

Electricity Sector Considerations

Confidential Advice to Cabinet – Working Draft

BRIEFING NOTE – OPTIONS FOR ELECTRICITY RATE MITIGATION FOR ONTARIO CONSUMERS

ISSUE: What measures could be taken to reduce electricity bills for Ontario consumers?

KEY INFORMATION:

- In 2017, the total cost on Ontario's electricity system was approximately \$21 billion. Although the rate-base is largely responsible for paying this cost, a portion is also paid from the tax-base (i.e., Ontario Rebate for Electricity Consumers).
 - A typical residential electricity consumer consuming 750 kilowatt hours per month (kWh/month), connected to Toronto Hydro currently pays \$123 a month.
 - Industrial consumers currently pay on average about \$82 per megawatt hour (MWh) for electricity.
 - Small and Medium Enterprise (SME) consumers pay about \$168 per MWh (see Appendix for additional information).
- Electricity bills for typical residential consumers have been reduced by the following measures:
 - Providing the 8 per cent Ontario Rebate for Electricity Consumers (OREC), introduced in January, 2017;
 - Shifting of cost recovery for electricity support programs from the rate-base to provincial tax-base; and
 - Refinancing of a portion of the Global Adjustment (GA).
- Electricity bills for larger consumers have been reduced by the following measures:
 - Establishing the Industrial Conservation Initiative (ICI), which encourages large electricity consumers to reduce consumption during peak periods to reduce their electricity costs. ICI participants save 33 per cent on their electricity costs on average.
 - Removing the debt retirement charge (DRC) in April 2018. All businesses including Ontario's mid-sized commercial and industrial consumers have seen their electricity cost reduced by \$7 per MWh.
 - Shifting the cost recovery of certain electricity support programs from rate-base to the tax-base, which saves about \$3 per MWh.

- Combined with the removal of the DRC, this represents an estimated 12 per cent reduction for a typical large industrial and a 6.5 per cent reduction in the electricity bill of a typical non-Regulated Price Plan (RPP) Class B business.
- In addition, the Independent Electricity System Operator's (IESO) Market Renewal initiative is also progressing through the design phase. It is expected to save up to \$5.2 billion over a ten-year period.
- To reduce electricity bills for Ontario consumers, the Ministry of Energy typically considers the following:
 - Reducing system costs within the electricity system in the immediate, medium and longer term;
 - Shifting costs within the electricity system; and
 - Shifting cost from the rate-base onto the tax-base.
- The first section of this note outlines a range of options for further rate mitigation for residential, SME and industrial consumers. The second section of the note explores three scenarios for achieving specific rate mitigation outcomes.

RATE MITIGATION OPTIONS:

- The first section of this note outlines a range of options for further rate mitigation for residential, SME and industrial consumers. These options consider additional measures to lower electricity system cost (i.e., bending the cost curve), shift costs within the rate-base and shift costs to the tax-base and provided programs targeted at specific electricity consumers. The options include:
 1. Increase the rebate that ratepayers receive through the Ontario Rebate for Electricity Consumers (OREC) to include the equivalent of the entire HST;
 2. Have the Ontario Financing Authority (OFA) take on responsibility for financing the borrowing related to GA refinancing;
 3. Have the government repay the current balance of the GA refinancing debt (i.e., approximately \$3 billion);
 4. Shift conservation program funding from the rate-base to the tax-base;
 5. Cancel the first phase of the Large Renewable Procurement (LRP I);
 6. Decrease the Return on Equity (ROE) received by Local Distribution Companies (LDCs) through their Ontario Energy Board (OEB) approved distribution rates;

7. Transfer costs of new inter-area network transmission facilities from the rate-base to the tax-base;
8. Expand the Ontario Electricity Support Program (OESP);
9. Introduce a new Industrial Electricity Rate; and
10. Cancel the GA refinancing program.

Options

1. *Increase the Ontario Rebate for Electricity Consumers (OREC) Rebate to Include the Equivalent of the Entire HST (i.e., 13 Per Cent):*

Topics	Commentary
<i>Option</i>	• Under this option, the OREC rebate would be increased to provide additional reductions on residential bills by an additional 5 per cent (i.e., equivalent to the federal portion of the HST). • In addition, the federal government would be engaged to negotiate either equivalent funding to offset the additional cost and/or an exemption of electricity from the full HST.
<i>Legislative / Regulation</i>	• Regulatory amendments would be required to the GA refinancing regulations to ensure that the savings were passed on to electricity consumers as opposed to reducing total debt levels. • Note: Only the first year of inflationary increases has been included in the current GA refinancing regulations, so regulatory amendments will be required to set rates for future years. • Further legal analysis is required.
<i>Fiscal</i>	• The cost of an additional 5 per cent rebate would be about \$500 million, increasing over time with an annual average cost of \$688 million from 2019-2035. • The current 8 per cent rebate costs the fiscal plan an estimated \$800 million in 2017-18. Note: Increasing the rebate costs roughly \$100 million for each percentage point increase, increasing over time as the bills that the rebate applies to increase.
<i>Bill Impact</i>	• Initial estimates suggest a ratepayer impact of an additional 5 per cent rebate for a typical residential consumer between 2019 and 2035 would be an estimated average reduction of \$7.95 per month. • For comparison, the existing 8 per cent rebate currently provides a roughly \$9 reduction for the typical residential consumer.

2. *Have the Ontario Financing Authority (OFA) Take on Responsibility for Financing the Borrowing Related to GA Refinancing:*

Topics	Commentary
<i>Option</i>	• Under this option, all borrowing related to GA refinancing would become the responsibility of OFA. – OFA currently provides 44 per cent of the borrowing through equity injections to Ontario Power Generation (OPG). OPG provides a further 5 per cent of the debt that it obtains from capital markets. The remaining 51 per cent is financed by the Fair Hydro Trust (FHT) from capital markets. – OPG earns a return on the 49 per cent that it lends to the FHT. This return is consolidated by the province through OPG's net income. • OFA financing would result in lower interest costs and avoid the interest and fees paid to OPG. • Additional savings could be achieved by reducing administrative costs associated with GA refinancing that are currently recovered from ratepayers (e.g., third-party consulting, legal costs). – In March 2017, the Financial Accountability Officer (FAO) estimated that ratepayers would save \$4 billion if the province financed the entire borrowing. – Note: This figure is based on preliminary debt forecasts that pre-dated the introduction of OFHP and were much higher than current estimates. Additionally, the FAO only looked at the portion of the debt financed through capital markets and did not account for the higher rates earned by OPG on the equity injection.
<i>Legislative / Regulation</i>	• The <i>Ontario Fair Hydro Plan Act, 2017</i> and associated regulations set out the legal framework for GA refinancing (i.e., the methodology for bill setting and management of the deferred costs). • Amendments to the Act and regulations would likely be required. For example: – Legislative change may be required to remove OPG from its role as financial services manager and move the current and future debt obligations to OFA. – Regulatory amendments would be required to ensure that the reduced interest was passed on to consumers as opposed to reducing total debt levels. Note: Only the first year of inflationary increases has been included in the current regulations, so regulatory amendments will be required to set rates for future years.

