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Ontario

MINISTRY OF
ENERGY

Rate Mitigation Plan Options

Working Draft

February 8, 2017

CONFIDENTIAL DRAFT

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 Hydro One transmission and 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).
  - Increasing cost effectiveness and improving efficiency by adopting new electricity market approaches (e.g., competitive LRP, no new NUG contracting).

- 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.

Options

- In recognition of the costs borne by ratepayers related to decarbonizing and modernizing the province's electricity sector, options for further rate mitigation include:

1. Global Adjustment (GA) Smoothing – Provide significant and immediate rate relief through cost deferral of the GA.

2. Electricity Support Programs to Help the Most Vulnerable – Provide a greater focus on vulnerable consumers:
   - Rural or Remote Electricity Rate Protection (RRRP) Enhancement (Delivery Charge Relief);
   - Ontario Electricity Support Program (OESP) Expansion;
   - LDC Affordability Fund; and
   - First Nations Rate.

3. Ontario Energy Board (OEB) – Identify opportunities for OEB red-tape reduction and future LDC efficiencies and rates.

4. Ontario Power Generation (OPG) – Find further efficiencies in operations and pass on savings to ratepayers.

5. Independent Electricity System Operator (IESO) – Modernize Ontario's electricity market through electricity Market Renewal initiatives.

GA Smoothing – Key Assumptions

- The following slides show potential rate mitigation measures to meet a targeted 25% 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 across the province due to differences in *current prices*, *distribution rates* and *consumption patterns*.
- The impacts are also based on a Global Adjustment (GA) forecast. Since the GA fluctuates and 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.

1a. GA Smoothing for All – 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.

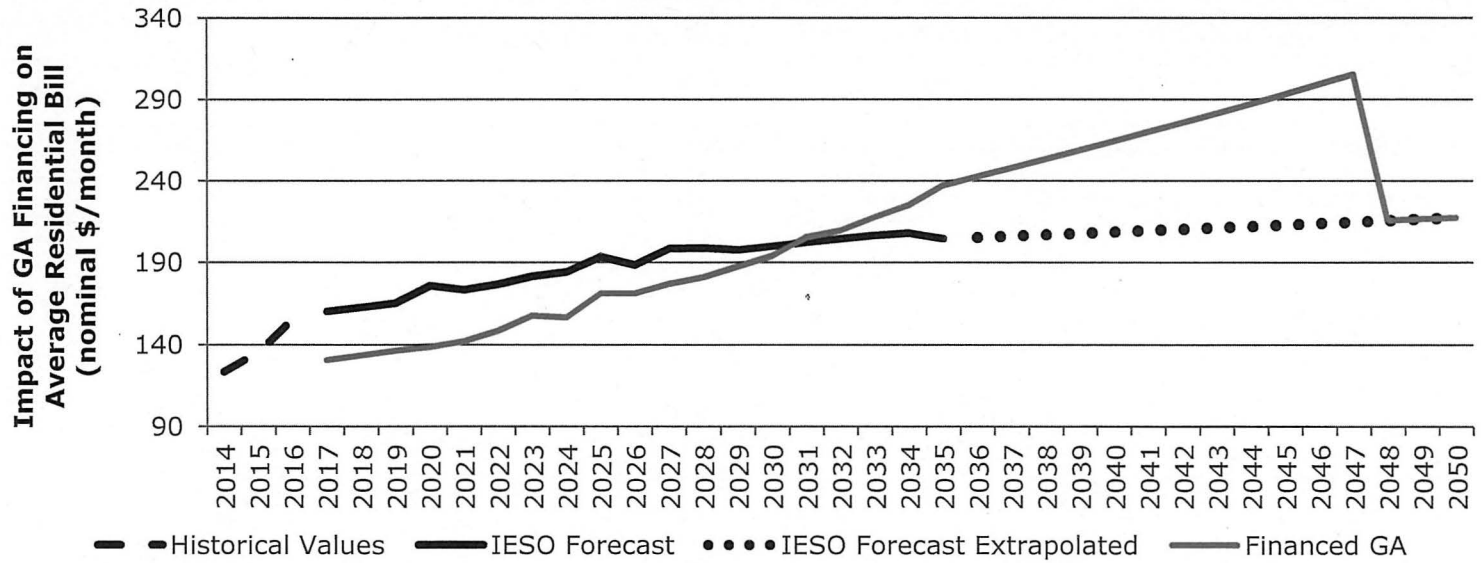
Residential (750 kWh/month)	Actual 2016	2017	2018	2019	2020	2021
Total Bill (includes HST)	**163**	**172**	**175**	**178**	**189**	**187**
Total Bill (excludes HST)	145	153	155	158	168	165
Impact of GA Financing		-26	-26	-26	-33	-28
Impact of OPG Efficiencies		-1	-1	-1	-1	-1
Impact of Tax-Basing Social 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**	**126**	**121**	**123**	**124**	**127**
Year-over-Year Change		-21%	-4%	2%	1%	2%
Change from Forecast		-24%	-24%	-24%	-28%	-25%

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**	**65**	**67**	**62**	**63**	**68**
Year-over-Year Change		-27%	3%	-8%	2%	8%
Change from Forecast		-28%	-28%	-29%	-33%	-29%

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.

1a. GA Smoothing for All (Borrow $4.7 billion in 2017)



	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 *($/month)*	-26.3	-26.1	-25.8	-33.1	-28.1	-25.4	-21.6	-25.0	-19.8	-15.4	-19.1	-15.9	-9.2	-5.4	2.8	4.2	9.8	14.9	28.7	32.7	36.7	40.8	44.9	49.1	53.3	57.5	61.8	66.2	70.7	75.3	79.9	0.0
Total Accumulated Debt *($ billion)*	4.7	9.5	14.6	21.2	27.2	33.1	38.6	45.0	50.8	56.1	62.3	68.3	73.4	78.1	81.6	85.0	87.6	89.4	88.7	87.2	84.8	81.6	77.3	72.1	65.7	58.2	49.4	39.3	27.8	14.7	0.0	0.0
Total Change in Accumulated Debt *($ billion)*	4.7	4.9	5.0	6.6	6.0	5.9	5.5	6.4	5.8	5.3	6.2	6.0	5.1	4.7	3.5	3.4	2.6	1.8	-0.7	-1.5	-2.4	-3.3	-4.2	-5.3	-6.4	-7.5	-8.8	-10.1	-11.5	-13.1	-14.7	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 plus 2.5 percentage points with no limit 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.

1b. GA Smoothing for All – Residential Bills Lowered 25% (with Tax-Base Funded 8% Rebate and Social Programs, RPP held constant)

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

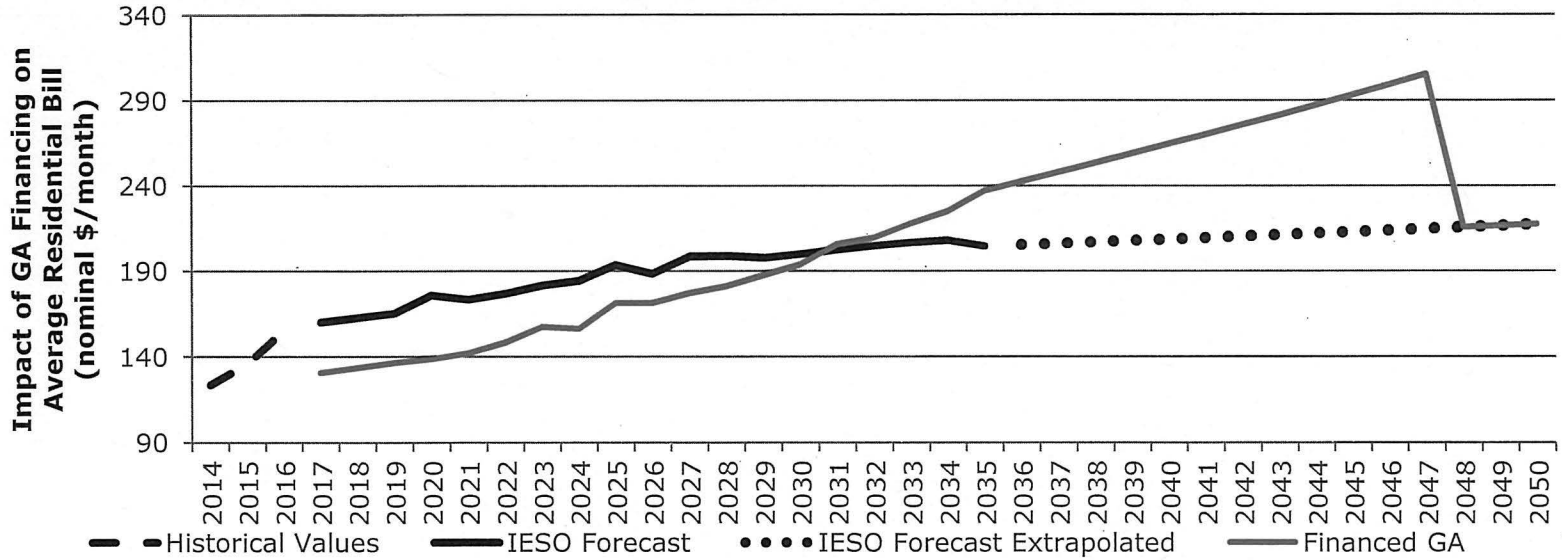
Residential (750 kWh/month)	Actual 2016	2017	2018	2019	2020	2021
Total Bill (includes HST)	**163**	**172**	**175**	**178**	**189**	**187**
Total Bill (excludes HST)		153	155	158	168	165
Impact of GA Financing (includes flat RPP commodity rate to the end of 2021)		-26	-26	-26	-33	-28
Impact of OPG Efficiencies		-1	-1	-1	-1	-1
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**	**126**	**121**	**123**	**124**	**127**
Year-over-Year Change		-21%	-4%	2%	1%	2%
Change from Forecast		-24%	-24%	-24%	-28%	-25%

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**	**65**	**67**	**62**	**63**	**68**
Year-over-Year Change		-27%	3%	-8%	2%	8%
Change from Forecast		-28%	-28%	-29%	-33%	-29%

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.

1b. GA Smoothing for <u>All</u> (Borrow $4.7 billion in 2017)



	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 *($/month)*	-26.3	-26.1	-25.8	-33.1	-28.1	-25.4	-21.6	-25.0	-19.8	-15.3	-19.1	-15.8	-9.2	-5.4	2.8	4.2	9.8	14.9	28.7	32.7	36.7	40.8	44.9	49.1	53.3	57.5	61.8	66.2	70.7	75.3	79.9	0.0
Total Accumulated Debt *($ billion)*	4.7	9.5	14.6	21.2	27.2	33.1	38.6	45.0	50.8	56.0	62.3	68.3	73.4	78.1	81.6	85.0	87.6	89.4	88.7	87.2	84.8	81.5	77.3	72.1	65.7	58.2	49.4	39.3	27.8	14.7	0.0	0.0
Total Change in Accumulated Debt *($ billion)*	4.7	4.9	5.0	6.6	6.0	5.9	5.5	6.4	5.8	5.3	6.2	6.0	5.1	4.7	3.5	3.4	2.6	1.8	-0.7	-1.5	-2.4	-3.3	-4.2	-5.3	-6.4	-7.5	-8.8	-10.1	-11.5	-13.1	-14.7	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 plus 2.5 percentage points with no limit 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.

