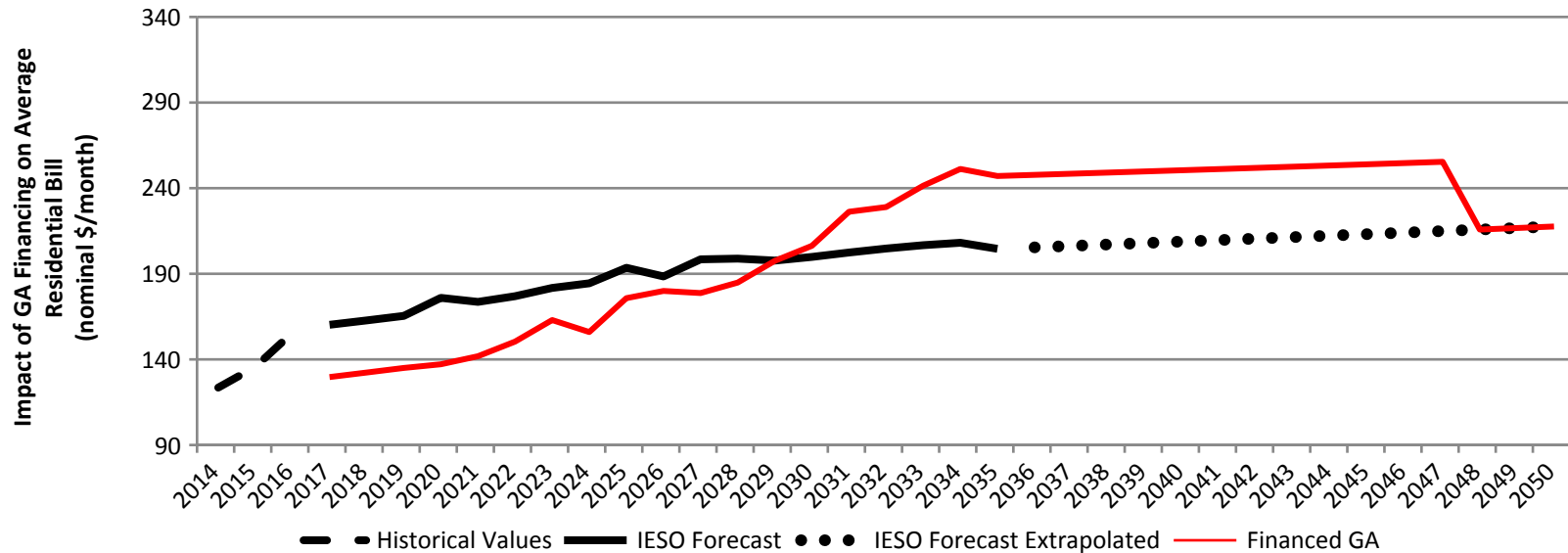
→ Early year fund flow

→ Future Repayment Mechanism

- OPG would create a holding company which would own shares in the existing OPG Inc., as well as a new Financing Subsidiary.
- The OPG Financing Sub. funds part of the GA and (a) would have a legislative right to recover associated principle, interest and administrative costs from customers (settled via service agreement with IESO).
- OEB, while continuing to regulate the current OPG, provides light-touch oversight of the OPG Financing Sub., as well as the GA smoothing mechanism.
- Consumers pay IESO a portion of the GA in early years. In the future, the OPG Financing Sub. recovers principle, interest and administrative costs from consumers. Customers bill presentation remains unchanged (costs should diminish in early years).
- The IESO pays generators (in early years), partially from consumers and partially financed by the OPG Financing Sub. (b) The IESO provides collection services to the Financing Entity under a service contract.
- Generators continue to receive payments from IESO according to existing contract / regulatory structures.
- The OFA or a 3rd party lender funds the GA shortfall in early years and (c) receives payments from the OPG Sub. as debt is repaid.

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B. Option 1: GA Smoothing for RPP Only (Borrow \$2.2 billion in 2017, Residential Bills Lowered 25%)



	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048
Average Monthly Residential Bill Impact pre-tax (\$/month)	-27.0	-26.9	-26.9	-34.3	-28.1	-23.5	-16.6	-25.2	-15.7	-7.5	-17.4	-12.4	-0.1	5.7	21.1	21.4	30.7	38.1	37.6	37.5	37.3	37.2	37.0	36.8	36.7	36.5	36.4	36.2	36.1	35.9	35.8	0.0
Total Accumulated Debt (\$ billion)	2.2	4.6	7.0	10.2	13.1	15.7	17.8	20.8	23.2	25.0	27.7	30.1	31.7	32.8	32.7	32.6	31.7	30.1	28.4	26.6	24.8	22.8	20.8	18.6	16.3	13.9	11.4	8.8	6.0	3.1	0.0	0.0
Total Change in Accumulated Debt (\$ billion)	2.2	2.3	2.4	3.2	2.8	2.6	2.2	3.0	2.4	1.8	2.7	2.4	1.6	1.1	-0.1	-0.1	-0.9	-1.6	-1.7	-1.8	-1.9	-2.0	-2.1	-2.2	-2.3	-2.4	-2.5	-2.6	-2.8	-2.9	-3.1	0.0

Notes: Assumes 30 year financing period and a nominal interest rate of 5% (compounded monthly). Ratepayer GA payments increase annually beyond 2021 at the rate of inflation with a limit of \$3.2 billion above the true cost of GA in any given year. IESO forecast is based on IESO's revised OPO forecast as of December 2016. Includes the cancellation of LRP II and EFW, expansion of ICI. Does not include smoothed OPG rates. Above residential bill is based on a 750 kWh per month Toronto Hydro customer. RPP does not include customers on retail contracts.