Topics	Commentary
	Further legal analysis is required.
<i>Fiscal</i>	- Increase in provincial gross debt levels by about \$11 billion at peak, in addition to the current estimate of about \$9 billion in equity injections. - Depending on the accounting treatment, some or all of this amount may have to be recorded as an expense in the fiscal plan. - Additionally, the decrease in OPG's net income would have an impact on the province's fiscal position. Note: If the savings were not immediately passed on to ratepayers the total interest and debt would go down.
<i>Bill Impact</i>	Initial estimates suggests the impacts shown below on total ratepayer costs and typical residential bills.

Ratepayer Impact Table

Ratepayer Impacts (nominal)	Inflationary Capped Period (2019-2021)	Post-Inflationary Cap Period / Life of Refinancing (2022-2047)
Ratepayer Savings (\$M)	72.09	66.72
Savings for a Typical Residential Consumer (\$/750 kWh-month)	0.75	0.69

3. Have the government repay current balance of GA refinancing debt amount (i.e., approximately \$3 billion):

Topics	Commentary
<i>Option</i>	- Under this option, the province would become responsible for repaying the interest and principal amount of the first two debt offerings under GA refinancing instead of ratepayers. - The first two debt tranches are expected to come due in 2033 and 2038. Note: The payment of interest and principal on the subordinated debt (i.e., 49 per cent) would be made to OPG. - This option has been analyzed in conjunction with option 1. If this option was undertaken independent of option 1, the benefit to consumers would be greater (i.e., because the interest costs avoided would be higher).
<i>Legislative / Regulation</i>	- Legislative and regulatory amendments are likely required to allow the province to step in and make the payments without fully taking over the responsibilities of the Fair Hydro Trust (FHT). - The FHT may be required to act as a conduit for the payments as they issued the original debt.

Topics	Commentary
	Further legal and accounting analysis is required.
<i>Fiscal</i>	Impact of approximately \$56 million per year on average from 2019-2038 in interest plus \$1 billion in 2033 and \$0.8 billion in 2038 for the principal repayment.
<i>Bill Impact</i>	- Initial estimates suggest an average annual impact for a typical residential consumer due to reduced interest from 2019-2047 is \$0.58 per month. - The impact of avoided principal repayment in 2033 and 2038 are shown in the table below.

Ratepayer Impact Table

Ratepayer Impact (nominal)	2033	2038
Typical Residential Monthly Bill Impact (\$/750 kWh) – Avoided Principal Repayment	\$10.42	\$8.33

Note: Due to Clean Energy Adjustments (CEAs) being set for 6 month periods (i.e., reference periods), the benefit of the avoided principal payments may be spread over only 6 months.

4. Shift Conservation Program Funding From the Rate-Base to the Tax-Base:

Topics	Commentary
<i>Option</i>	- Currently, funding for conservation initiatives is recovered from the global adjustment (GA). Beginning January 1, 2019, all costs related to these initiatives could be recovered from the tax-base. - The Independent Electricity System Operator (IESO) administers the 2015-2020 Conservation First Framework (CFF) and Industrial Accelerator Program (IAP), which govern the delivery of Local Distribution Company (LDC) and IESO conservation and energy efficiency programs to distribution and transmission-connected customers, respectively. - In addition, IESO operates a Conservation Fund, which supports innovation in energy efficiency programs, tools and products. - Additional opportunities to find cost savings and increase the value of conservation investments could be explored in a new energy efficiency program framework/s (post-2020). - Examples identified by IESO through the Mid-Term Review of the CFF and IAP include: increasing the use of upstream rebates¹;

¹ A *downstream incentive program* helps a consumer offset the first cost of the equipment and reduces the payback period. With an *upstream incentive program*, the consumer purchases the equipment at an already reduced cost. The incentive is paid directly to the installing contractors, distributor, or equipment manufacturer. Upstream programs have the ability to influence consumer choice on a broader

Topics	Commentary
	shifting to performance-based, whole-building incentives, from measure-level incentives (reduced administration); and pursuing greater integration of conservation into regional and local planning processes, and into the planned incremental capacity auction. Note: As conservation program costs are part of the GA refinancing framework, removing these costs would require changes to the GA refinancing program.
<i>Legislative / Regulation</i>	- Legislative and/or regulatory changes may be required. - The IESO currently has in place Energy Conservation Agreements with the 68 LDCs covered under the CFF, and both IESO and LDCs have service agreements with vendors. Further analysis would also be required of the impact of government approvals and cash management requirements with respect to settlement with IESO and LDCs. - Further legal analysis is required.
<i>Fiscal</i>	- An average annual cost of \$477 million has been budgeted until the end of the CFF, IAP and Conservation Fund (over 2019 and 2020). - An average annual cost of \$403 million has been forecast over 2019-2035.
<i>Bill Impact</i>	- Moving conservation program costs off the rate-base would lead to both: - A reduction in electricity system costs; and - A corresponding decrease in the costs eligible to be amortized under GA refinancing. - Detailed analysis would be required to calculate the net impact on residential consumers. Initial estimates suggest an average reduction over the 2019-2035 period of about \$2/MWh for a large industrial. - Note: Should conservation spending be reduced, it could lead to some additional long-term system costs which are not included in the estimated impacts.

5. Cancel the First Phase of the Large Renewable Procurement (LRP I):

Topics	Commentary
<i>Option</i>	The first LRP procurement process (LRP I) began in 2014 and concluded in April 2016.

scale, can offer lower incentive levels as the program moves higher upstream, and can leverage other discounts along the supply chain (e.g., by manufacturer).