1c. GA Smoothing for All – Residential Bills Lowered 25% (with Tax-Base Funded 8% Rebate and Social Programs, 3% increase)

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

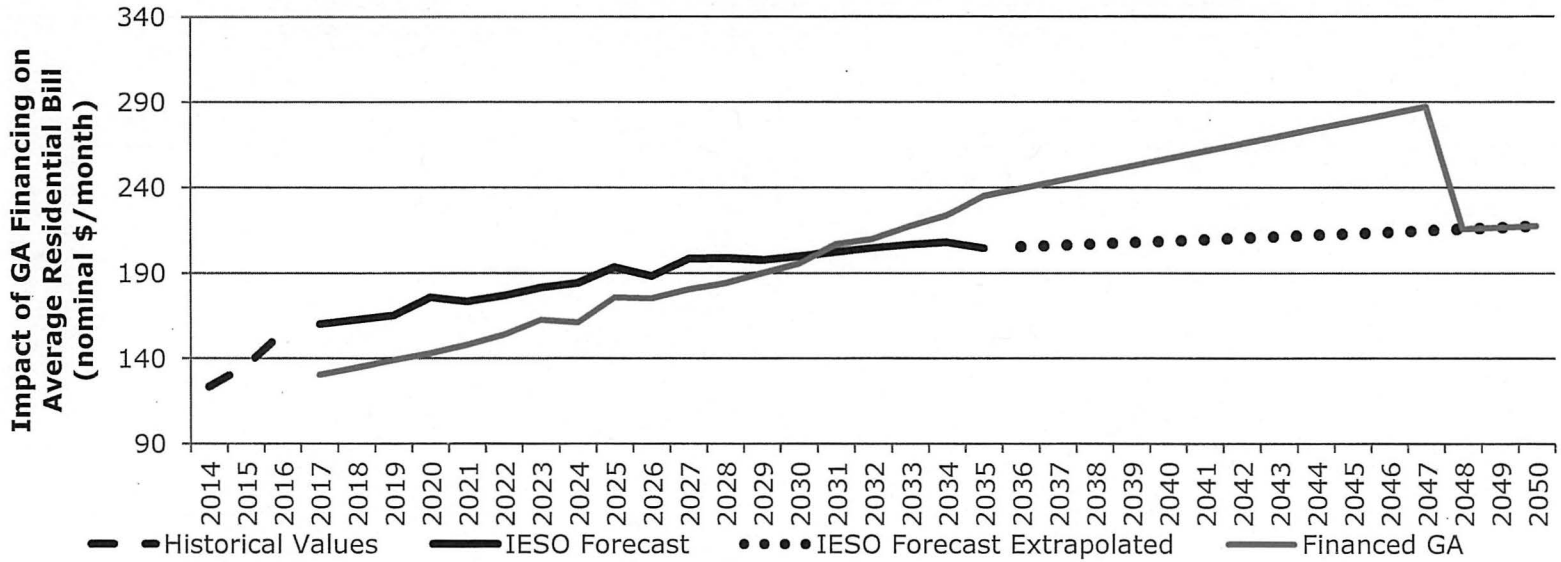
Residential (750 kWh/month)	Actual 2016	2017	2018	2019	2020	2021
Total Bill (includes HST)	**163**	**172**	**175**	**178**	**189**	**187**
Total Bill (excludes HST)		153	155	158	168	165
Impact of GA Financing		-26	-25	-23	-29	-23
Impact of OPG Efficiencies		-1	-1	-1	-1	-1
Impact of Tax-Basing Social Programs		-2	-2	-2	-3	-3
Subtotal		123	127	131	135	139
8% rebate		-10	-10	-10	-11	-11
HST		16	16	17	17	18
Revised Bill (includes HST)	**163**	**129**	**133**	**137**	**141**	**146**
Year-over-Year Change		-21%	3%	3%	3%	3%
Change from Forecast		**-25%**	**-24%**	**-23%**	**-25%**	**-22%**

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**	**126**	**122**	**126**	**129**	**134**
Year-over-Year Change		-21%	-3%	3%	2%	4%
Change from Forecast		-24%	-23%	-22%	-25%	-21%

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**	**65**	**68**	**64**	**66**	**73**
Year-over-Year Change		-27%	5%	-6%	3%	9%
Change from Forecast		-28%	-26%	-27%	-30%	-24%

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.

1c. GA Smoothing for All (Borrow $4.7 billion in 2017)



	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 *($/month)*	-26.3	-24.8	-23.3	-29.2	-22.8	-20.4	-16.9	-20.6	-15.8	-11.7	-15.9	-13.2	-7.0	-3.8	3.8	4.6	9.5	13.8	26.8	30.0	33.1	36.2	39.3	42.4	45.4	48.5	51.5	54.5	57.5	60.6	63.6	0.0
Total Accumulated Debt *($ billion)*	4.7	9.3	13.9	19.8	24.8	29.7	34.2	39.5	44.4	48.7	54.0	59.1	63.3	67.2	70.0	72.8	74.8	76.1	75.1	73.4	71.0	67.9	64.0	59.3	53.8	47.4	40.0	31.6	22.2	11.7	0.0	0.0
Total Change in Accumulated Debt *($ billion)*	4.7	4.6	4.6	5.9	5.0	4.9	4.5	5.4	4.8	4.3	5.3	5.1	4.3	3.9	2.8	2.8	2.0	1.3	-1.0	-1.7	-2.4	-3.1	-3.9	-4.7	-5.5	-6.4	-7.4	-8.4	-9.4	-10.5	-11.7	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 plus 1.2 percentage points with no limit 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.

1d. 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.

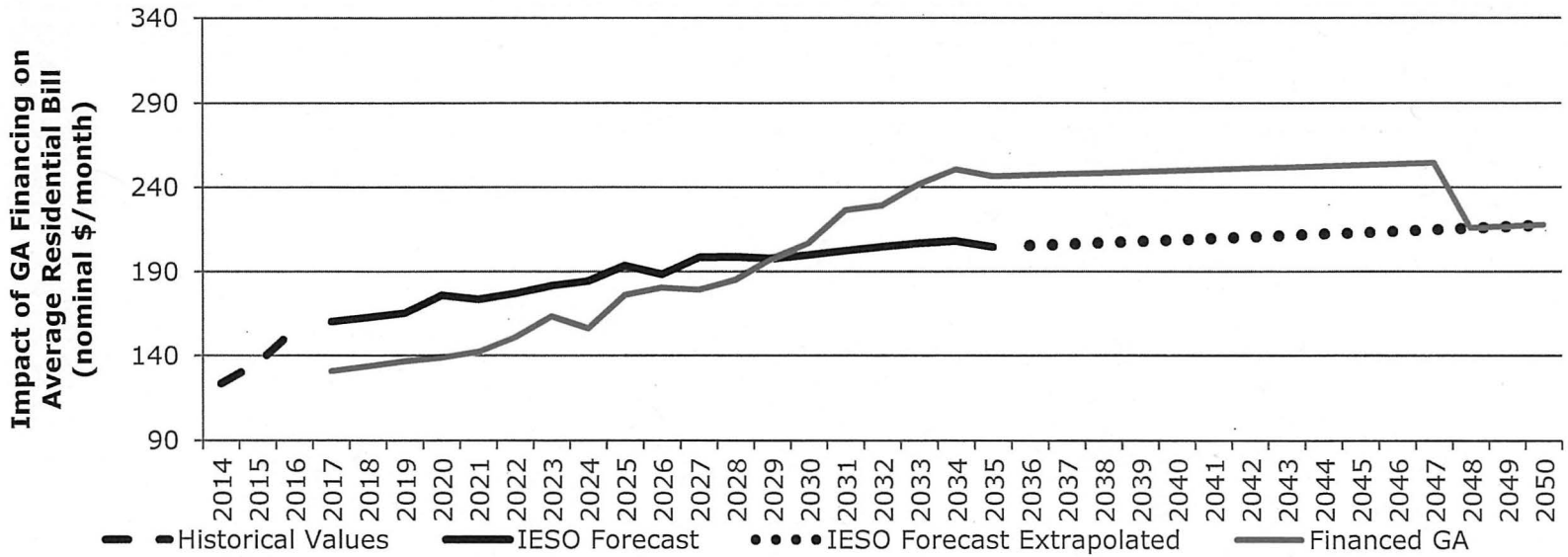
Residential (750 kWh/month)	Actual 2016	2017	2018	2019	2020	2021
Total Bill (includes HST)	**163**	**172**	**175**	**178**	**189**	**187**
Total Bill (excludes HST)	145	153	155	158	168	165
Impact of GA Financing		-26	-26	-26	-33	-28
Impact of OPG Efficiencies		-1	-1	-1	-1	-1
Impact of Tax-Basing Social 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**	**161**	**156**	**157**	**168**	**164**
Year-over-Year Change		1%	-3%	1%	7%	-2%
Change from Forecast		-3%	-3%	-3%	-3%	-3%

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**	**87**	**89**	**84**	**91**	**91**
Year-over-Year Change		-3%	2%	-6%	9%	1%
Change from Forecast		-4%	-4%	-5%	-5%	-5%

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.

1d. GA Smoothing for RPP Only (Borrow $2.2 billion in 2017)



	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 *($/month)*	-26.3	-26.1	-25.8	-33.1	-28.1	-23.5	-16.6	-25.2	-15.7	-7.5	-17.4	-12.4	-0.1	5.7	21.1	21.4	30.7	37.3	36.8	36.7	36.5	36.4	36.2	36.1	35.9	35.8	35.6	35.5	35.3	35.2	35.0	0.0
Total Accumulated Debt *($ billion)*	2.2	4.5	6.8	9.9	12.7	15.3	17.4	20.4	22.7	24.5	27.2	29.6	31.1	32.2	32.1	32.0	31.0	29.5	27.8	26.1	24.3	22.3	20.3	18.2	16.0	13.6	11.2	8.6	5.9	3.0	0.0	0.0
Total Change in Accumulated Debt *($ billion)*	2.2	2.3	2.4	3.1	2.8	2.6	2.1	3.0	2.3	1.8	2.7	2.4	1.5	1.1	-0.1	-0.1	-0.9	-1.6	-1.7	-1.7	-1.8	-1.9	-2.0	-2.1	-2.2	-2.3	-2.5	-2.6	-2.7	-2.9	-3.0	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.

1e. GA Smoothing for RPP Only – Residential Bills Lowered 20% (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.