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B. Option 1: GA Smoothing for RPP Only – Residential Bills Lowered 25% (with Tax-Base Funded 8% Rebate and Social Programs, 2% increase)

- Total bill below is based on a revised IESO forecast. See footnotes for more information.

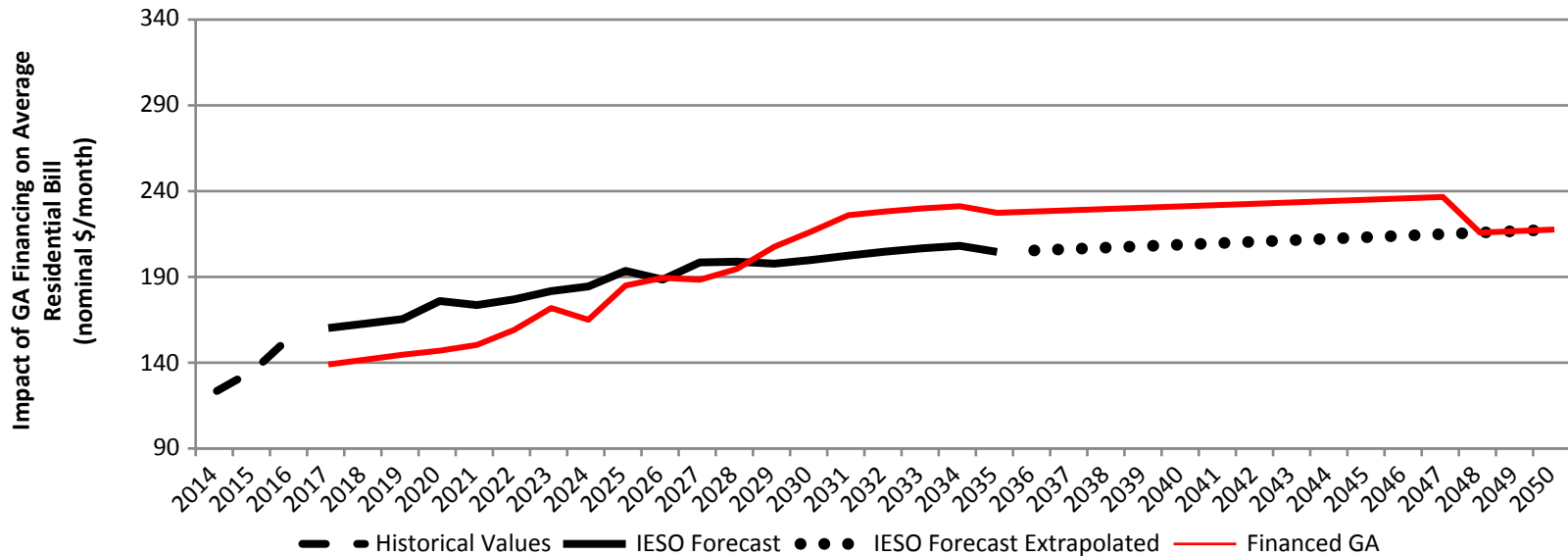
Residential (750 kWh/month)	Actual 2016	2017	2018	2019	2020	2021
Total Bill (includes HST)	163	172	175	178	189	187
Total Bill (excludes HST)	145	153	155	158	168	165
Impact of GA Financing		-27	-27	-27	-34	-29
Impact of Tax-Basing Social Programs		-2	-2	-2	-3	-3
Subtotal		123	126	128	131	133
8% rebate		-10	-10	-10	-10	-11
HST		16	16	17	17	17
Revised Bill (includes HST)	163	129	132	135	137	140
Year-over-Year Change		-21%	2%	2%	2%	2%
Change from Forecast		-25%	-25%	-24%	-28%	-25%

Commercial & Small Industrial (\$/MWh)	Actual 2016	2017	2018	2019	2020	2021
Class B Total (excludes HST)	160	165	160	162	173	169
Class B Revised Total (excludes HST)	160	162	157	159	170	166
Year-over-Year Change		1%	-3%	1%	7%	-2%
Change from Forecast		-2%	-2%	-2%	-2%	-2%

Large Industrial (\$/MWh)	Actual 2016	2017	2018	2019	2020	2021
Class A Total (excludes HST)	90	91	93	88	95	96
Class A Revised Total (excludes HST)	90	88	90	84	92	93
Year-over-Year Change		-2%	2%	-6%	9%	1%
Change from Forecast		-4%	-4%	-4%	-4%	-4%

Notes: Based on IESO's revised OPO forecast as of December 2016. Includes the cancellation of LRP II and EFW, expansion of ICI. Does not include smoothed OPG rates. Above residential bill is based on a 750 kWh per month Toronto Hydro customer. Above Class B estimate based on a 1 MW customer connected to Toronto Hydro, assumes delivery charge escalates as per residential forecast. "Social programs" refers to existing RRRP and OESP. While initiatives would take several months to implement, the above estimate for 2017 reflects a full-year impact. The 8% rebate above represents savings compared to status quo due to the reduction in the sub-total from GA financing. RPP does not include customers on retail contracts.