Topics	Commentary
	– The IESO received 103 project proposals and ultimately executed 16 contracts for 454.885 megawatts (MW) of new wind, solar, and waterpower electricity generation capacity (the LRP Contracts). • Projects under the LRP Contracts are at various stages of development (See Appendix for further information). – As LRP I costs are part of the GA refinancing framework, removing these costs would require changes to the GA refinancing program.
Legislative / Regulation	• The LRP Contracts include “optional termination” provisions that permit IESO to terminate the agreements upon 180 days’ written notice any time prior to the Commercial Operation Date of the affected project. Under the terms of Article 9.6(j) of the LRP Contracts, IESO would be obliged to compensate suppliers for their “pre-construction development costs”, up to a specified limit. – The nature and extent of IESO’s payment obligation would depend on whether the supplier has achieved its Key Development Milestones (e.g., completion of any Impact Assessments, execution of any applicable Connection Cost Agreements or Connection Cost Recovery Agreements, documentation of any Renewable Energy Approval and any other permits and approvals necessary for construction, and declaration of secured financing sufficient to complete the project, including a copy of the Financial Model). – Further analysis would be required to arrive at an estimate of the pre-construction development costs that IESO would be obliged to pay to suppliers in the event of a termination of the LRP Contracts. – 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; and ▪ On-Shore Wind: \$400,000 plus \$2.00/kW of Contract Capacity. – Further analysis would be required to arrive at an estimate of the pre-construction development costs that IESO would be obliged to

Topics	Commentary
	pay to suppliers in the event of a termination of the LRP Contracts. – An assessment of legal and other considerations and risks associated with any termination of the LRP Contracts would also be required.
<i>Fiscal</i>	• Termination costs would be funded by the rate-base. Consideration could be given to funding any termination costs through the tax-base. In addition, to the extent there is any legal challenge to the province, the province could incur legal liabilities.
<i>Bill Impact</i>	• Suspending LRP I would lead to both: a reduction in electricity system costs and a corresponding decrease in the costs eligible to be amortized under GA refinancing. • Detailed analysis would be required to calculate the net impact on residential consumers. Initial estimates suggest an average reduction over the 2019-2035 period of about \$1/MWh for a large industrial.

6. *Decrease the Return on Equity (ROE) Received by Local Distribution Companies (LDCs) Through Their Ontario Energy Board (OEB) Approved Distribution Rates:*

Topics	Commentary
<i>Option</i>	• Under this option, the Minister of Energy would issue a directive to require the OEB to reduce the return on equity (ROE) that the OEB allows as a cost of capital parameter. Reducing the ROE reduces the revenue requirement of LDCs. – The OEB has set the return on equity for 2018 for LDCs at 9.00 per cent. – Initial analysis for 2019 suggests that every 0.5 percentage point reduction in LDC ROE would result in approximately \$44 million in ratepayer savings, escalating over time as distributor equity grows.
<i>Legislative / Regulation</i>	• There is existing authority under the <i>Ontario Energy Board Act, 1998</i> for the Minister to issue policy directives to the OEB.
<i>Fiscal</i>	• Restricting the ROE of LDCs would impact the revenue requirement of Hydro One, which could impact the dividend paid to the Province.
<i>Residential Bill Impact</i>	• Lowering LDC ROE by 1 percentage point would lead to a reduction in total system cost in 2019 of approximately \$87 million and approximately \$0.46 per month on average for a typical residential electricity consumers. • Note: This assumes that the savings are distributed equally among all distributors and consumers classes. Actual bill impacts would differ. All

Topics	Commentary
	consumers that are distribution-connected would see saving under this option.

7. *Transfer Costs for New Inter-Area Transmission Facilities From the Rate-Base to the Tax Base:*

Topics	Commentary
<i>Option</i>	- Under this option, costs associated with certain transmission projects could be paid by the tax-base by reimbursing the rate-base. - Currently, costs for new network facilities are recovered over the life of the assets through transmission rates paid by all customers. In this option, capital and ongoing costs for new network assets would instead be paid by the tax base. - Hydro One's 2018 transmission rate application identifies several new Inter-Area Network transmission projects: - The Clarington Transformer station is under development and is expected to come into service in 2018; - The 230kV circuits between the Hawthorne and Merivale transformer stations require upgrading and is expected to be in service in 2020; and - Expansion of the Milton Substation is planned for a 2022 in-service date. - In addition, the proposed new East-West Tie is a major new network asset anticipated to be in-service by 2020. The first phase of the proposed new Northwest Bulk transmission line is expected to be in-service in 2024. - The combined capital cost of the proposed projects is approximately \$1.7 billion. - Rates related to each of these projects would be payable when the infrastructure is in service. - Transmitters would continue to seek rate recovery from the OEB and a transfer from the tax-base in an equivalent amount of the revenue requirement associated with these projects would be applied in order to reduce transmission rates.
<i>Legislative / Regulation</i>	Legislative and regulatory amendments would need to be explored to reimburse the rate-base for costs associated with these types of project from the tax-base.
<i>Fiscal</i>	Infrastructure costs could be scaleable in that either a specific project, a list

Topics	Commentary
	of specific projects or a class of projects could be funded from the fiscal plan. In-service dates for the projects considered range from 2018-2024. Costs transferred to the tax-base would increase as projects come into service. For example, the expected revenue requirement transferred to the tax-base would be \$20-30 million in 2018, increasing to \$150-200 million once all projects are in service by 2024.
<i>Bill Impact</i>	Transferring these costs to the tax base would result in a bill reduction of approximately just over \$0.10/month in 2018 to approximately \$1/month post 2024 for an average residential customer.

8. *Expand the Ontario Electricity Support Program (OESP):*

Topics	Commentary
<i>Option</i>	- Under this approach, the original credit scale for OESP is maintained to provide enhanced relief to low-income households, with a new baseline credit for middle income households of \$35 per month. 2016 Census data shows that the median household income in Ontario is just under \$75,000. If OESP eligibility is expanded to support both low and middle income households, a new threshold of \$80,000 could be used to capture these income categories. - The expansion would allow the following categories of households to receive OESP: - Single-person household with after-tax household income of \$28,001 to \$52,000. - Two-person household with a combined household income of \$39,001 to \$52,000. - Three-person household with a combined household income between \$48,000 and \$52,000. - Four-person household with a combined household income between \$48,000 and \$52,000. - One to seven-person households with a combined income of \$52,001 – \$55,000. - One to seven-person households with a combined income of \$55,001 – \$60,000. - One to seven-person households with a combined income of \$60,001 – \$80,000.

- The following chart shows the new eligibility categories in red that would be added:

Household Income (After Tax)		Household Size (Number of people living in household)						
		1 Person	2 Persons	3 Persons	4 Persons	5 Persons	6 Persons	7 or More Persons
Income Bracket	< \$28,000	\$45	\$45	\$51	\$57	\$63	\$75	\$75
	\$28,001 - \$39,000	\$40	\$40	\$45	\$51	\$57	\$63	\$75
	\$39,001 - \$48,000	\$35	\$35	\$35	\$40	\$45	\$51	\$57
	\$48,000 - \$52,000	\$35	\$35	\$35	\$35	\$35	\$40	\$45
	\$52,001 - \$55,000	\$35	\$35	\$35	\$35	\$35	\$35	\$35
	\$55,001 - \$60,000	\$35	\$35	\$35	\$35	\$35	\$35	\$35
	\$60,001 - \$80,000	\$35	\$35	\$35	\$35	\$35	\$35	\$35

Note: Purple cells are new income categories.