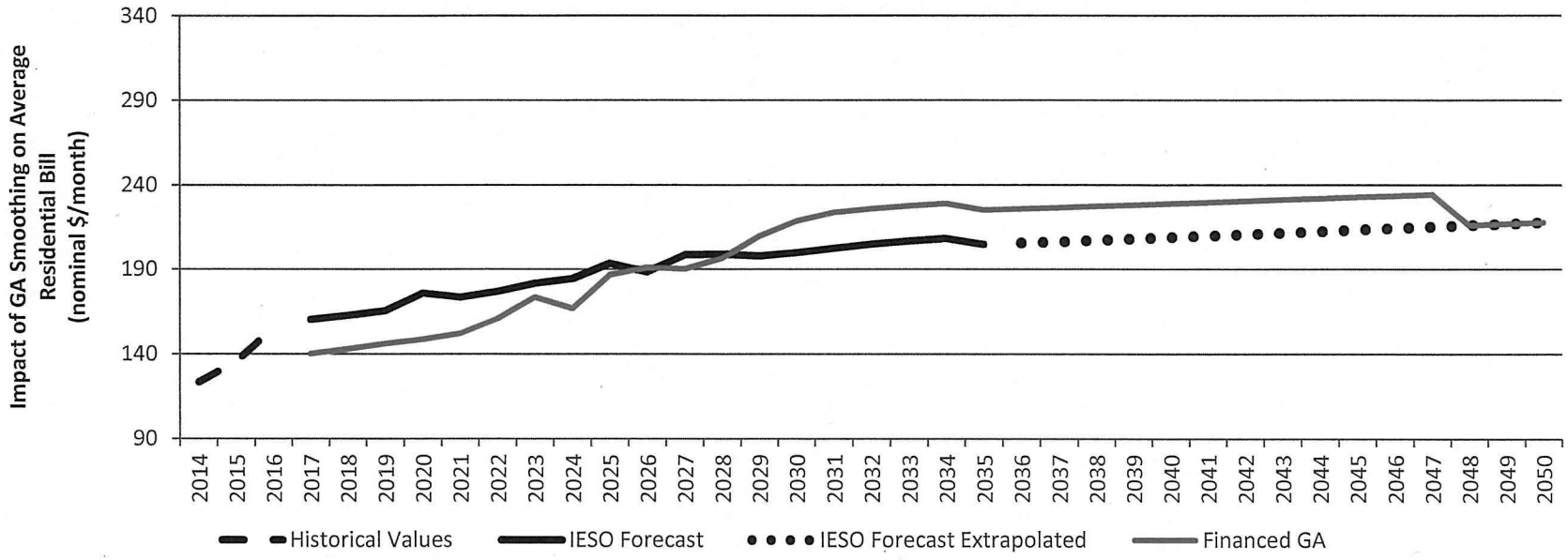
Residential (750 kWh/month)	Actual 2016	2017	2018	2019	2020	2021
Total Bill (includes HST)	**163**	**172**	**175**	**178**	**189**	**187**
Total Bill (excludes HST)	145	153	155	158	168	165
Impact of GA Financing		-18	-18	-17	-24	-19
Impact of OPG Efficiencies		-1	-1	-1	-1	-1
Impact of Tax-Basing Social 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**	**161**	**156**	**157**	**168**	**164**
Year-over-Year Change		1%	-3%	1%	7%	-2%
Change from Forecast		-3%	-3%	-3%	-3%	-3%

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**	**87**	**89**	**84**	**91**	**91**
Year-over-Year Change		-3%	2%	-6%	9%	1%
Change from Forecast		-4%	-4%	-5%	-5%	-5%

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.

1e. GA Smoothing for RPP Only (Borrow $1.5 billion in 2017)



	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 *($/month)*	-18.1	-17.7	-17.3	-24.4	-19.2	-14.4	-7.4	-15.8	-6.1	2.4	-7.4	-2.2	10.3	16.3	18.6	18.5	18.3	18.2	18.0	17.9	17.8	17.7	17.7	17.6	17.5	17.5	17.4	17.3	17.2	17.2	17.1	0.0
Total Accumulated Debt *($ billion)*	1.5	3.0	4.6	6.9	8.8	10.4	11.6	13.5	14.6	15.2	16.6	17.6	17.7	17.2	16.6	15.9	15.1	14.4	13.6	12.7	11.8	10.9	9.9	8.9	7.8	6.7	5.4	4.2	2.9	1.5	0.0	0.0
Total Change in Accumulated Debt *($ billion)*	1.5	1.5	1.6	2.2	1.9	1.6	1.1	1.9	1.2	0.6	1.4	1.0	0.1	-0.4	-0.7	-0.7	-0.7	-0.8	-0.8	-0.8	-0.9	-0.9	-1.0	-1.0	-1.1	-1.1	-1.2	-1.3	-1.3	-1.4	-1.5	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 $1.5 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.

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.

- 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.

- 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.

1. GA Smoothing – Implementation Models

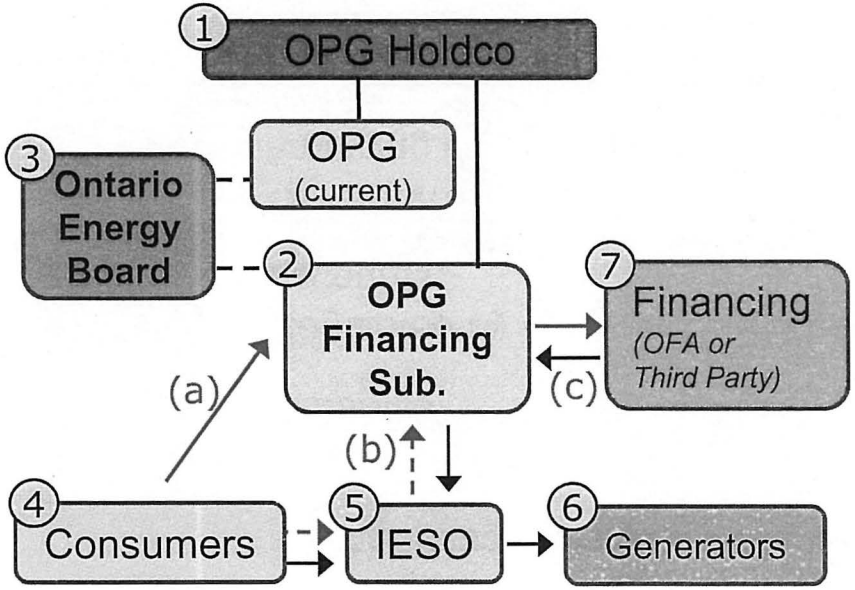
- The Province continues to consider mechanisms to finance and administer GA smoothing.
- Two leading options are under consideration:
  - Option A: Allow OPG or IESO assume responsibility for GA smoothing; and
  - Option B: Create a new special purpose entity, independent from the Province that would be dedicated to GA smoothing.

1. GA Smoothing – Option A: OPG

- OPG is potentially positioned to administer GA Smoothing for the following reasons:
  - OPG represents about half of Global Adjustment (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;
  - OPG borrows from Province, and from 3rd parties, allowing to access lowest cost financing option; and
  - Any incremental returns earned by OPG (although expected to be limited) would go back to taxpayers.

1. GA Smoothing – Option A: OPG

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



→ Early year fund flow

→ Future Repayment Mechanism

(1) OPG would create a holding company which would own shares in the existing OPG Inc., as well as a new Financing Subsidiary.

(2) 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).

(3) OEB, while continuing to regulate the current OPG, provides light-touch oversight of the OPG Financing Sub., as well as the GA smoothing mechanism.

(4) 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).

(5) 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.

(6) Generators continue to receive payments from IESO according to existing contract / regulatory structures.

(7) 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.

1. GA Smoothing – Option A: OPG

- **Considerations**
  - Risk that OPG no longer receives Government Business Enterprise (GBE) accounting treatment.
    - Further analysis is required to determine whether the new financing subsidiary materially changes the business, would provide a commercial service, and would be self-sustaining (see the following slide for details on GBE accounting characteristics).
  - Need to develop a structure that sufficiently "ring-fences" the OPG Financing Subsidiary in order to insulate OPG's existing business lines, while also ensuring that OPG cannot benefit, nor assume responsibility for losses.
  - Both the Holdco and Subsidiaries will require rigorous oversight and governance structures (e.g., boards, MOAs etc.).
  - OPG will require a recovery mechanism that provides sufficient clarity and certainty to allow for cost-effective borrowing, while allowing for safety valves in the event of unexpected circumstances.
  - Consider interaction between OPG Financing subsidiary and IESO (e.g., is a collection services agreement required).

- **Immediate Next Steps**
  - Continue to work with OPG to build out recovery mechanism, key elements of regulatory / legislative framework, consider governance structures, and refine modelling.
  - OPG could solicit interest in financing this sort of construct from 1 or 2 pension funds (without specifics). Depending on viability and associated cost, work with accounting experts to determine importance of this option.
  - Develop regulatory framework in coordination with OEB and OPG.

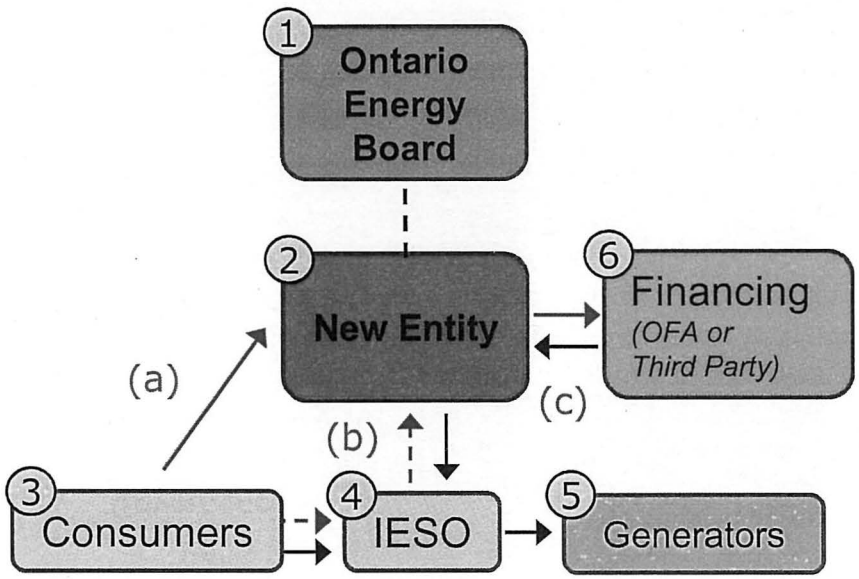
1. GA Smoothing – Option A: IESO

- In order for IESO to meet Government Business Enterprise accounting treatment, the following characteristics need to be considered:

Characteristic	Guidance & Comments	Findings & Recommendations
Separate with power to contract, sue and be sued	• IESO is a not-for-profit organization, non-taxable, corporation established pursuant to Part II of the Electricity Act, 1998. • IESO is not an agent of the Crown for any purpose • IESO has powers of a natural person	• According to KPMG characteristic is met
Delegated financial and operational authority to carry on a business	• Board of directors has been delegated the financial and operational authority to carry on the business. • Need to accept that the definition of a business can include providing economic benefits to participants (not limited to providing a return to investors) • IESO is allowed to retain profits to carry out its objects	• According to KPMG characteristic is met
Sells good and services to individuals and organizations outside of the government reporting entity as its principal activity	• IESO provides various services to market participants for the ultimate benefits of Ontario customers. • IESO has two OEB approved fees: one for electricity exports and one for electricity withdrawals for use in Ontario. These fees are charged on a per kWh rate, similar to LDCs and transmission companies	• According to KPMG characteristic is met under current construct • Although the smoothing mechanism is unlikely to be considered a service provided outside of the government entity, other IESO services continue to meet this test and predominate
It can maintain operations and meet liabilities from revenues received from sources outside of the government reporting entity	• IESO does not receive transfer payments from the Province. All costs are to be recovered from market participants. • Sustainability may be more challenging to demonstrate given implied government backstop needed to enable financing, unless recovery mechanism allows for a cushion for losses (e.g., equity returns on a part of financing)	• According to KPMG characteristic is met under current construct • Develop recovery mechanism with sufficiently robust to reasonably guarantee repayment, while providing a cushion for any losses

1. GA Smoothing – Option B: New Entity

- The diagram outlines a implementation approach that includes a new entity, which would hold the debt and the receivable from ratepayers.