B. Option 2: GA Smoothing for RPP Only (Borrow \$1.6 billion in 2017, Residential Bills Lowered 20%)



	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048
Average Monthly Residential Bill Impact pre-tax (\$/month)	-18.8	-18.6	-18.4	-25.6	-20.5	-15.8	-8.8	-17.2	-7.5	0.9	-8.9	-3.7	8.7	14.7	20.9	20.7	20.6	20.4	20.2	20.1	20.0	19.9	19.8	19.7	19.7	19.6	19.5	19.4	19.3	19.3	19.2	0.0
Total Accumulated Debt (\$ billion)	1.6	3.2	4.9	7.2	9.3	11.0	12.3	14.4	15.7	16.5	18.0	19.3	19.5	19.3	18.6	17.8	17.0	16.1	15.2	14.3	13.3	12.2	11.1	10.0	8.7	7.5	6.1	4.7	3.2	1.6	0.0	0.0
Total Change in Accumulated Debt (\$ billion)	1.6	1.6	1.7	2.4	2.1	1.8	1.3	2.0	1.4	0.7	1.6	1.2	0.3	-0.2	-0.7	-0.8	-0.8	-0.9	-0.9	-0.9	-1.0	-1.0	-1.1	-1.2	-1.2	-1.3	-1.3	-1.4	-1.5	-1.6	-1.6	0.0

Notes: Assumes 30 year financing period and a nominal interest rate of 5% (compounded monthly). Ratepayer GA payments increase annually beyond 2021 at the rate of inflation with a limit of \$1.7 billion above the true cost of GA in any given year. IESO forecast is based on IESO's revised OPO forecast as of December 2016. Includes the cancellation of LRP II and EFW, expansion of ICI. Does not include smoothed OPG rates. Above residential bill is based on a 750 kWh per month Toronto Hydro customer. RPP does not include customers on retail contracts.

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B. Option 2: GA Smoothing for RPP Only (Borrow \$1.6 billion in 2017, Residential Bills Lowered 20%)

- Total bill below is based on a revised IESO forecast. See footnotes for more information.

Residential (750 kWh/month)	Actual 2016	2017	2018	2019	2020	2021
Total Bill (includes HST)	163	172	175	178	189	187
Total Bill (excludes HST)	145	153	155	158	168	165
Impact of GA Financing		-19	-19	-18	-26	-21
Impact of Tax-Basing Social Programs		-2	-2	-2	-3	-3
Subtotal		131	134	137	139	142
8% rebate		-11	-11	-11	-11	-11
HST		17	17	18	18	18
Revised Bill (includes HST)	163	138	141	144	146	149
Year-over-Year Change		-16%	2%	2%	2%	2%
Change from Forecast		-20%	-20%	-19%	-23%	-20%

Commercial & Small Industrial (\$/MWh)	Actual 2016	2017	2018	2019	2020	2021
Class B Total (excludes HST)	160	165	160	162	173	169
Class B Revised Total (excludes HST)	160	162	157	159	170	166
Year-over-Year Change		1%	-3%	1%	7%	-2%
Change from Forecast		-2%	-2%	-2%	-2%	-2%

Large Industrial (\$/MWh)	Actual 2016	2017	2018	2019	2020	2021
Class A Total (excludes HST)	90	91	93	88	95	96
Class A Revised Total (excludes HST)	90	88	90	84	92	93
Year-over-Year Change		-2%	2%	-6%	9%	1%
Change from Forecast		-4%	-4%	-4%	-4%	-4%

Notes: Based on IESO's revised OPO forecast as of December 2016. Includes the cancellation of LRP II and EFW, expansion of ICI. Does not include smoothed OPG rates. Above residential bill is based on a 750 kWh per month Toronto Hydro customer. Above Class B estimate based on a 1 MW customer connected to Toronto Hydro, assumes delivery charge escalates as per residential forecast. "Social programs" refers to existing RRRP and OESP. While initiatives would take several months to implement, the above estimate for 2017 reflects a full-year impact. The 8% rebate above represents savings compared to status quo due to the reduction in the sub-total from GA financing. RPP does not include customers on retail contracts.

GA Smoothing – Considerations

- Borrowing money to smooth the Global Adjustment (GA), while lowering costs in the short term, results in a more rapid rise in electricity prices beyond the rate of increase already expected.
 - In addition, should Ontario electricity demand be lower than forecasted, the cost of paying off the debt will be spread over a smaller pool of consumption, further increasing future costs for individual ratepayers.
- The impacts are also based on a GA forecast. Since the GA fluctuates, actuals will vary based on demand, the addition of new generation and natural gas prices.
 - A “true-up” mechanism will be required to account for the difference between the “estimate” and “actual” GA costs.
- If Class B electricity consumers, such as commercial and small industries, do not receive the benefit of GA Smoothing (i.e., because it is only targeted to RPP consumers) – consideration could be given to provide tax-based measures to off-set electricity costs (e.g., tax-credits, programs, etc).
 - Class B consumers have raised concerns about the cost of electricity and its impact on their business competitiveness.
 - Government is developing an option that would provide rate relief for Class B consumers.
- Rating agencies and investors in the Province’s debt may view this borrowing as an obligation of the Province, regardless of accounting treatment. Depending on the magnitude of the debt to be incurred could have an impact on the Province’s borrowing cost.
- Further work is required to determine:
 - Form of the recovery mechanism – this will need to provide reasonable certainty to the lender, while providing flexibility to respond to changing interest rate and demand conditions;
 - OPG’s new corporate and governance structures – the new subsidiary needs to be sufficiently ring fenced in order to protect OPG’s existing business and enable 3rd party borrowing (if necessary); and
 - OPG’s capacity to hold the new liability – There is a limit of incremental debt that OPG can assume before its long term viability, credit ratings and stand-alone financial sustainability become challenging.
- Accounting treatment and associated fiscal impacts of GA Smoothing will depend in part upon the details of these elements. Further work is required to make this assessment.