- Based on updated data from the 2016 Census, the number of current eligible households is approximately 930,000 households. Expanding the OESP to include all households with combined income up to \$52,000 would result in approximately 603,000 households eligible to apply.
 - If new income categories up to a combined household income of \$80,000 are included, the number of eligible households would increase by 1.66 million.

Legislative / Regulation

- The Ontario Electricity Support Program (OESP) regulation under O. Reg. 14/18 of the *Ontario Energy Board Act, 1998* (OEBA) would need to be amended. This would include changes to expand eligibility to additional rate classes. Further legal analysis is required.

Fiscal

- Assuming that this expansion begins in fiscal 2018-19, and that a 25 per cent participation is reached by the beginning of fiscal 2019-20, this initiative is expected to cost an additional \$73 million over that fiscal year, assuming that all of these individuals get the basic credit amount only (i.e., rather than the energy intensive amount associated with electric heat and medical devices, for example). This would be in addition to the \$264 million that is currently projected for OESP costs in fiscal year 2019-20.
- If new income categories over and above the existing income categories were introduced, costs would increase:
 - The total additional cost to introduce income categories up to a combined income of \$55,000 is \$88 million.
 - The total additional cost to introduce income categories up to a combined income of \$60,000 is \$112 million.
 - The total additional cost to introduce income categories up to a combined income of \$80,000 is \$ 201 million.

Bill Impact

- Ratepayers within six of the seven new categories would receive a \$35 reduction on their monthly bill, or \$420 annually.

	Single-person households with a household income of \$28,001 to \$39,000 would receive a \$40 reduction on their monthly bill, or \$480 annually.
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9. *Introduce a New Industrial Electricity Rate:*

Topics	Commentary
<i>Option</i>	- Under this option, an optional \$70/MWh flat rate that covers regulatory and commodity charges would be offered to all industrial electricity consumers regardless of size. Funding for this new electricity rate would come from the provincial tax-base because of the economic development and competitiveness benefits that it would provide. - In addition, the rate would be indexed to inflation. - Some consumers in ICI that currently achieve lower rates would likely not participate, while all other industrial consumers would likely opt-in. - Class A consumers that left ICI would likely increase their peak consumption under the flat rate option, which would cause additional long-term system costs by increasing the need for peaking generation. - The recent end to the Debt Retirement Charge (DRC) means that average industrial costs have decreased potentially leading to lower uptake in such a program. - Should a decision be made to fully replace the ICI program, the cost of the industrial rate program would increase and the majority of the peak demand reductions currently achieved under ICI would be lost. - Note: Further analysis is required to fully understand the impact of ending ICI on all consumers and the cost of providing a flat rate.
<i>Legislative / Regulation</i>	Regulatory amendments and potentially legislative changes would be required to create the new rate class.
<i>Fiscal</i>	- The fiscal impact table below shows the initial estimated annual cost of providing a \$70/MWh inflation-indexed rate that covers regulatory and commodity charges. - Note: The cost is calculated as the difference between customers' current rates (i.e., Class A or B as applicable) and the flat rate. In reality, customers would likely be transitioned to Class B first, which would increase the fiscal cost of the program as the Class B rate is higher than Class A.

Topics	Commentary
<i>Bill Impact</i>	Consumers that opt-in would achieve rates between approximately \$80/MWh and \$100/MWh, depending on if they are directly connected to the transmission system or not. Note: These rates would increase over time with inflation and increases in delivery costs.

Fiscal Impact Table

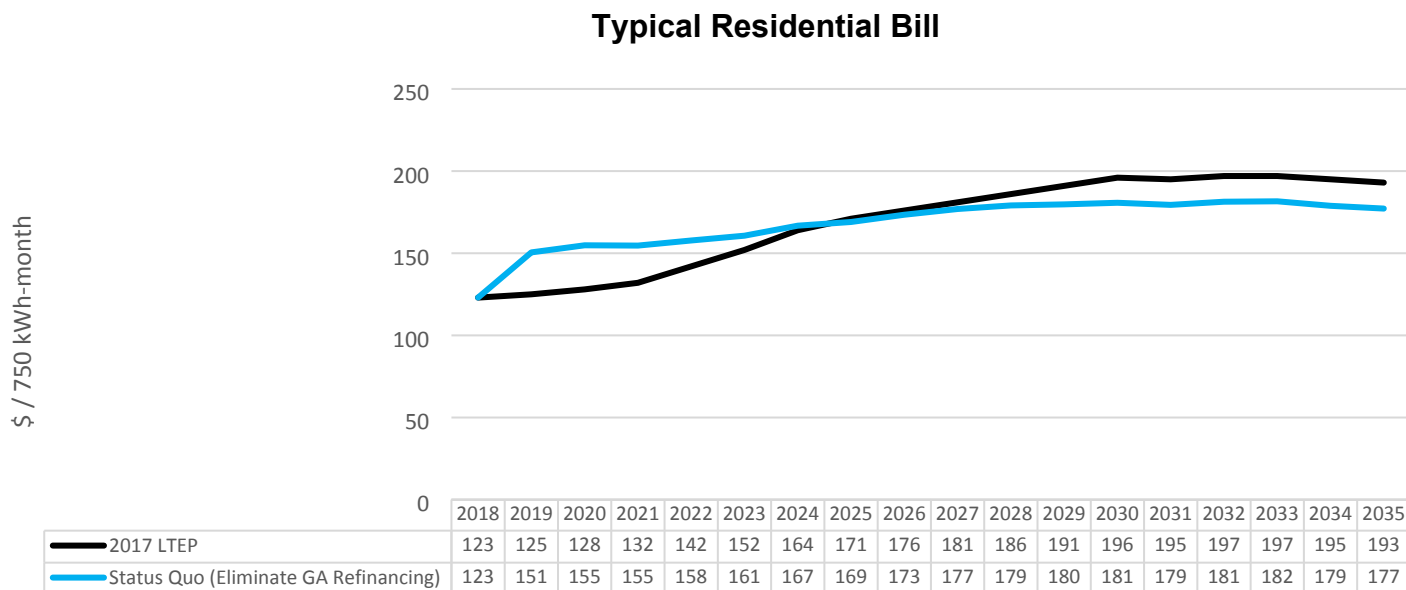
\$ millions	2018	2019	2020	2021	2022	2023	2024	2025	2026
Cost of Optional Flat Industrial Rate	367-605	378-626	428-697	427-688	461-735	525-821	526-834	588-915	572-900
\$ millions	2027	2028	2029	2030	2031	2032	2033	2034	2035
Cost of Optional Flat Industrial Rate	584-919	578-910	561-881	566-883	549-848	549-847	538-821	500-755	501-743

Notes: Fiscal costs are expressed as ranges due to uncertainty relating to the mix of distribution-connected industrial consumers. Range reflects 10 per cent sensitivity on assumption related to the amount of small industrial consumption in Class A vs Class B. Range does not account for potential changes to status quo costs of participants due to participation in the program.