→ Early year fund flow

→ Future Repayment Mechanism

1. The OEB oversees the new entity, as well as the GA smoothing mechanism on an ongoing basis.
2. The New Entity 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).
3. Electricity Consumers pay IESO a portion of the GA in early years. In the future, the New Entity recovers principle, interest and administrative costs from consumers. Customers bill presentation remains unchanged (costs should diminish in early years).
4. The IESO pays generators (in early years), partially from consumers and partially financed by the New Entity. (b) The IESO provides collection services to New Entity under a service contract.
5. Generators continue to receive payments from IESO according to existing contract / regulatory structures.
6. The OFA or a 3rd party lender funds the GA shortfall in early years and receives payments from the New Entity as debt is repaid. (c) Debt is subject to a contract between the New Entity and the lender.

1. GA Smoothing – Option B: New Entity

Framework and Oversight

- Legislative framework to establish constraints and limit authority of the new entity taking either a prescriptive or flexible approach.
- Ontario Energy Board could be empowered to approve GA smoothing schedule and oversee operations of the New Entity (compensation etc.).

Governance

- To achieve the desired accounting treatment, the entity would have to be structured as follows:
  - While the Province would choose the first board of directors or trustees, future directors or trustees would be selected in accordance with a mechanism created at the time the entity is created. The Province would have no ongoing role in appointments or in selection of key personnel, including the CEO.
  - The Province would not have a determining vote in the entity's business decisions.
  - The Province would have no recourse to the entity's assets and would not be responsible for the debt.
  - The Province could not dissolve the entity and having access to its assets and obligations.
  - The Province would not be able to change the mission or mandate of the entity, once it is created.
  - The Province would have no right to approve business plans or budgets or to require amendments to them.
  - The Province would not be able to alter the terms of the entity's debt arrangements.
  - The Province would not be able to affect the debt by controlling the entity's financial and operating policies.
  - The Province would not have input into the operational and financial policies of the entity, including accounting, personnel, compensation, collective bargaining or deployment of resources. For example, legislation like the *Broader Public Sector Executive Compensation Act, 2014* would not apply.
- As a result:
  - Staff would not be OPS employees.
  - Oversight would not be provided by Offices of the Legislature (AG, FAO etc.).
  - The *Freedom of Information and Protection of Privacy Act* would not apply.

2a. RRRP Enhancement – Accelerating Fixed Rate Benefit

- Currently, LDCs recover their costs through a combination of a fixed monthly charge and a volumetric charge based on kilowatt hours used. As a result, customers of the same LDC will be charged different amounts for distribution based on their consumption level.
- However, the OEB has made a determination to establish fixed distribution rates for residential consumers, in recognition that the majority of distribution costs are irrespective of the volume of consumption. The OEB believes moving to fixed rates will:
  - Enable residential customers to leverage new technologies, manage costs through conservation, and better understand the value of distribution services.
  - Establish a fairer way to recover the costs of providing distribution service.
  - Provide greater revenue stability for distributors, which will position them for technological change in the sector, remove any disincentive to promote conservation, and help with their investment planning.
- Fixed rates will be set at the average consumption level for a rate class in order to recover the same amount of revenue as the mix of fixed and variable charges does today. As a result, below-average volume consumers will experience cost increases and above-average volume consumers will experience cost decreases.
- The OEB is gradually phasing-in the move to fixed rates in order to mitigate the impact of these increases to below-average volume consumers. Most LDCs will receive fully fixed rates in 2019. Hydro One will be transitioned over a longer timeframe (2022-2023).
  - Hydro One's density-based rate classes and recent re-allocation of costs between the classes results in significant impacts for Hydro One low volume consumers. Providing the longer timeframe allows for the impact of the change to be held at less than 10% for low volume customers at the 10th percentile of consumption.

2a. RRRP Enhancement – Accelerating Fixed Rate Benefit Impacts

- Hydro One has estimated that if it accelerated the move to fixed rates effective 2017, the rates would be as follows:
  - R1: $55.70/month – the same cost as a customer who consumes 955kWh/month today.
  - R2: $64.64/month, when factoring in the $60.50 RRRP support – the same cost as a customer who consumes 1200kWh/month today.
- Using sample customer data provided by Hydro One, it is estimated that approximately 2/3^{rds} of Hydro One R1 and R2 customers would experience cost increases if this was implemented:
  - R1: ~146k customers would see cost decreases, and ~298k customers would see cost increases.
  - R2: ~117k customers would see cost decreases, and ~217k customers would see cost increases.
- However, support from the fiscal plan can be used to accelerate the move to fixed rates for those high volume consumers who benefit – leaving low volume consumers to experience no change.
  - Hydro One estimates this would cost $64 million. If the move was expanded to include Hydro One Urban (UR rate class) and Seasonal customers, the cost would be ~$90 million.
  - When layering on the current RRRP support of $242 million, program costs are between $306-$332 million.
  - As the move to fixed rates was completed, fiscal plan support for these customers could be withdrawn.

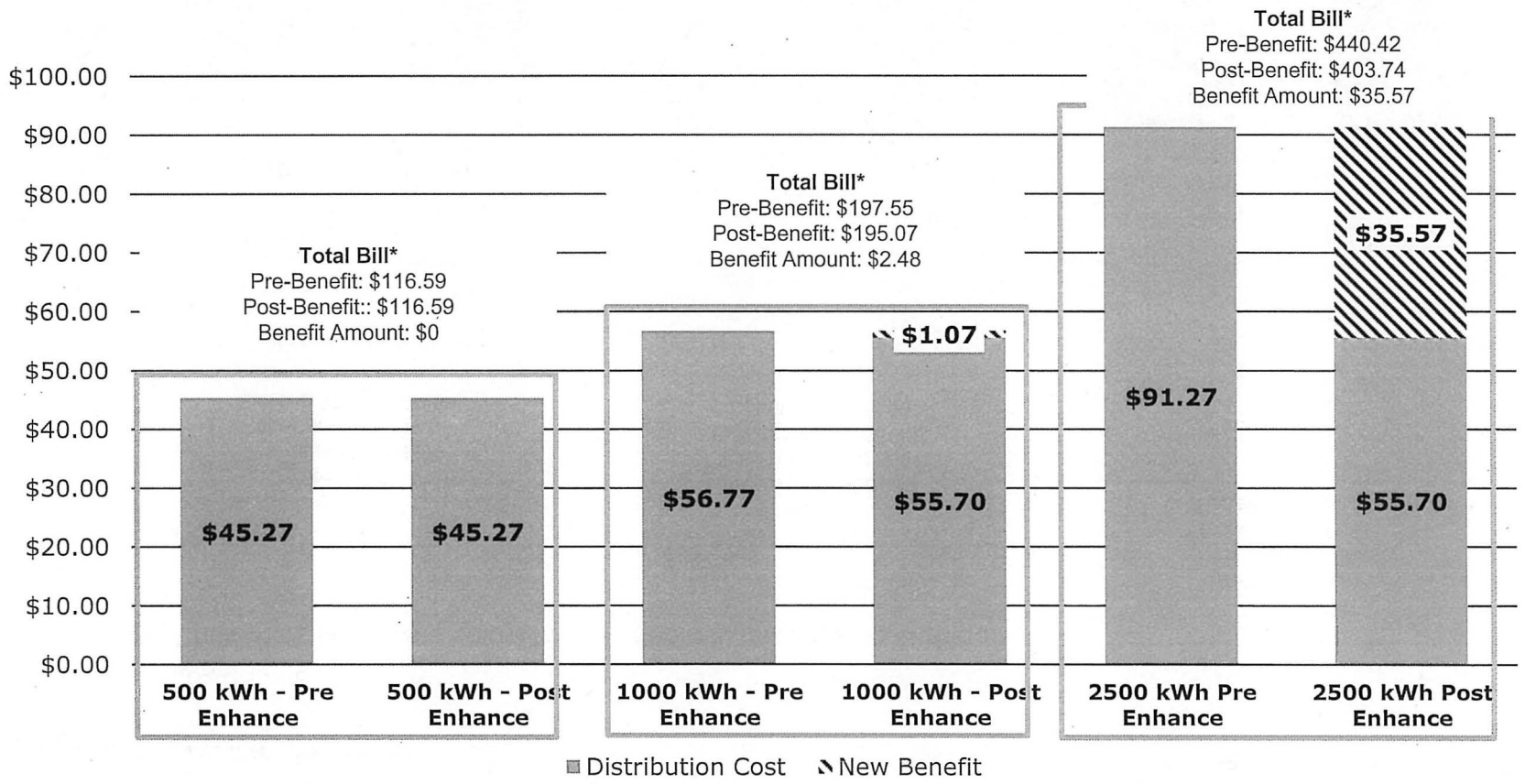
Accelerated Fixed Rate Benefit Fiscal Impact						
	2018	**2019**	**2020**	**2021**	**2022**	**2023**
Fixed Rate Enhancement*	$64M-$90M	$52-$72M	$38M-$54M	$26M-$36M	$13M-$18M	$0
Total RRRP** (inclusive fixed rate enhancement, excluding Algoma Power & Hydro One Remotes)	$306-$332M	$300-$320M	$293-$309M	$287-$297M	$281M-$286M	$275M

*Range depends on if just R1 & R2 or all rate classes. Cost decrease is estimated evenly, which could change based on Hydro One future rate impacts.