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GA Smoothing – Legal Considerations

- **Amendments to *Electricity Act, 1998 (EA)* and *Ontario Energy Board Act, 1998 (OEBA)***
 - The EA allows the Lieutenant Governor in Council to cause an OPG Holdco to be created under the *Business Corporations Act*.
 - The mandate and governance of the Financing Subsidiary will be addressed through amendments to the EA. Governance provisions will be designed to address the accounting control indicators.
 - The Financing Subsidiary will require authority to recover principle, interest and administrative costs through GA from customers.
 - Legislation would authorize IESO to collect amounts on behalf of the Financing Subsidiary and settle accounts with the Financing Subsidiary as a service provider. Regulatory amendments to GA Regulations would require IESO to:
 - Separately settle and track amounts received from the Financing Subsidiary to lower GA (including maintaining variance accounts).
 - Separately settle and track amounts paid back to the Financing Subsidiary (including maintaining variance accounts).
 - Distributors would continue to collect from consumers and settle with IESO. Generators would continue to be paid by IESO.
 - OEBA-related amendments would allow for OEB oversight. Light touch would focus on the borrowing entity's recovery of administrative costs and its calculation of amounts owing in a period. Heavy touch would give OEB the discretion to determine repayment over time.
 - The certainty of the legislative mechanism to recover the debt and interest, and the extent of discretion of the OEB to alter either amount over time, will have impacts on the availability and cost of capital.
 - Further legal analysis is required as the GA option is developed.

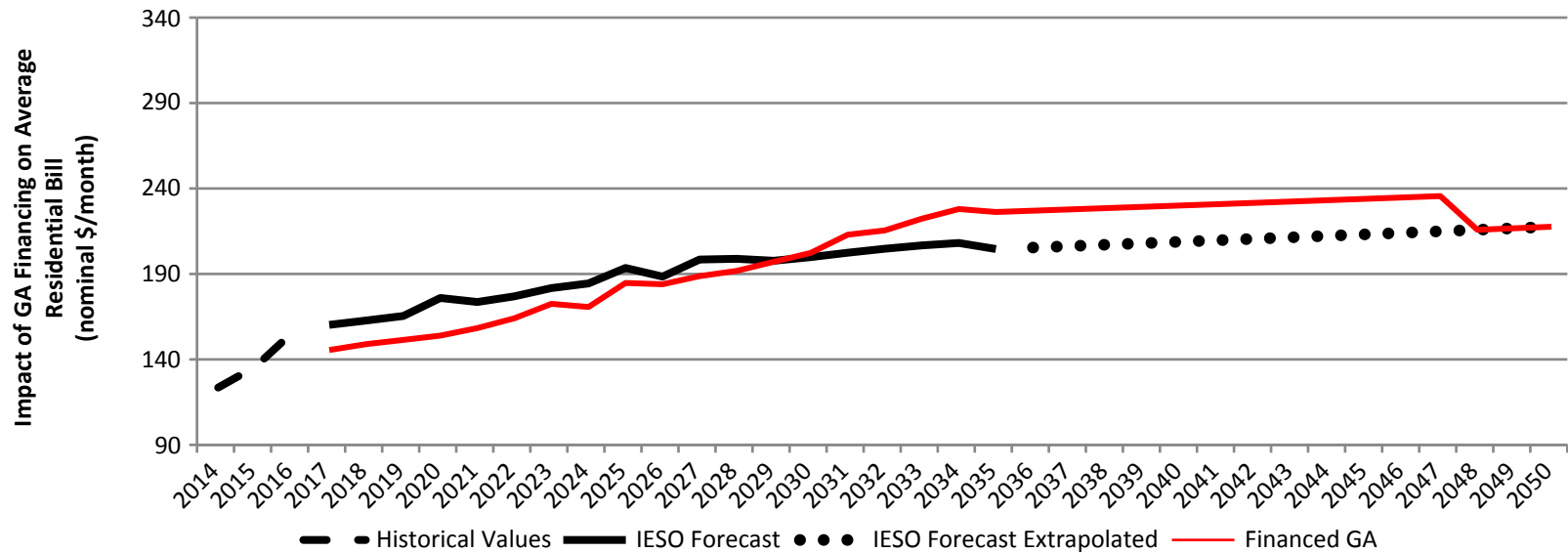
MITIGATION OPTIONS FOR CLASS B ELECTRICITY CONSUMERS

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Context

- Class B consumers pay higher prices than Class A consumers due to their consumption patterns and their inability to participate in programs aimed at larger consumers.
- Price mitigation initiatives could be provided to provide reductions to all electricity consumers, such as extending the GA financing beyond RPP.
- In recognition of address Class B consumers' concerns (e.g., Concerned Manufacturers), targeted initiatives could provide benefits to Class B only.

A. Benefit for All including Class B – Option 1: GA Smoothing for All (Borrow \$2.3 billion in 2017, Residential Bills Lowered 16%)



	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048
Average Monthly Residential Bill Impact pre-tax (\$/month)	-13.0	-12.2	-12.4	-19.5	-13.5	-11.4	-8.2	-12.2	-7.8	-4.0	-8.6	-6.2	-0.6	2.2	9.3	9.5	13.8	17.6	19.2	19.1	19.0	18.9	18.9	18.8	18.7	18.6	18.5	18.5	18.4	18.3	18.2	0.0
Total Accumulated Debt (\$ billion)	2.3	4.6	7.0	10.8	13.8	16.5	18.8	21.9	24.4	26.3	29.2	31.8	33.5	34.8	34.9	35.0	34.3	32.9	31.0	29.1	27.1	24.9	22.7	20.3	17.8	15.2	12.5	9.6	6.5	3.4	0.0	0.0
Total Change in Accumulated Debt (\$ billion)	2.3	2.3	2.4	3.8	2.9	2.7	2.3	3.1	2.5	1.9	2.9	2.6	1.7	1.3	0.1	0.1	-0.7	-1.4	-1.8	-1.9	-2.0	-2.1	-2.2	-2.4	-2.5	-2.6	-2.7	-2.9	-3.0	-3.2	-3.4	0.0

Notes: Assumes 30 year financing period and a nominal interest rate of 5% (compounded monthly). Ratepayer GA payments increase annually beyond 2021 at the rate of inflation with a limit of \$3.25 billion above the true cost of GA in any given year. IESO forecast is based on IESO's revised OPO forecast as of December 2016. Includes the cancellation of LRP II and EFW, expansion of ICI. Does not include smoothed OPG rates. Above residential bill is based on a 750 kWh per month Toronto Hydro customer. RPP does not include customers on retail contracts.