10. Cancel End the GA Refinancing Program:

Topics	Commentary
<i>Option</i>	- Under this approach, the Global Adjustment (GA) refinancing program would end and the Province would become responsible for repaying the interest and principal amount of the first two debt offerings through the Ontario Financing Authority (OFA). - The first two debt tranches are expected to come due in 2033 and 2038. The payment of interest and principal on the subordinated debt (i.e., 49 per cent) would be made to OPG. - Note: Additional debt obligations would be transferred to the government if they were incurred before ending the program.
<i>Legislative / Regulation</i>	- The cancellation of the program would have a number of legal implications, including the repeal or amendment of the <i>Ontario Fair Hydro Plan Act, 2017</i> (OFHPA) and associated regulations. - It is important to note that under section 5 of the OFHPA, as well as the “Change of Law Protection Agreement” signed in December 2017, entered into pursuant to that provision, the Province has agreed to indemnify the obligations of the financing entity (i.e., the Fair Hydro Trust) under certain circumstances, including where the Trust’s ability to recover costs from ratepayers is adversely affected by the repeal or amendment of OFHPA or associated regulations.

Topics	Commentary
	– Under the agreement, if the guarantee is triggered, the Province is obliged to make the principal, interest, and any other payment obligations of the Trust as they come due. – Whether or not the Province would be responsible for any additional cost consequences of triggering the guarantee would require further analysis. – There could be other contractual, market and securities implications that would need to be explored further with OPG due to the triggering of the indemnity. • Additional legal implications of repealing/amending the legislation and assuming the debt of the Trust would also require further consideration, including potential impacts of cancelling planned future borrowing on investors or other parties. – Close co-ordination between Energy and Finance would be required given that both the Minister of Energy and the Minister of Finance were required under section 5 to enter into the Agreement, and given the involvement of the OFA. – Time would be required to assess the steps required to close out the program, including whether or not the FSM and financing entity should be wound up, as well as the creation and amendment of the commercial documentation. – Given that the FSM and the financing entity created under the OFHPA are primarily the responsibility of OPG, the Province may or may not be required to issue one or more unanimous shareholder declarations and resolutions to facilitate these elements of the GA refinancing close out. • Further legal and accounting analysis is required.
<i>Fiscal</i>	• The fiscal impact of taking over the existing obligations would be approximately \$56 million per year on average from 2019-2038 in interest plus \$1 billion in 2033 and \$0.8 billion in 2038 for principal repayment. Note: Ending GA refinancing would also increase the cost of the OREC as the bills that it applies to would go up.
<i>Bill Impact</i>	• Ending the GA refinancing program would lead to a “one-time” increase in the typical residential bill of approximately 23 per cent in 2019. This is an average increase relative to the 2017 LTEP bill of approximately 15 per cent between 2019 and 2023. • Over the long-term bills would be lower than under GA refinancing. • Should this option be pursued in connection with some of the other options in this note, the short-term upward pressure could be mitigated.



Source: Ministry of Energy

PROPOSED SCENARIOS:

- This section explores three scenarios for achieving specific rate mitigation outcomes that include:
 - Leaving GA refinancing in place and increase Ontario Rebate for Electricity Consumers (OREC) to reduce the typical residential bill by a further 12 per cent;
 - Ending the GA refinancing program and increase OREC to achieve a total reduction in the typical residential bill of 17 per cent; and
 - Ending the GA refinancing program and increase OREC to achieve a total reduction in the typical residential bill of 30 per cent.

Scenarios

- Increase OREC to Achieve an Additional 12 Per Cent Reduction on Residential Bill:*

Topics	Commentary
<i>Option</i>	- Under this scenario, the OREC rebate would be increased in addition to shifting the cost of conservation program funding to the tax-base and canceling LRP I. - The additional 12 per cent reduction beginning in 2019 is relative to the residential bill forecast in the 2017 LTEP. The increased OREC rebate is maintained throughout the 2019-2035 period.

Topics	Commentary
	The current 8 per cent rebate costs the fiscal plan an estimated \$800 million in 2017-18.
<i>Legislative / Regulation</i>	- Regulatory amendments would be required to the GA refinancing regulations to ensure that the savings were passed on to electricity consumers as opposed to reducing total debt levels. - Note: Only the first year of inflationary increases has been included in the current GA refinancing regulations, so regulatory amendments will be required to set rates for future years. - Further legal analysis is required.
<i>Fiscal</i>	- A pre-tax reduction of about 13 per cent would be required to provide for a 12 per cent reduction on the total bill. - The cost of an additional rebate would be about \$1,760 million annually on average from 2019-2035. This option represents a total OREC rebate of about 21 per cent (includes the existing 8 per cent) and is more costly than completely offsetting the full 13 per cent HST. - Moving conservation program costs off the rate-base and suspending LRP I would decrease the fiscal impact.
<i>Bill Impact</i>	- Initial estimates suggest a ratepayer impact of an additional rebate for a typical residential consumer between 2019 and 2035 would be an estimated average reduction of \$20.60 per month. - Moving conservation program costs off the rate-base and suspending LRP I would lead to both: - A reduction in electricity system costs; and - A corresponding decrease in the costs eligible to be amortized under GA refinancing. Detailed analysis would be required to calculate the net impact on residential consumers. - Initial estimates suggest an average reduction for large industrial consumers over the 2019-2035 period of: - About \$2/MWh from the shifting of conservation funding. Note: should conservation spending be reduced, it could lead to some additional long-term system costs which are not included in the estimated impacts. - About \$1/MWh for the suspension of LRP I. - Further analysis is required.