** Assumes 2.6% annual increase as estimate of average distribution rate increase

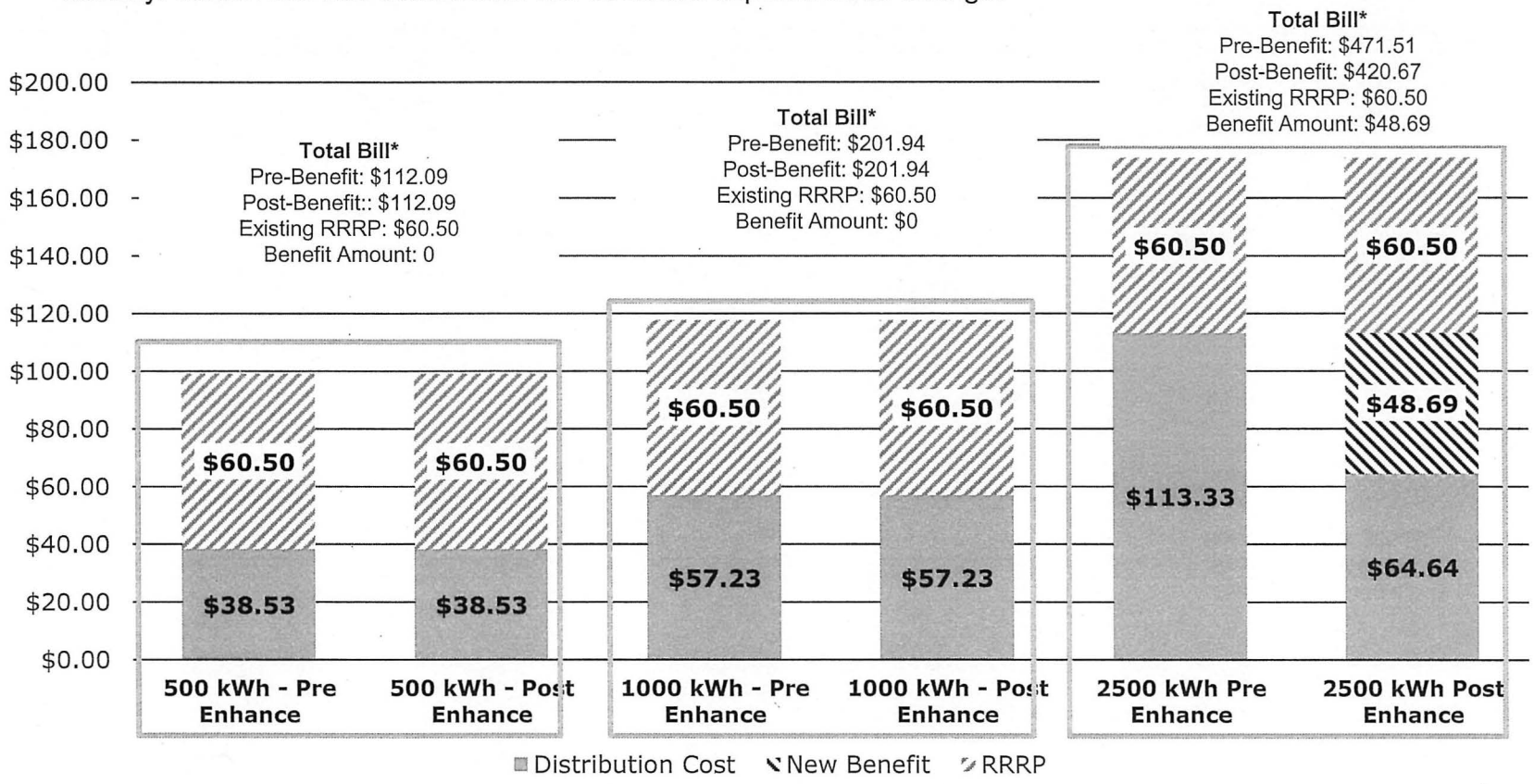
2a. RRRP Enhancement – Hydro One Mid-Density (R1) Ratepayer Impacts

- Under this option, R1 customers will not pay more than $55.70 for distribution service. Customers with costs below this threshold experience no change.



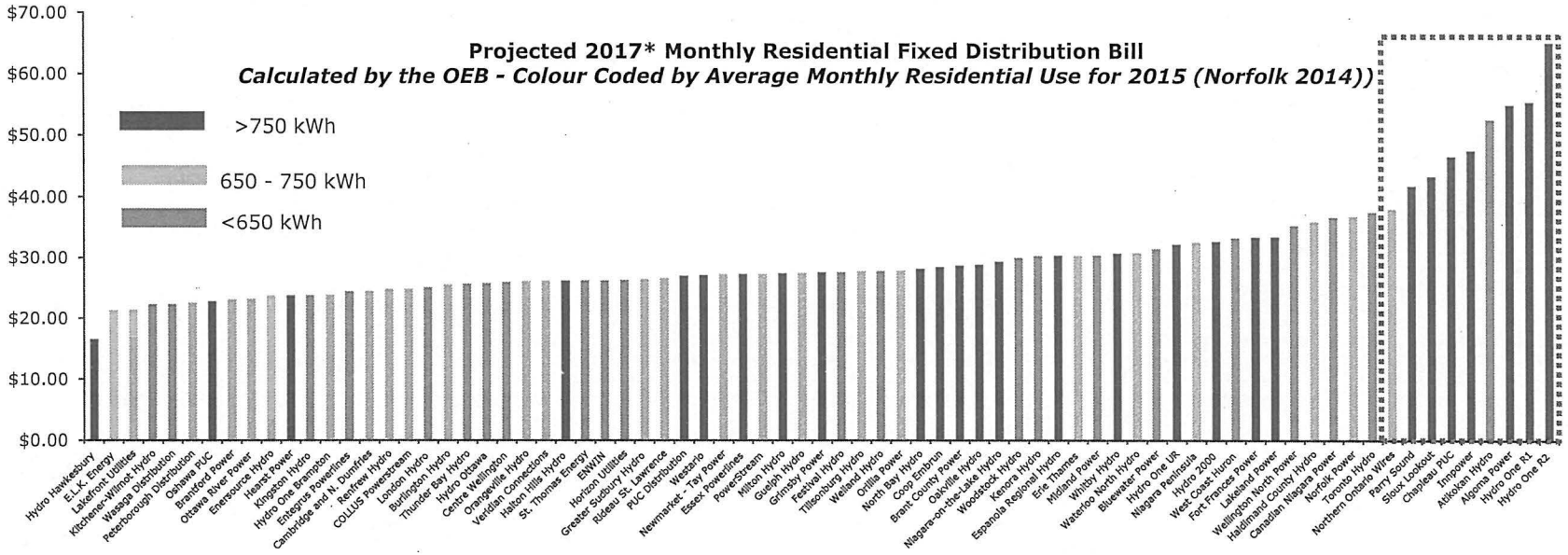
2a. RRRP Enhancement – Hydro One Low-Density (R2) Ratepayer Impacts

- Under this option, R2 customers will not pay more than $64.64, after accounting for the original $60.50 RRRP subsidy. Customers with costs below this threshold experience no change.



2a(i). High Distribution Cost LDCs – Accelerating Fixed Rate Benefit/Normalizing Fixed Rates

- While Hydro One R1 and R2 customers pay the highest distribution rates, the graph below highlights other relatively high-distribution cost LDCs (see slide in appendix for the full graph). These LDCs include Northern Ontario Wires, Parry Sound, Chapleau, Sioux Lookout, InnPower, Atitikion and Algoma.
- Estimates of what the fixed monthly rate would be in each of these LDCs if fixed rates were fully implemented in 2017 range from $38/month for Northern Ontario Wires to $65/month for a Hydro One R2 customer.
- Options for expanding a cost-mitigation program to these LDCs include:
  - Accelerating fixed rate benefits in each of these LDC as outlined for Hydro One R1 and R2 consumers in option 2a; or
  - Bringing distribution costs across all of these LDCs down to the lowest estimated monthly fixed distribution cost of $38.



2a(i). High Distribution Cost LDCs – Accelerating Fixed Rate Benefit Impacts/Normalizing Fixed Rates

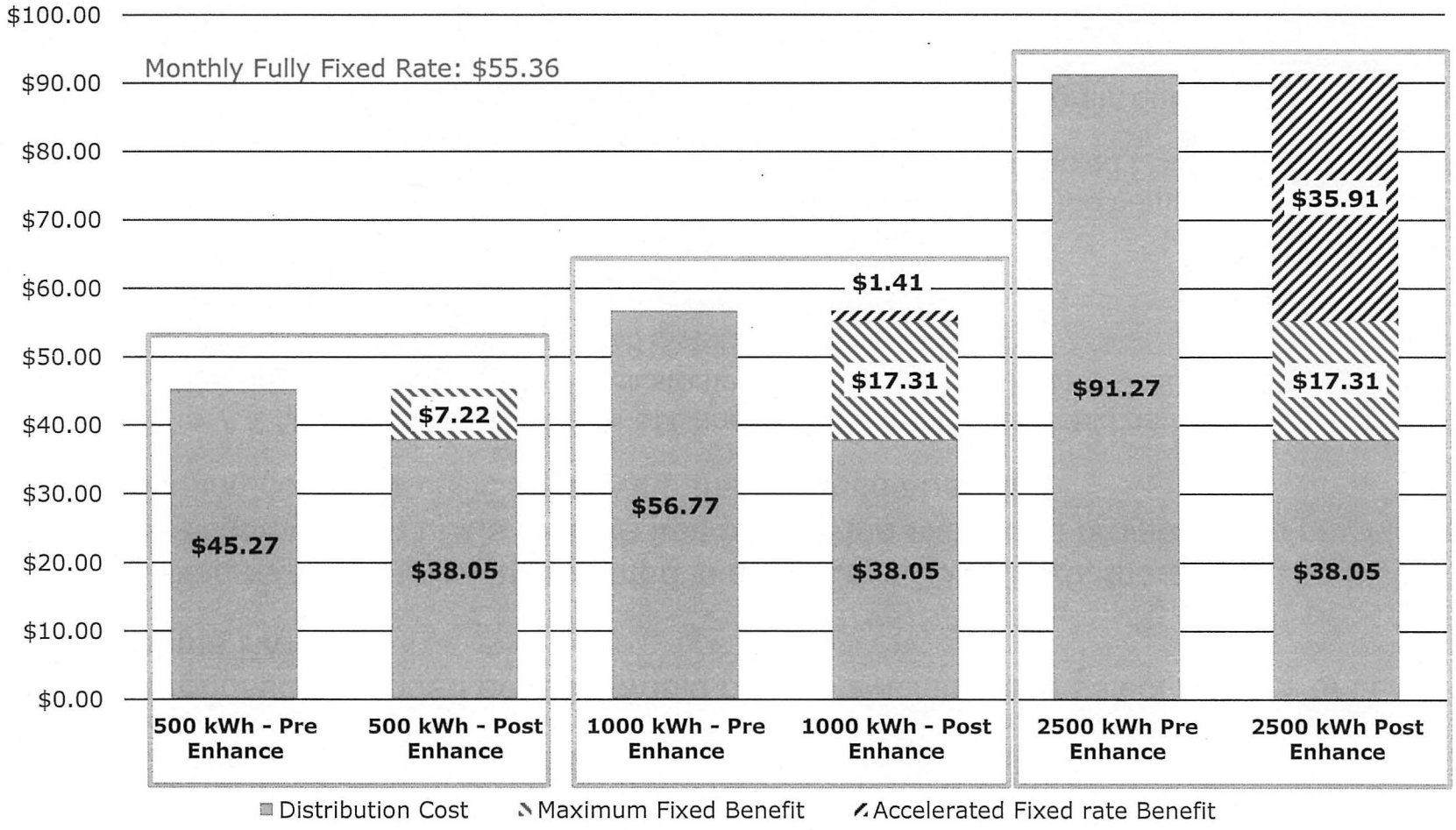
- These expanded cost-mitigation options are all incremental to 2a which expanded the RRRP program for Hydro One R1 and R2 consumers.
- Accelerating the fixed rate benefit for these additional LDCs would:
  - Provide between 1/3 to 1/2 of the 48,000 customers in the additional 7 LDCs with benefits.
  - Not provide any additional benefits to Hydro One R1 and R2 customers beyond option 2a.
- Bringing all these LDCs down to the $38/month distribution cost threshold would:
  - Provide almost all of the ~48,000 customers in the additional LDCs with benefits.
  - Provide additional benefits to Hydro One R1 and R2 customers beyond option 2a.
- The following slides provide examples of benefits to Hydro One R1 and R2, and InnPower customers (see appendix examples for the remaining LDCs).