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A. Option 1: GA Smoothing for All with Annual Borrowing Cap of \$35B – Residential Bills Lowered 16% (with Tax-Base Funded 8% Rebate and Social Programs, 2% increase)

- Total bill below is based on a revised IESO forecast. See footnotes for more information.

Residential (750 kWh/month)	Actual 2016	2017	2018	2019	2020	2021
Total Bill (includes HST)	163	172	175	178	189	187
Total Bill (excludes HST)		153	155	158	168	165
Impact of GA Financing		-13	-12	-12	-19	-14
Impact of Tax-Basing Social Programs		-2	-2	-2	-3	-3
Subtotal		137	140	143	146	149
8% rebate		-11	-11	-11	-12	-12
HST		18	18	19	19	19
Revised Bill (includes HST)	163	144	147	150	153	157
Year-over-Year Change		-12%	2%	2%	2%	3%
Change from Forecast		-16%	-16%	-16%	-19%	-16%

Commercial & Small Industrial (\$/MWh)	Actual 2016	2017	2018	2019	2020	2021
Class B Total (excludes HST)	160	165	160	162	173	169
Class B Revised Total (excludes HST)	160	145	140	142	144	148
Year-over-Year Change		-9%	-3%	1%	1%	3%
Change from Forecast		-12%	-12%	-12%	-17%	-13%

Large Industrial (\$/MWh)	Actual 2016	2017	2018	2019	2020	2021
Class A Total (excludes HST)	90	91	93	88	95	96
Class A Revised Total (excludes HST)	90	77	80	74	76	81
Year-over-Year Change		-14%	3%	-7%	2%	8%
Change from Forecast		-15%	-14%	-15%	-21%	-15%

Notes: Based on IESO's revised OPO forecast as of December 2016. Includes the cancellation of LRP II and EFW, expansion of ICI. Does not include smoothed OPG rates. Above residential bill is based on a 750 kWh per month Toronto Hydro customer. Above Class B estimate based on a 1 MW customer connected to Toronto Hydro, assumes delivery charge escalates as per residential forecast. "Social programs" refers to existing RRRP and OESP. While initiatives would take several months to implement, the above estimate for 2017 reflects a full-year impact. The 8% rebate above represents savings compared to status quo due to the reduction in the sub-total from GA financing. RPP does not include customers on retail contracts.

A. Benefit for All including Class B – Option 2: Fund Conservation through the Greenhouse Gas Reduction Account (GGRA)

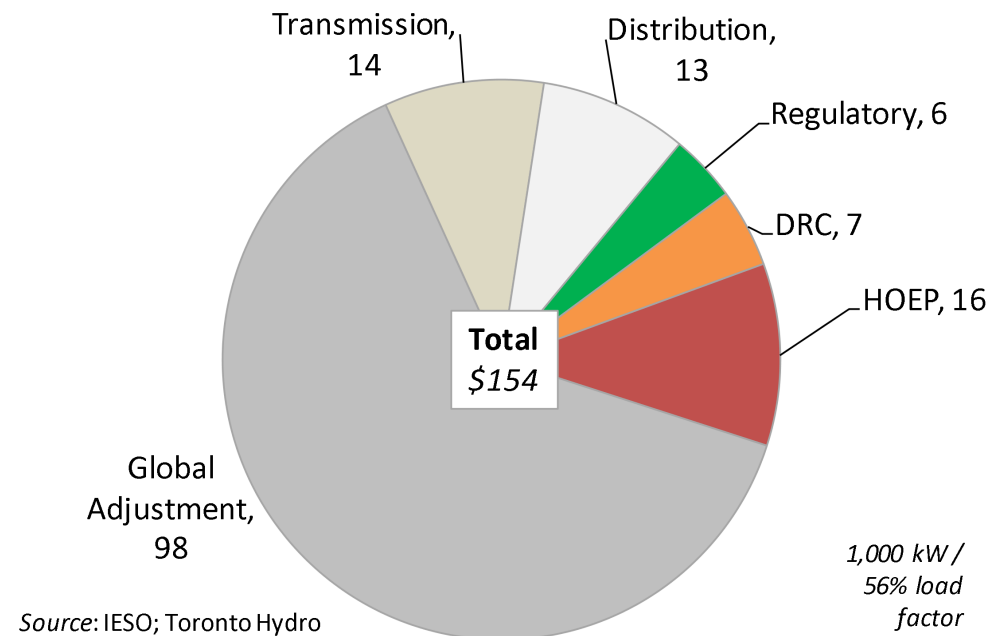
- Conservation could be funded through the Greenhouse Gas Reduction Account. Conservation supports the reduction of GHGs by avoiding/deferring future energy infrastructure investments and reducing reduced natural gas peaking generation and related GHGs.
- The cost of conservation could be shifted away from the rate-base to provide a reduction on bills for all electricity consumers, including Class B.
- Conservation program costs between 2017-2020 are expected to be about \$500 million per year.
- Funding conservation programs through the tax-base is expected to result in a benefit of about \$5/MWh for Class B consumers.
- Currently, LDCs request funding from the IESO for conservation programs. Under this option, the IESO would work with MOECC to request funding for these programs.



B. Targeted Benefit for Class B – Option 1: Remove DRC from Class B

- The Debt Retirement Charge (DRC) has already been removed from residential bills. For all other consumers the DRC is scheduled to be removed by April 2018.
- Eliminating DRC earlier would save \$7/MWh for all non-residential consumers. This would represent a 4% reduction for a Class B consumer based on current prices.
- Tax-basing the DRC for Class B is estimated to transfer about \$475 million to the fiscal plan for 2017-2018.