2. End the GA Refinancing Program and Reduce Residential Electricity Bills by 17 Per Cent:

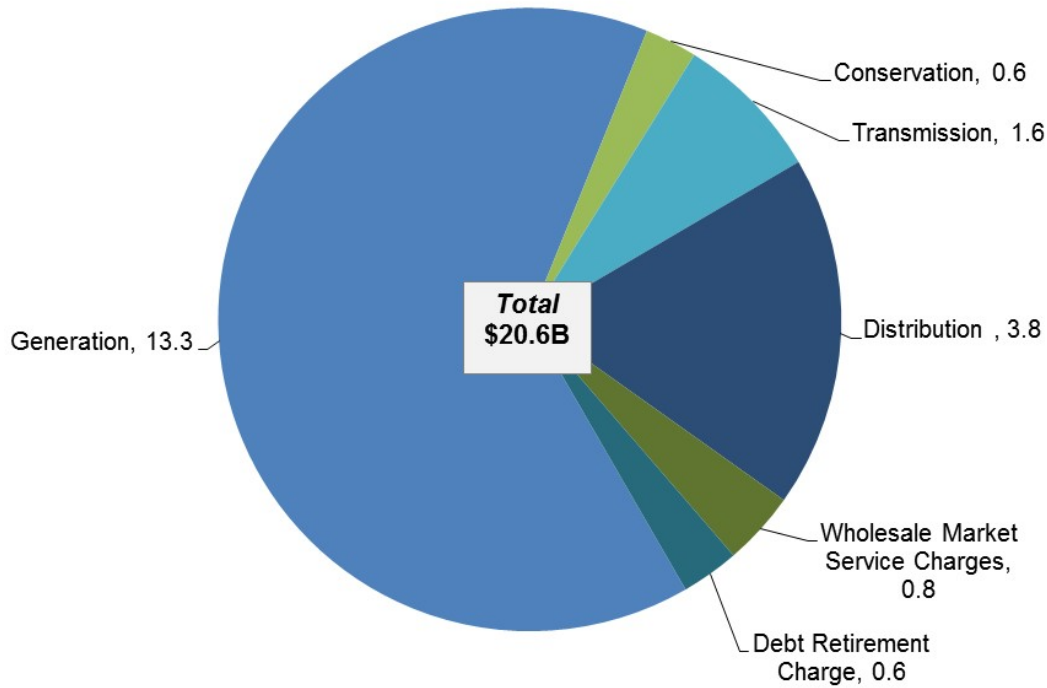
Topics	Commentary
<i>Option</i>	- Under this scenario, the GA refinancing program would end and the Province would become responsible for repaying the interest and principal amount of the first two debt offerings through the OFA. - Furthermore, the OREC rebate would be increased to provide a total reduction of 17 per cent on the typical residential bill when combined with the 8 per cent rebate. - In order to achieve the 17 per cent reduction on the total bill, a further rebate of about 10 per cent would be required in addition to the existing pre-tax OREC rebate. - The current 8 per cent rebate costs the fiscal plan an estimated \$800 million in 2017-18.
<i>Legislative / Regulation</i>	- The cancellation of the GA refinancing program would have a number of legal implications, including the repeal or amendment of the <i>Ontario Fair Hydro Plan Act, 2017</i> (OFHPA) and associated regulations. - Further legal and accounting analysis is required.
<i>Fiscal</i>	- The fiscal impact of taking over the existing obligations of GA refinancing and increasing OREC would be approximately: \$56 million per year on average from 2019-2038 in interest; \$1 billion in 2033 for principal repayment; \$0.8 billion in 2038 for principal repayment; and \$1,370 million annually on average from 2019-2035 for an additional 10 per cent rebate through OREC. - Ending GA refinancing would also increase the cost of the existing OREC by about \$280 million annually on average from 2019-2035 as the bills that it applies to would go up.
<i>Bill Impact</i>	- Initial estimates suggest a ratepayer impact of an additional 10 per cent rebate for a typical residential consumer between 2019 and 2035 would be an estimated average reduction of \$16.00 per month. - For comparison, the existing 8 per cent rebate currently provides a \$9 reduction for the typical residential consumer.

3. End the GA refinancing Program and Reduce Residential Bills by 30 Per Cent

Topics	Commentary
<i>Option</i>	- Under this scenario, the GA refinancing program would end and the Province would become responsible for repaying the interest and principal amount of the first two debt offerings through the OFA. - Furthermore, the OREC rebate would be increased to provide a total reduction of 30 per cent on residential bills when combined with the 8 per cent rebate. - In order to achieve the 30 per cent reduction on the total bill, a further rebate of about 24 per cent would be required in addition to the existing pre-tax OREC rebate. - The current 8 per cent rebate costs the fiscal plan an estimated \$800 million in 2017-18.
<i>Legislative / Regulation</i>	- The cancellation of the GA refinancing program would have a number of legal implications, including the repeal or amendment of the <i>Ontario Fair Hydro Plan Act, 2017</i> (OFHPA) and associated regulations. - Further legal and accounting analysis is required.
<i>Fiscal</i>	- The fiscal impact of taking over the existing obligations of GA refinancing and increasing OREC would be approximately: \$56 million per year on average from 2019-2038 in interest; \$1 billion in 2033 for principal repayment; \$0.8 billion in 2038 for principal repayment; and \$3,260 million annually on average from 2019-2035 for an additional 24 per cent rebate through OREC. - Ending GA refinancing would also increase the cost of the existing OREC by about \$280 million annually on average from 2019-2035 as the bills that it applies to would go up.
<i>Bill Impact</i>	- Initial estimates suggest a ratepayer impact of an additional 24 per cent per cent rebate for a typical residential consumer between 2019 and 2035 would be an estimated average reduction of \$38.20 per month. - For comparison, the existing 8 per cent rebate currently provides a \$9 reduction for the typical residential consumer.

APPENDIX – ONTARIO'S ELECTRICITY SYSTEM COST

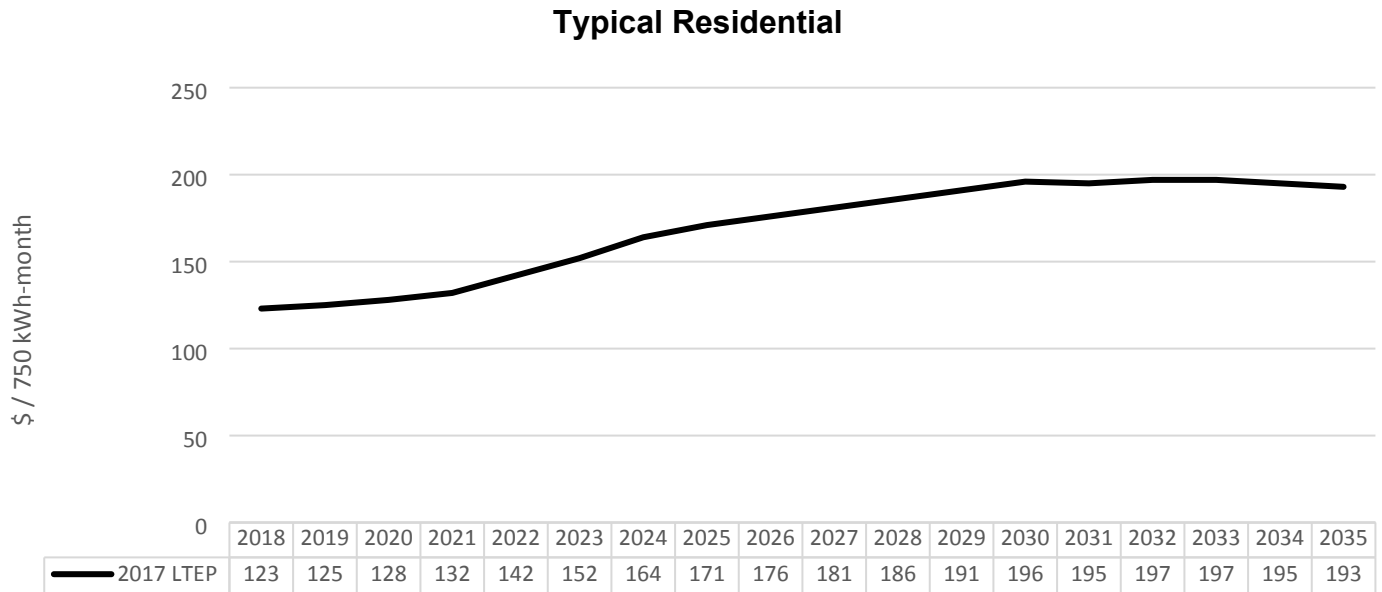
- The total Ontario electricity system cost in 2017 was approximately \$21 billion. The breakdown of these costs is shown in the below chart.