Accelerated Fixed Rate Benefit Fiscal Impact (additive to Option 2a)						
	2018	**2019**	**2020**	**2021**	**2022**	**2023**
Total RRRP Enhancement (Option 2a)	$306-$332M	$300-$320M	$293-$309M	$287-$297M	$281M-$286M	$275M
Accelerating Fixed Rate Benefits for additional seven LDCs	~$10M					
Threshold of $38 Monthly Fixed Rate (includes H1)	~$140M					

2a(i). High Distribution Cost LDCs – Accelerating Fixed Rate Benefit Impacts/Normalizing Fixed Rates (Considerations)

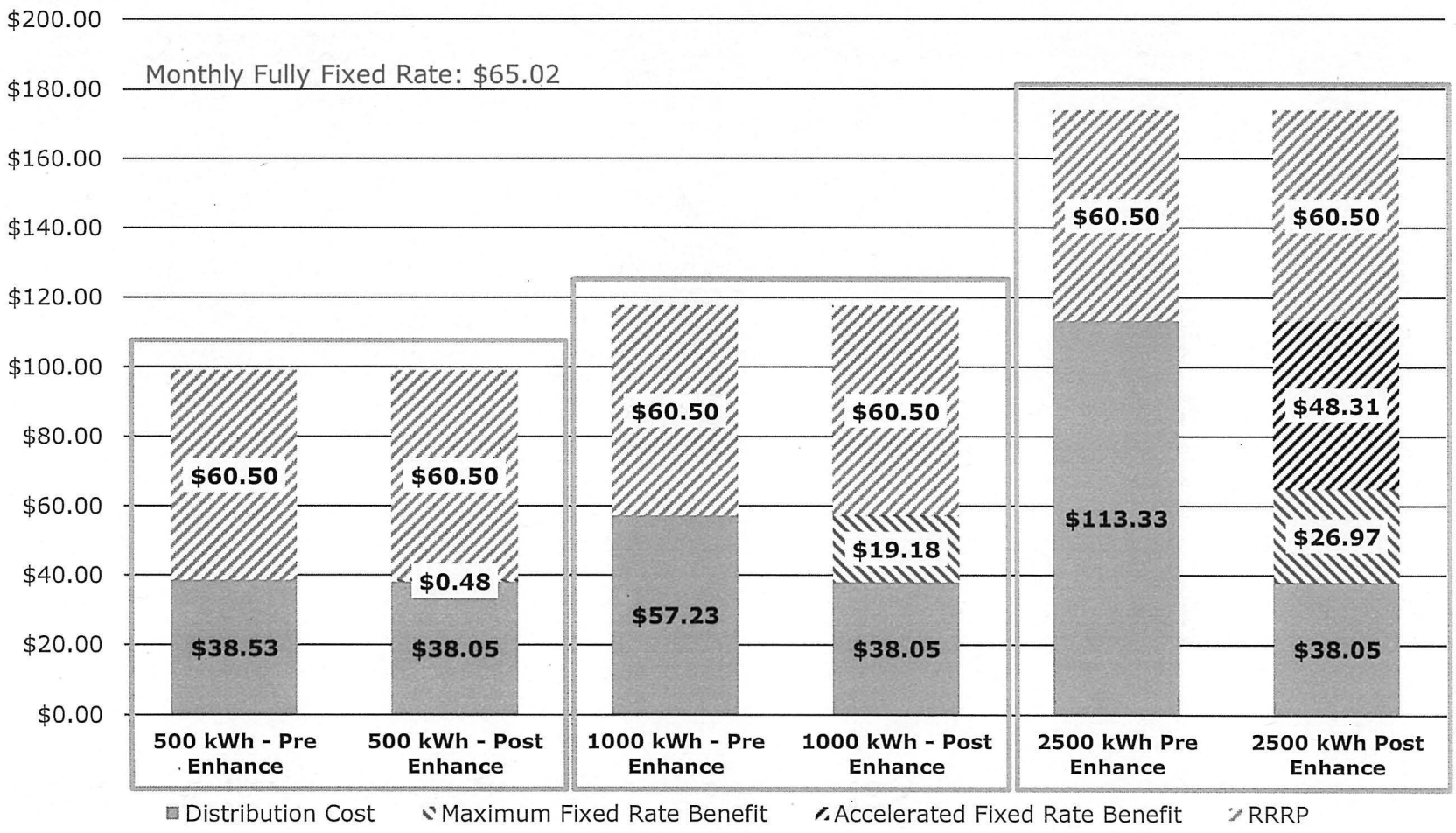
- The proposed expanded benefits would only be available to a select number of LDCs within the Province.
- Until fixed rates are fully implemented in all LDCs in 2019/2020, there could be high-volume customers in LDCs that are just outside the expanded program who pay higher distribution costs than LDCs receiving the expanded benefit
  - E.g. A 2,500kWh/month customer of Canadian Niagara Power would pay $57.45 in 2017 distribution costs, while a similar customer of InnPower would pay $47.50 with fixed benefit acceleration or $38 under the fixed distribution threshold.
- Implementation considerations include:
  - Carving out LDCs in regulation/legislative, either through writing the names of the LDCs within the regulation or another mechanism to ensure that only the selected LDCs receive the benefit.
  - Ensuring the distribution threshold is appropriately set at the program outset and can adjust to distribution rate changes year over year.
  - Current estimates are 2017 rates and the number of LDCs above $38/month will change year over year.

2a(i). High Distribution Cost LDCs – Accelerating Fixed Rate Benefit/Normalizing Fixed Rates (Hydro One R1)



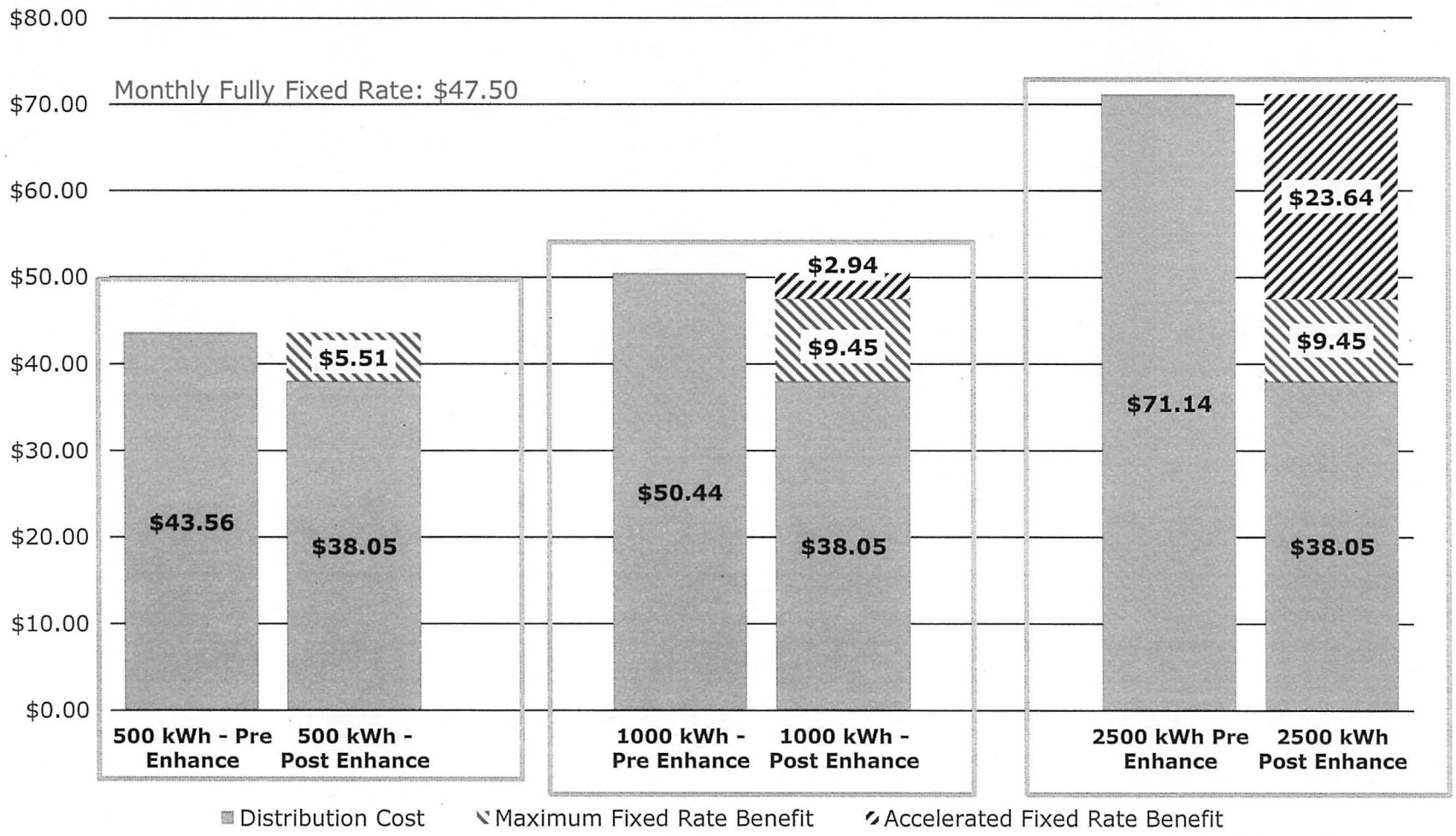
Note: *Rates are for 2017 (either approved or proposed)*

2a(i). High Distribution Cost LDCs – Accelerating Fixed Rate Benefit/Normalizing Fixed Rates (Hydro One R2)



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

2a(i). High Distribution Cost LDCs – Accelerating Fixed Rate Benefit/Normalizing Fixed Rates (Innpower)



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

2b. Ontario Electricity Support Program (OESP) Expansion

- The OESP is an income-tested, application based program that lowers the electricity costs of the most vulnerable consumers by providing a rebate directly on their electricity bills.
- The OESP provides basic benefits to most eligible consumers and enhanced benefits to Indigenous customers and customers with electric heat and certain medical devices.
- OESP funding is collected from a charge levied on all electricity ratepayers. Based on current level of program up-take and funding collection, OESP program benefits could be increased across the board by 50%. This would mean:
  - Single low income consumers would see an increase from $30 to $45/ month ($540/year);
  - Families of four with electric heat could see an increase from $55 to $82.50/month ($990/year); and
  - Indigenous, Métis, and Inuit consumers would also see benefit increases at the same level as those with electric heat and medical devices. These benefits could range from $67 to $113/month.
    - The Ministry is also considering options to support a "Delivery" line credit for Indigenous consumers. This would cost ~$18 million/year and would save Indigenous consumers between $75 and $100/month.
- Greater focus and support can be placed on lower income Ontarians by funding OESP through the tax base. This would also reduce costs for all consumers as a result of eliminating the OESP charge.
  - Average residential customer savings: $0.83/month; and
  - Average industrial customer savings: $1.10/MWh.