Typical Commercial Price (\$/MWh)
2016 Average (Non-RPP Class B)



B. Targeted Benefit for Class B – Option 2: Tax-Based Assistance Package

- Consideration could be given to provide a comprehensive package of tax-based measures to reduce prices for Class B consumers, including:
 - Lowering corporate taxes for SMEs,
 - Tax credits, and
 - Tax-based incentives.
- Fiscal impacts would vary depending on the design of the strategy. Further analysis would be required on the potential impacts for consumers and the fiscal plan.
- The Ministry would work with MoF and MEDG to develop targeted programs.

Considerations

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Fiscal – Considerations

Fiscal Impact (\$M)	16-17	17-18	18-19	19-20	20-21
Legacy Rural or Remote Rate Protection (RRRP)*	-	126	130	133	136
RRRP 2016 – Speech from the Throne Expansion*	-	117	120	123	127
Accelerating Fixed Rates for Hydro One**	-	61	51	40	29
Harmonizing Fixed Rates for Hydro One and High Cost LDCs***	-	150	149	150	152
Ontario Electricity Support Program 50% Enhancement	-	178	239	290	334
First Nation Rate	-	20	20	20	20
LDC Affordability Fund****	200	-	-	-	-
Total	200	652	709	756	798

Notes:

*Current regulatory framework calls for RRRP to increase by average distribution rate increase. Forecast assumes 2.6% annually though is subject to OEB proceedings.

**Funding for accelerating fixed rate benefits is completed as the move to fixed rates is accomplished over OEB timelines.

***Cost forecasts assumes 2.6% annual rise in distribution rates; will be subject to 2017 Hydro One cost of service application. Until move to fixed rates is complete, fiscal projection is subject to consumer consumption patterns that may change due to extreme weather or other factors.

**** Funding for the LDC Affordability Fund is one-time in 2016/17.

Legislative Authority – Considerations

1. Electricity Support Programs

- **RRRP, OESP and First Nations Rate:** Moving costs to the tax base and creating a First Nations rate will require amendments to OEBA. Regulatory amendments (442/01, 314/15, 275/04) will be required to address program details.
- **LDC Affordability Fund (2c):** In order to implement new LDC affordability fund the Province would need to enter into Transfer Payment Agreements with qualified third parties to administer the fund.

2. Bending the Future Cost Curve of Electricity

- No specific legislative or regulatory amendments identified. IESO may need to amend market rules. Agency MOUs/MOAs may require amendment.

Communication Plan

Objective:

- Demonstrate Ontario's commitment to lower electricity costs for ratepayers through new rate relief initiatives.

Strategic Approach

- High-profile Premier's announcement.
- News release, backgrounders, QA's are being prepared.
- A multimedia marketing and advertising campaign is being prepared on the topic of rate mitigation for electricity consumers.

Key Messages

- Ontario is committed to keeping electricity in Ontario clean, reliable and affordable. We are making needed investments to modernize the system and this has resulted in an increase in energy rates for almost all Ontario-based electricity consumers.
- We understand the rising costs are a concern, which is why we are bringing in savings now through new initiatives that will cut costs directly on your energy bill.
- The electricity assets that we have invested in will remain valuable past their contract life, so we can apply those future savings to consumers now by deferring the global adjustment costs.
- We have a robust energy supply and are in a good position for market innovation. An adaptive energy market has the power to remove inefficiencies, increase transparency, enhance opportunities for innovation and help keep competitive tension to reduce system costs.

Communication – Considerations

Issue/Consideration	Mitigation Strategy	Key Message
Saving money for consumers now will result in rising costs for future consumers	Emphasize market renewal and innovative technologies that could result in savings for future consumers	Extracting value from assets now gives us more time to innovate the market and bend the cost curve over time
Cost of these initiatives will stop Ontario from balancing the budget	Emphasize that it will help businesses stay competitive and reduce financial pressure on families	The government remains committed to balancing the budget by 2017-18 while continuing to invest in the economy, our people and a healthy, clean and prosperous low-carbon future.
Timeline may be too short to allow LDCs to adjust their billing systems for the rebate	Allow LDCs to provide retroactive payments if they can't update their systems by the implementation date	Consumers will receive the full amount of rebate to which they are entitled. We've made provisions to allow utilities to provide rebates retroactively.
Reducing bills by an additional \$20 a month is not enough. The government is providing a little relief to all consumers, when they could instead have done more for those that needed it most.	Draw attention to Ontario Electricity Support Program and other initiatives which are targeted at the most vulnerable consumers.	The Ontario Electricity Support Program provides targeted relief to low income consumers. In addition, special programs are available to assist low income consumers with energy conservation and in meeting unpaid bills. As well, the government has put in place the Ontario Trillium Benefit to assist families with low to moderate incomes.

Appendix

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Electricity Consumer Classes

- There are three classes of electricity consumers:

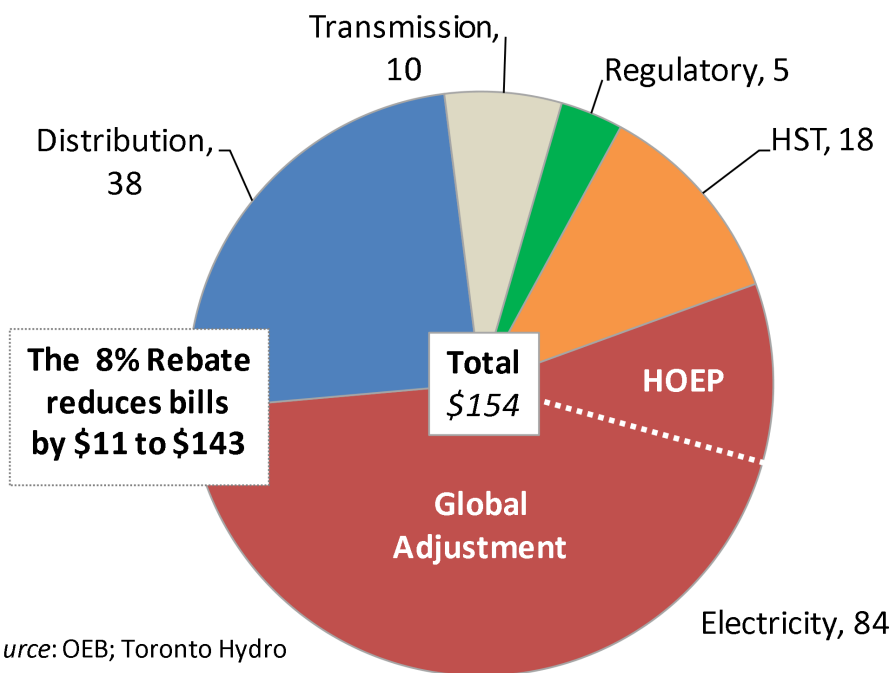
	Regulated Price Plan	Class B	Class A
Consumer Types	- Residential - Small Business - Farms	- Commercial - Institutional - Small industrial	- Large commercial - Large industrial
Load Size	Below 0.05 MW	Between 0.05 MW and 1 MW	Above 1 MW
Total Consumption	58 TWh	57 TWh	26 TWh
Share of Consumption	41.1%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

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 (\$)

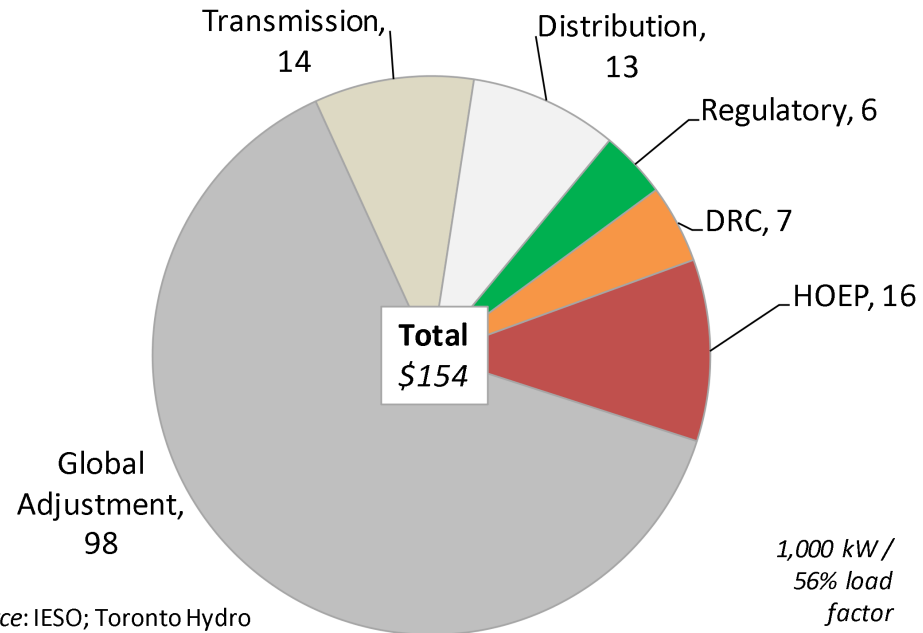
As of January 1, 2017 (750 kWh/month)



Commercial and Small Industrial 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)
 2016 Average (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.

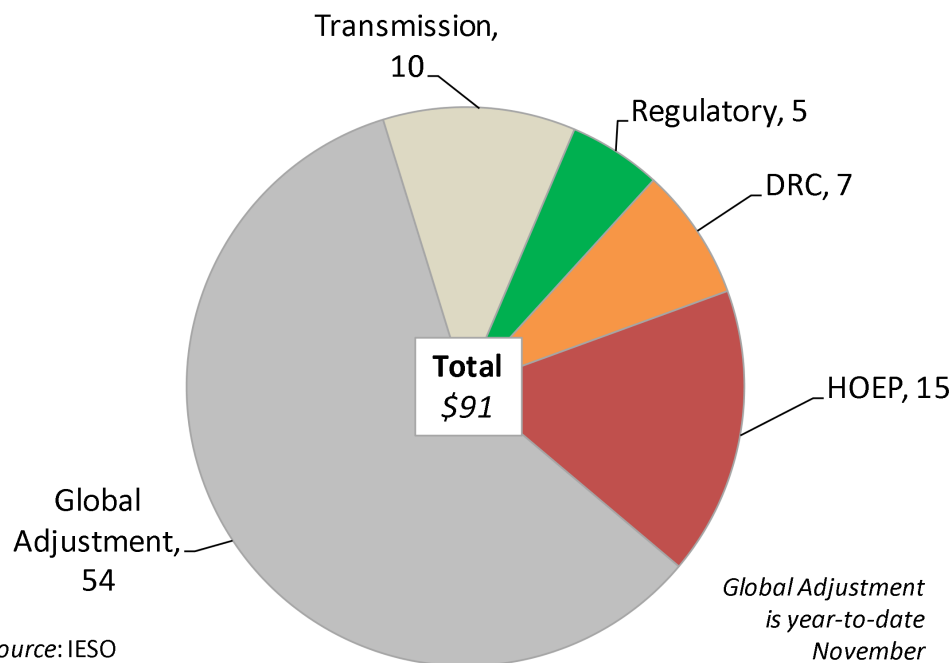
* **Note:** Most commercial consumers receive input tax credits for their HST.

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Industrial Electricity Prices

- There are about 250 large industrial consumers in Ontario (i.e., peak demand above 5 MW), and many hundred more smaller industrial consumers.
- 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 1 MW) that reduce consumption during peak periods.
 - ICI consumers reduce their electricity costs by up to one-third.