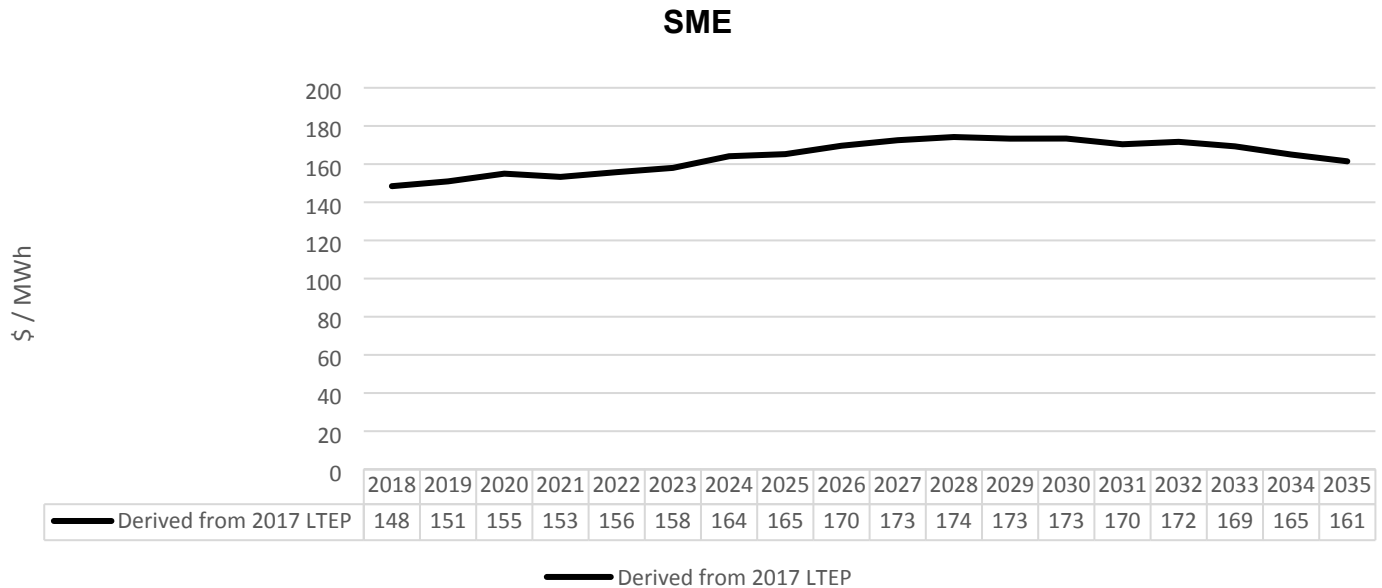
Source: 2017 LTEP Modules

APPENDIX – CURRENT ELECTRICITY BILLS FOR RESIDENTIAL, SMES AND INDUSTRIAL CONSUMERS

- Current electricity bills for residential, SMEs and industrial electricity consumers are shown below:

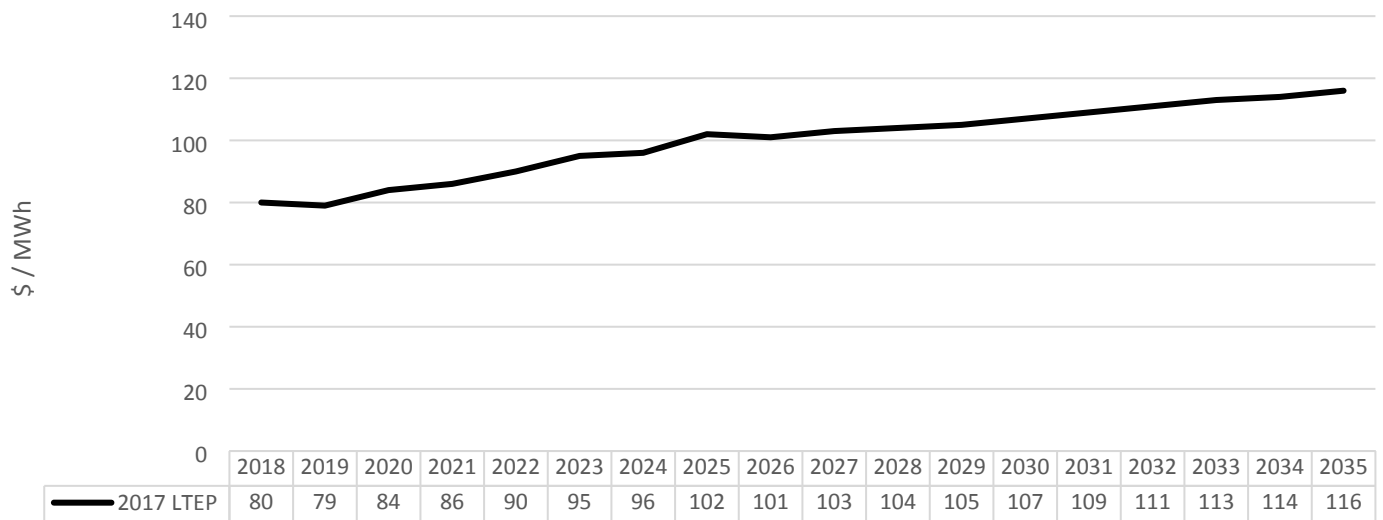


Source: 2017 LTEP



Source: Ministry of Energy

Large Industrial



Source: 2017 LTEP

APPENDIX – TAXBASED ELECTRICITY SUPPORT PROGRAMS

	Annual Cost (\$ million)	Notes
Ontario Rebate for Electricity Consumers (OREC)	810	Provides a rebate equivalent to the provincial portion of HST, or 8 per cent. The rebate saves a typical residential consumer approximately \$9 per month.
Ontario Electricity Support Program (OESP)	138	An income-tested, application-based program that provides a rebate directly on bills.
Rural or Remote Rate Protection (RRRP)	329	Available to very rural customers of Hydro One to provide a fixed credit of \$60.50/month off their distribution costs.
Distribution Rate Protection (DRP)	233	Provides rate protection to approximately 800,000 full-time residential customers of eight Local Distribution Companies (LDCs) with some of the highest distribution rates.
First Nations Delivery Credit (FNDC)	15	A 100 per cent rebate of all Delivery charges for First Nation residential customers living on reserve.
Northern Industrial Electricity Rate (NIER) Program	120	Participants receive a rebate of two cents per kilowatt hour. On average, industrial electricity prices can be reduced by over 20 per cent through the program.