2b. OESP Expansion (cont'd)

- Potential changes to the OESP income thresholds was also considered, however, changes to the income thresholds at this point could potentially bring the OESP out of alignment with other existing social programs.
  - An OESP income threshold change could result in individuals and households that receive OESP, which is targeted to low-income individuals, not being eligible for other social assistance programs offered by the Province targeted to low income individuals/households.

- The credit and income threshold amounts for the OESP program were guided by other social assistance programs that are delivered within the Province, and the Province's Poverty Reduction Strategy, which has an underlying principle to measures poverty consistently in programs across government. One of the key measurement tools this Strategy uses is the Low Income Measure (LIM).
  - Feedback OEB received was that LIM is the method preferred by the Ministry of Finance and the preferred tool of low-income advocates.
  - OESP consequently adopted LIM as the income threshold to determine eligibility for OESP, and recommended its use for all energy assistance programs. It is also used for the OEB's Low Income Energy Assistance Program (LEAP).

- Rather than changing the OESP income thresholds at this point, several measures could be taken that include:
  - The "LDC Affordability Fund" may help a segment of the population that do not qualify directly as low income but are struggling to pay their utility bills.
  - The OEB could be asked to explore whether the OESP income thresholds need to be updated as part of a regular program review.

2b. OESP Expansion – Fiscal Impacts

- 2017 program costs assume the current program sign-up rate of 30% of eligible consumers increases to 45%. Cost projections assume the program grows to 100% of eligible consumers by 2022 and remains at that level.
- At the time of program design, it was estimated that 40-50% participation would be high for an application-based program delivered through electricity bills. However OESP can be enhanced by working to ensure the program uptake is as close as possible to 100%:
  - Streamlining the application process to make it easier and quicker to get through;
  - Putting in place a more aggressive communications strategy to make sure people are aware of the program;
  - Increasing funding for key partner agencies to work directly with individuals who are applying; and
  - Exploring automatic OESP qualification for those who receive provincial programs (e.g., ODSP).
- OEB is currently exploring options for simplifying the OESP process, including exploring options with MCSS on auto-enrollment options, discussing options to provide online alternative options to the wet signature consent forms with the federal government, and working with partners to do open houses to better reach vulnerable consumers.
- Table below shows estimate of program costs up to 2022:

Year	OESP Status Quo ($M)	+50% ($M)	TOTAL ($M)
2017	$108	$54	$162
2018	$150	$75	$225
2019	$186	$93	$279
2020	$215	$108	$323
2021	$243	$122	$365
2022	$272	$136	$408

2b. OESP Expansion – Considerations

Considerations

- **Framework:** Changes to legislation / regulation may be required to establish and define the ability to use tax funding for the OESP. The scope of changes would depend on the implementation / delivery mechanisms.
- **Implementation:** If the OEB continues to deliver program, 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).
- **Additional Enhancements:** The enhanced credit could be expanded to include additional eligibility categories of customers. For example, a new "Low Density Consumer" category could be introduced that provides Hydro One R2 and/or R1 customers (highest distribution rates) who are already OESP eligible with the enhanced credit.
- **Variance Account:** 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.
- **Treatment as Income:** 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.

2c. Establishing a New LDC Affordability Fund

- Electricity customers who meet the definition of low-income are eligible for energy efficiency incentives through the Home Assistance Program, delivered by LDCs under the Conservation First Framework.

- Some electricity customers who struggle to pay their utility bills do not meet the definition of a low-income household and therefore are not eligible for the Home Assistance Program.

- Establishing an "Affordability Fund" for LDCs could provide a means to help struggling customers who do not qualify for low income programs and cannot upgrade their homes without financial assistance.
  - Over time the Fund could help these customers get back on track with their bills and also save on disconnection costs.
  - The Fund would be targeted to customers on an as-needed basis (vs. marketed as an open-intake program).

- ENERGY is currently in discussions with the Electricity Distributors Association and several LDCs to determine the feasibility of establishing a Fund and to identify a willing funding partner(s).

- To allow for funds to flow in 2016/17, ENERGY would sign a Transfer Payment Agreement (TPA) with a qualified third party/ies to administer the Fund.
  - LDCs would apply for funding and redistribute support to those customers that meet the targeted eligibility criteria.

- Recipients could receive measures similar to those available in the Home Assistance Program (weatherization, energy efficient appliances and lighting controls).
  - 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.

2d. First Nations Rate – Context

- In June 2016, pursuant to s.35 of the OEB Act, the Minister 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.*"
  - In order to inform its report, the OEB engaged with First Nations, including remote communities, the distributors serving them, and consumer groups such as the Low Income Energy Network, in a series of meetings across the province. It also established an Advisory Committee with the Chiefs of Ontario's Grievance Committee.
  - 48 First Nations attended meetings held in the Fall of 2016 in London, Couchiching First Nation, Sudbury, Toronto and Thunder Bay. The OEB also held sessions with Local Distribution Companies (LDCs) and consumer groups.
- The OEB provided its report to the minister on December 29, 2016.
- The OEB report 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.
  - 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.

3. 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.

Opportunities

- ENERGY could help promote or accelerate these efforts by asking the OEB to look at opportunities to further drive LDC efficiencies and productivity.
- 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.

3. OEB – LDC Efficiencies and Rates (Performance Incentives) (cont'd)

Considerations

Sector:

- Exact bill reduction levels are unknown, but real OM&A and some capital cost avoidance can reasonably be expected.
- Could indirectly incent consolidation if LDCs feel they are unable to adequately manage their assets in light of tightening requirements.
- Any initiatives that have a direct impact on LDC profitability could affect the value of Hydro One.
- There is a tension between requiring productivity enhancements and creating firm performance standards. LDCs have to invest to maintain system levels, but also finding cost efficiencies, which is an incentive for innovation. The Ministry and the OEB may have to also explore reducing regulatory burden/barriers on LDCs so they have the tools available to satisfy new performance expectations.

Regulatory:

- The OEB is the electricity distribution sector's independent regulator and as such is responsible for establishing rate-setting mechanisms in line with its statutory objectives.
  - The Ministry would engage with OEB to align on approach, and provide only high-level direction so as to respect OEB's role in determining implementation specifics.
  - The OEB would likely need to conduct policy hearings and stakeholder consultations on these initiatives, though Ministry could request new rules be in place for next major LDC rate cycle.
- LDCs are resistant to peer comparison for a variety of historical and service territory issues. OEB econometric analysis has generally supported limiting peer comparisons. As comparisons would be an important component of benchmarking performance standards, the Ministry may experience sector pushback.
- Updating rate-setting mechanisms and regulatory processes could create regulatory uncertainty and limit LDC activity The OEB has revised its processes multiple times over the past 15 years.

4. OPG – Operational Efficiencies

- Provide expectation that OPG meet more aggressive cost targets, improving efficiency by ~$3/Megawatt hour (MWh).

Considerations

- OPG recently submitted its 2017-19 business plan to the Province for concurrence. That plan includes the following:
  - Enterprise total generating cost increasing from $48/MWh in 2016 to an average of $55/MWh over the plan period.
  - An average residential monthly bill increases of $1.05/month annually from 2017-2021.
- Much of this increase is due to the Darlington refurbishment project, which increases costs and reduces OPG's generation over the planning period.
- OPG has also shared its stretch targets for total cost of generation, which average $52/MWh over the 2017-19 plan, a ~$3/MWh reduction (5-6%) relative to its $55/MWh business plan targets.
- The Province could provide instructions to OPG to focus on its stretch target as part of the Minister's Concurrence letter. This is a public document that OEB would likely review and incorporate as part of OPG's current rate application.
- Consistent with regulations under the *Ontario Energy Board Act*, OPG is seeking smoothed rates for nuclear as part of its 2017-2021 rate application.
  - As a result, the benefit to ratepayers of reducing generation costs is uncertain.
  - Given that the application extends beyond the business plan period, and to ensure OPG does not delay costs beyond the planning horizon, the Province may want to provide additional direction for out year expenditures.
- If OPG is unable to meet more aggressive cost targets, this could impact net income, and the Province's fiscal plan.
  - The total cost of $3/MWh based on OPG's forecast production of 74 TWh/yr is about $240 million per year.
- The Province could work with OPG to craft language in the concurrence letter in order to avoid setting unintended precedents for future rate application processes.

5. IESO – Market Renewal

- Continue to move forward with Independent Electricity System Operator's (IESO) Market Renewal initiatives:
  - 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.
  - Moving to "technology-agnostic" procurements will provide new opportunities for innovation and modernization and ensure ratepayers receive the best prices possible.

Considerations

- 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.
- The IESO's Market Renewal is a broad initiative that will impact all aspects of Ontario's electricity market. Ontario has had a uniform price since market opening.
- Adopting a technology-agnostic stance will lower the overall cost of providing electricity service by selecting the most cost-effective resources to fulfill various system needs.
- The IESO estimates that the total implementation cost – including a 15% contingency and net of avoided costs – will be $150 million. The bulk of the costs (capital) would only be recovered once the project has been implemented and as the benefits are being realized.

Creating New Legislative Authority

GA Smoothing (Option 1)

- **Amendments to Electricity Act, 1998 (EA) and *Ontario Energy Board Act, 1998* (OEBA)**
  - The mandate and governance of the borrowing entity, whether OPG, IESO or a new entity, will be addressed through amendments to the EA. Governance provisions will be designed to address the accounting control indicators.
  - The borrowing entity 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 entity and settle accounts with the new entity as a service provider.
  - Regulatory amendments to GA Regulations would require IESO to:
    - Separately settle and track amounts received from the borrowing entity to lower GA (including maintaining variance accounts).
    - Separately settle and track amounts paid back to the entity (including maintaining variance accounts).
    - Distributors collect from consumers and settle with IESO. Generators could receive amounts from 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.

Electricity Support Programs (Option 2)

- **RRRP, OESP and First Nations Rate (2 a, b and d):** 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.

Ontario Energy Board (Option 3), OPG Efficiencies (Option 4) and IESO market modernization (Option 5)

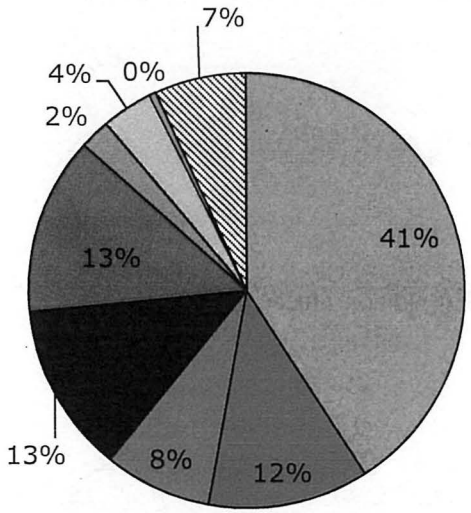
- No specific legislative or regulatory amendments identified. IESO may need to amend market rules. Agency MOUs/MOAs may require amendment.