Typical Large Industrial Price (\$/MWh)
2016 Average



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 \$71/MWh for these consumers. The program is funded through the tax base.

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

APPENDIX – ELECTRICITY SUPPORT PROGRAMS TO HELP THE MOST VULNERABLE

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Current Low-Income Support Programs

- Ontario has implemented several programs to help electricity and natural gas consumers.
- These programs require participants to meet a mandated definition of low-income electricity or natural gas consumer.
- Under the 2015-2020 Conservation First Framework (CFF) and the Demand Side Management (DSM) Framework, conservation programs for low-income consumers are funded through electricity and natural gas rates:
 - The **Save on Energy Home Assistance Program (HAP)**, delivered by local distribution companies (LDCs) and the Independent Electricity System Operator (IESO) helps qualified homeowners, tenants and social housing providers improve the energy efficiency of their homes. It provides a free home energy audit, and wide range of free energy efficient measures, such as lighting, household appliances, and weatherization (if electrically-heated).
 - The Enbridge Gas Distribution **Home Winterproofing Program** and the Union Gas Home **Weatherization Program** offer eligible low-income customers free home energy assessment, weatherization services like insulation and air sealing, water conservation measures like showerheads and aerators, programmable thermostat, and a carbon monoxide monitor when one is not present.
- A number of other support programs are delivered by utilities with oversight by the OEB:
 - The **Ontario Electricity Support Program (OESP)** provides low-income consumers with a monthly on-bill credit to reduce their electricity bill.
 - The **Low-income Energy Assistance Program (LEAP)** provides emergency financial assistance through a one-time grant towards the electricity or natural gas bill to help in an emergency situation.
 - **Special Rules** are in place, whereby utilities have to follow these when dealing with customers with limited finances, for example waiving security deposits, allowing longer payment times, a longer grace period if facing disconnection, and more.

Low-income Eligibility Criteria

- Income eligibility criteria for conservation and financial support programs for low-income electricity customers are based on after-tax income for all household members aged 18 and older. The eligibility criteria is derived from Statistic Canada's measures. The most commonly used is the Low Income Measure (LIM).
- An example of the low-income eligibility threshold under HAP is provided below.

Home Assistance Program

Number of people living in home	After-tax annual household income
1 person	\$21,773
2 people	\$30,792
3 people	\$37,712
4 people	\$43,546
5 people	\$48,686
6 people	\$53,333
7 people	\$57,606
8 people	\$61,583
9 people	\$65,319
10 people	\$68,852

*OR, the individual has received a social program benefit from a list of Ontario programs, for example, National Child Benefit Supplement (NCBS), Allowance for Seniors, Ontario Works. There is inter-program coordination in that if an individual is eligible for LEAP EFA or OESP they are also eligible for the Home Assistance Program.

Overview of the Home Assistance Program

- LDCs and the IESO have been delivering conservation programs since 2005.
- All programs are subject to Evaluation, Measurement & Verification and reporting of cost-effectiveness and other performance results.
- Conservation programs typically provide incentives that cover only a portion of the incremental cost of the more energy efficient measure. Programs require an upfront investment by customers.
- However, for eligible low-income customers, the Home Assistance Program (HAP), provides efficiency upgrades and education, *at no cost*, to help improve the energy efficiency and comfort of the homes of eligible low-income customers.
 - HAP eligibility is aligned with other low-income support programs such as the Ontario Electricity Support Program (OESP).
 - Energy efficiency measures under the Program include:
 - Energy-saving light bulbs (LEDs); power bars;
 - Energy efficient window ACs, refrigerators, freezers, dehumidifiers;
 - Low-flow showerheads, hot water blankets, pipe wrap and faucet aerators (in homes with electric water heating); and
 - Programmable thermostats, weather stripping, insulation (in homes with electric heating).
- As an example of HAP uptake and customer incentives: in 2016, ~2,500 Hydro One customers participated in the HAP program with an average measure cost of \$1,600 per customer.

APPENDIX – BENDING THE FUTURE COST CURVE OF ELECTRICITY

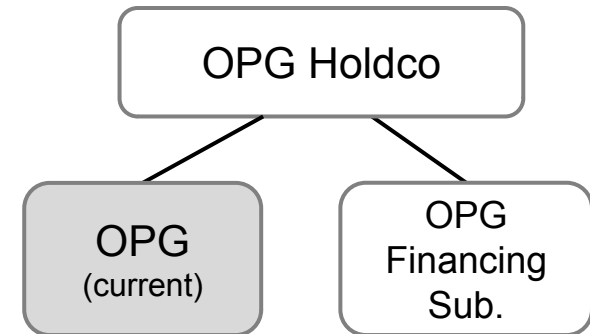
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APPENDIX – GLOBAL ADJUSTMENT (GA) SMOOTHING

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GA Smoothing – OPG Corporate Structure

- The diagram outlines a implementation approach that is currently being considered, where OPG would create a Holdco and would have a Financing Subsidiary of OPG
- The below summary balance sheet and income statement related to the current OPG business



Balance Sheet (\$M) As of December 31, 2015

Assets		Liabilities	
Current	2,390	Current	1,830
Property less depreciation	20,595	LT Debt	5,199
Nuclear Fixed Asset Removal/Waste Management	15,121	Fixed Asset Removal/Waste Management	17,028
Regulatory Assets	5,279	Other	12,170
Other Assets	917	Shareholder Equity	9,905
Total Assets	44,302	Total Liabilities & Equity	44,302

Income Statement (\$M) Year Ended December 31, 2015

Revenue Less Fuel	4,789
Expenses	
OM&A	2,783
Other	1,317
Interest	180
Income Tax	92
Net Income	417