Notes: The Ontario Energy and Property Tax Credit (OEPTC), Northern Ontario Energy Credit (NOEC) and Affordability Fund are not shown in the table because they do not directly reduce electricity costs. RRRP is also provided to Algoma Power and Hydro One Remote Communities Inc., however this funding is sourced from the rate-base. RRRP/DRP costs are forecasted based on proposed 2018 Hydro One distribution rates and will depend on the outcome of the distribution rate application currently before the Ontario Energy Board.

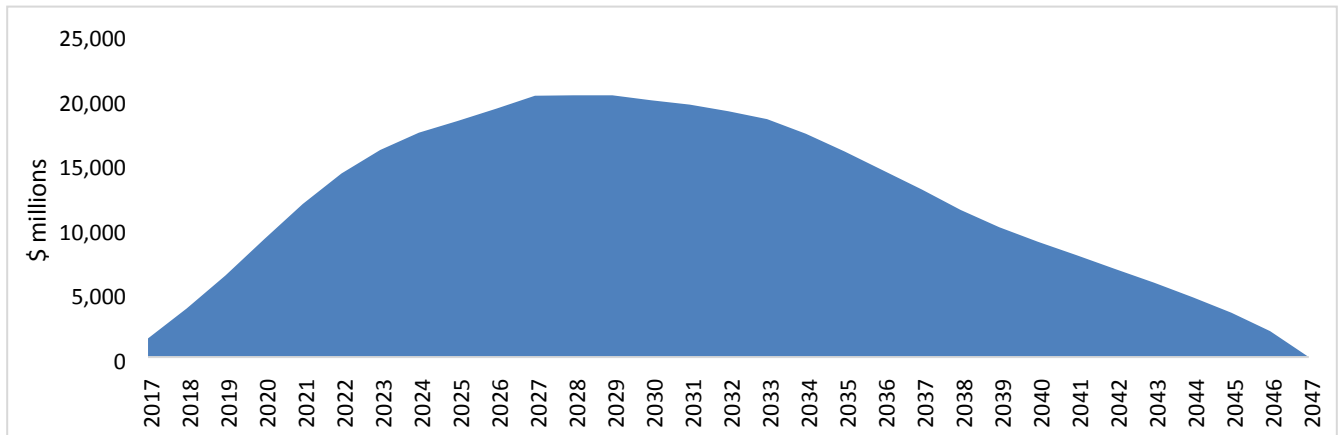
Source: Ministry of Energy

APPENDIX – LRP I PROJECTS

Qualified Applicant	Selected Proponent	Large Renewable Project	Renewable Fuel	Project capacity (MW _{ac})	Location (Project Communities)
2432243 Ontario Corp	FiniteLight LP	FiniteLight	Solar Photovoltaic (PV)	1.375	Prince Edward County
Bawitk Power Corporation 	Bawitk Power Corporation	Lock 25 Generating Station	Waterpower	3.000	Township of Selwyn
BluEarth Renewables Inc. 	Loyalist Solar LP	Loyalist Solar Project	Solar Photovoltaic (PV)	54.000	Township of Stone Mills
EDF EN Canada Development Inc. 	Barlow Energy Centre Limited Partnership	Barlow Solar Energy Centre	Solar Photovoltaic (PV)	10.000	Township of South Stormont and City of Cornwall
EDF EN Canada Development Inc. 	Pendleton Energy Centre Limited Partnership	Pendleton Solar Energy Centre	Solar Photovoltaic (PV)	12.000	Township of Alfred and Plantagenet
EDF EN Canada Development Inc. 	Romney Energy Centre Limited Partnership	Romney Wind Energy Centre	Wind (on-shore)	60.000	Municipality of Chatham-Kent and Town of Lakeshore
EDP Renewables Canada Ltd. 	Nation Rise Wind Farm Limited Partnership	Nation Rise Wind Farm	Wind (on-shore)	100.000	Municipality of North Stormont
Hydromega Services Inc. 	Trenton Lock 1 Hydro LP	Trenton Lock 1 Hydro Project	Waterpower	7.000	City of Quinte West
Invenergy LLC 	LSRA Solar Energy Partnership	Lake Simcoe Regional Airport Solar Project	Solar Photovoltaic (PV)	6.750	Township of Oro-Medonte
Invenergy LLC 	Strong Breeze Wind Power Partnership	Strong Breeze Wind Project	Wind (on-shore)	57.500	Municipality of Dutton Dunwich
Peterborough Utilities Inc. 	Peterborough Utilities Buckhorn Hydro LP	Peterborough Utilities Buckhorn Hydro	Waterpower	2.500	Municipality of Trent Lakes and Township of Selwyn
Peterborough Utilities Inc. 	Peterborough Utilities Hydro 24 LP	Peterborough Utilities Dam 24 Hydro	Waterpower	3.000	Township of Selwyn
Renewable Energy Systems Canada Inc. 	Otter Creek Wind Farm Limited Partnership	Otter Creek Wind Farm Project	Wind (on-shore)	50.000	Municipality of Chatham-Kent
Renewable Energy Systems Canada Inc. 	Parc éolien Gauthier LP	Parc éolien Gauthier	Wind (on-shore)	32.000	Municipality of The Nation and Township of Champlain
SKY SOLAR (CANADA) LTD.	SKY SOLAR RYERSON LRP LIMITED PARTNERSHIP	SKY ONE	Solar Photovoltaic (PV)	11.760	Township of Ryerson
SunEdison Canadian Construction LP 	Nanticoke Solar LP	Nanticoke Solar	Solar Photovoltaic (PV)	44.000	Haldimand County

 waterpower project – Class EA
 REA not submitted
 REA submitted
 REA under technical review
 REA approved

APPENDIX – CURRENT OFHP DEBT BALANCE FORECAST



Note: Based on Ministry forecasts consistent with the Fair Allocation Amount (FAA) provided to Ontario Power Generation (OPG) in September 2017. Assumes 5 per cent average interest rate over the 30-year life of the program and includes estimates of OPG fees. Estimates are subject to change based on a number of variables, including interest rates.