Appendix

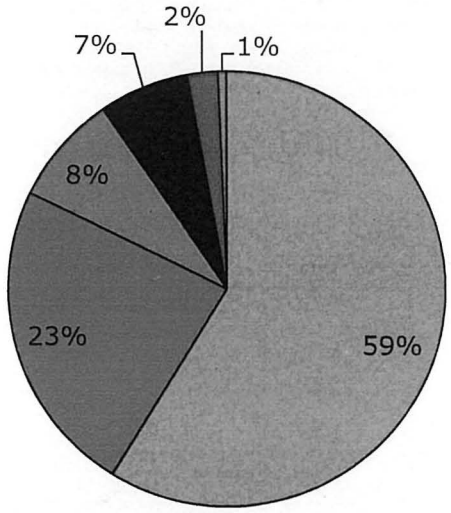
GA Smoothing – Cost Breakout

- The allocation of GA costs in 2016 is compared to the proportion of generation in the graph below.
- This cost breakdown will evolve over time as 2,181 MW of contracted generation comes online in the coming years.

2016 GA Cost: $12.3 billion



2016 Generation: 155 TWh



	GA ($M)	Gen. (TWh)
Nuclear	5,053	91
Hydro	1,473	36
Natural Gas	985	13
Wind	1,552	10
Solar	1,630	3
Biomass, Landfill and Byproduct	278	1
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.

GA Smoothing for All – Residential Bills Lowered 20% (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.

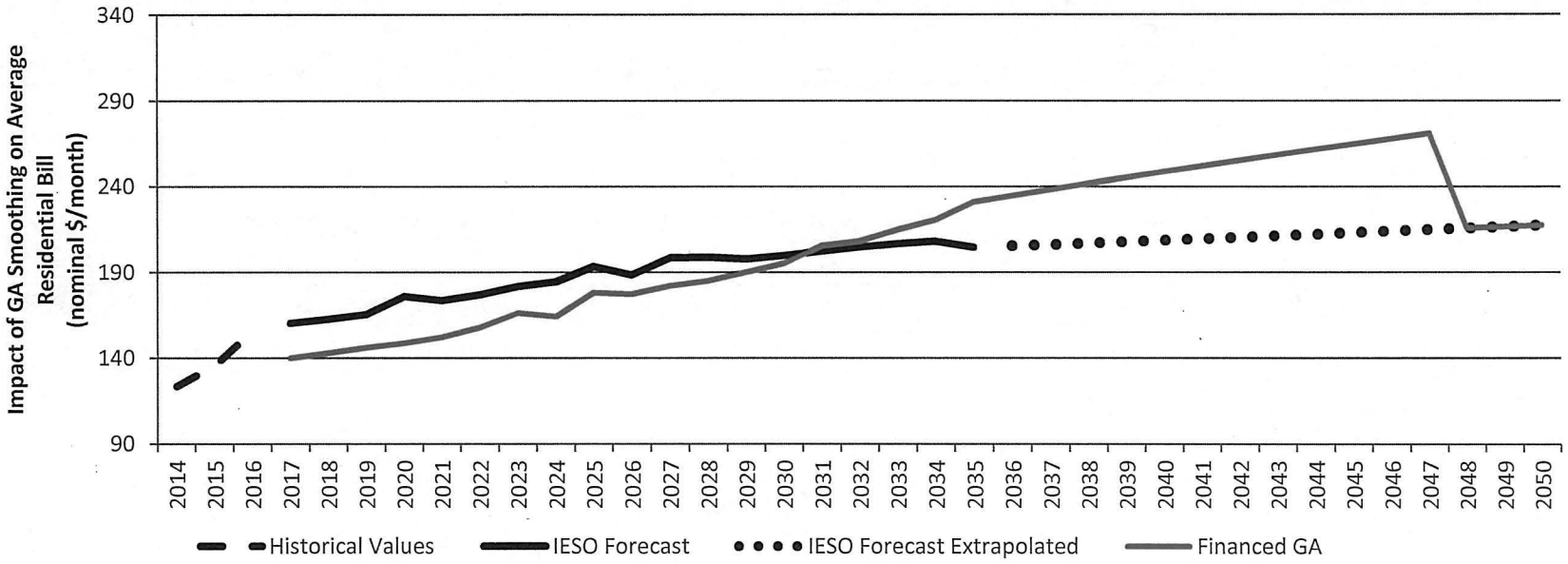
Residential (750 kWh/month)	Actual 2016	2017	2018	2019	2020	2021
Total Bill (includes HST)	**163**	**172**	**175**	**178**	**189**	**187**
Total Bill (excludes HST)	145	153	155	158	168	165
Impact of GA Financing		-18	-18	-17	-24	-19
Impact of OPG Efficiencies		-1	-1	-1	-1	-1
Impact of Tax-Basing Social 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**	**137**	**132**	**134**	**135**	**138**
Year-over-Year Change		-14%	-4%	2%	1%	2%
Change from Forecast		-17%	-18%	-17%	-22%	-18%

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**	**72**	**74**	**69**	**70**	**76**
Year-over-Year Change		-20%	3%	-7%	2%	7%
Change from Forecast		-21%	-20%	-21%	-26%	-21%

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.

GA Smoothing for All (Borrow $3.2 billion in 2017)



	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 *($/month)*	-18.1	-17.7	-17.3	-24.4	-19.2	-17.1	-14.0	-18.1	-13.8	-10.1	-14.8	-12.5	-6.9	-4.3	2.8	2.9	7.2	10.9	23.2	25.7	28.1	30.5	32.8	35.1	37.3	39.4	41.5	43.6	45.6	47.6	49.5	0.0
Total Accumulated Debt *($ billion)*	3.2	6.5	9.9	14.7	18.9	22.8	26.5	31.0	35.1	38.6	43.2	47.6	51.3	54.7	57.0	59.4	61.1	62.3	61.2	59.6	57.4	54.7	51.3	47.4	42.8	37.5	31.5	24.8	17.4	9.1	0.0	0.0
Total Change in Accumulated Debt *($ billion)*	3.2	3.3	3.4	4.8	4.1	4.0	3.6	4.6	4.0	3.6	4.6	4.4	3.7	3.4	2.3	2.4	1.7	1.2	-1.1	-1.6	-2.2	-2.7	-3.3	-4.0	-4.6	-5.3	-6.0	-6.7	-7.5	-8.3	-9.1	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 plus 0.1 percentage point with no limit 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.

GA Smoothing for RPP / Class B Only – Residential Bills Lowered 20% (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.

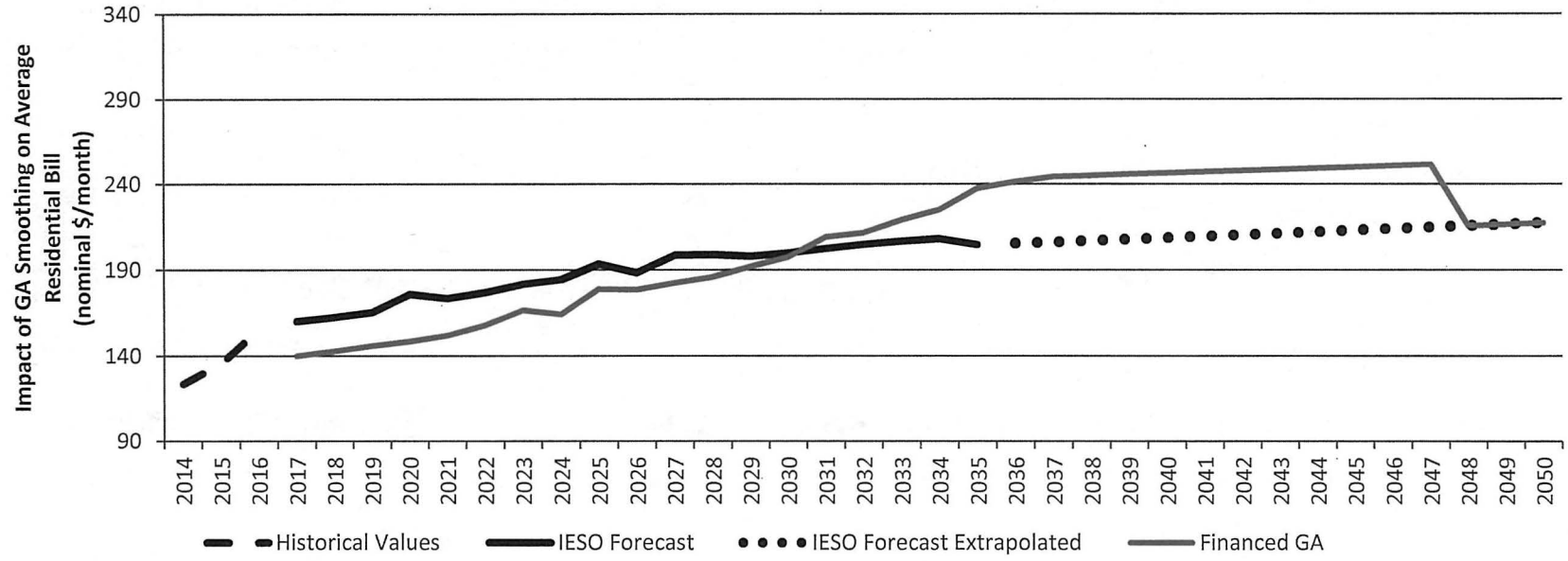
Residential (750 kWh/month)	Actual 2016	2017	2018	2019	2020	2021
Total Bill (includes HST)	**163**	**172**	**175**	**178**	**189**	**187**
Total Bill (excludes HST)	145	153	155	158	168	165
Impact of GA Financing		-18	-18	-17	-24	-19
Impact of OPG Efficiencies		-1	-1	-1	-1	-1
Impact of Tax-Basing Social 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**	**137**	**132**	**134**	**135**	**138**
Year-over-Year Change		-14%	-4%	2%	1%	2%
Change from Forecast		-17%	-18%	-17%	-22%	-18%

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**	**87**	**89**	**84**	**91**	**91**
Year-over-Year Change		-3%	2%	-6%	9%	1%
Change from Forecast		-4%	-4%	-5%	-5%	-5%

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.

GA Smoothing for RPP / Class B Only (Borrow $2.8 billion in 2017)



	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 *($/month)*	-18.1	-17.7	-17.3	-24.4	-19.2	-16.8	-13.3	-17.9	-13.0	-8.8	-14.1	-11.5	-5.1	-2.1	5.9	6.1	10.9	15.1	29.1	32.0	33.8	33.7	33.5	33.4	33.2	33.1	33.0	32.8	32.7	32.6	32.4	0.0
Total Accumulated Debt *($ billion)*	2.8	5.7	8.7	12.9	16.6	20.1	23.1	27.1	30.5	33.4	37.3	41.0	43.9	46.5	47.9	49.4	50.2	50.4	48.3	45.5	42.3	39.0	35.5	31.8	27.9	23.8	19.5	15.0	10.2	5.2	0.0	0.0
Total Change in Accumulated Debt *($ billion)*	2.8	2.9	3.0	4.2	3.6	3.5	3.1	4.0	3.4	2.9	3.9	3.7	2.9	2.6	1.4	1.5	0.8	0.2	-2.1	-2.7	-3.2	-3.3	-3.5	-3.7	-3.9	-4.1	-4.3	-4.5	-4.7	-5.0	-5.2	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 $5.5 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.

GA Smoothing for RPP / Class B 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.

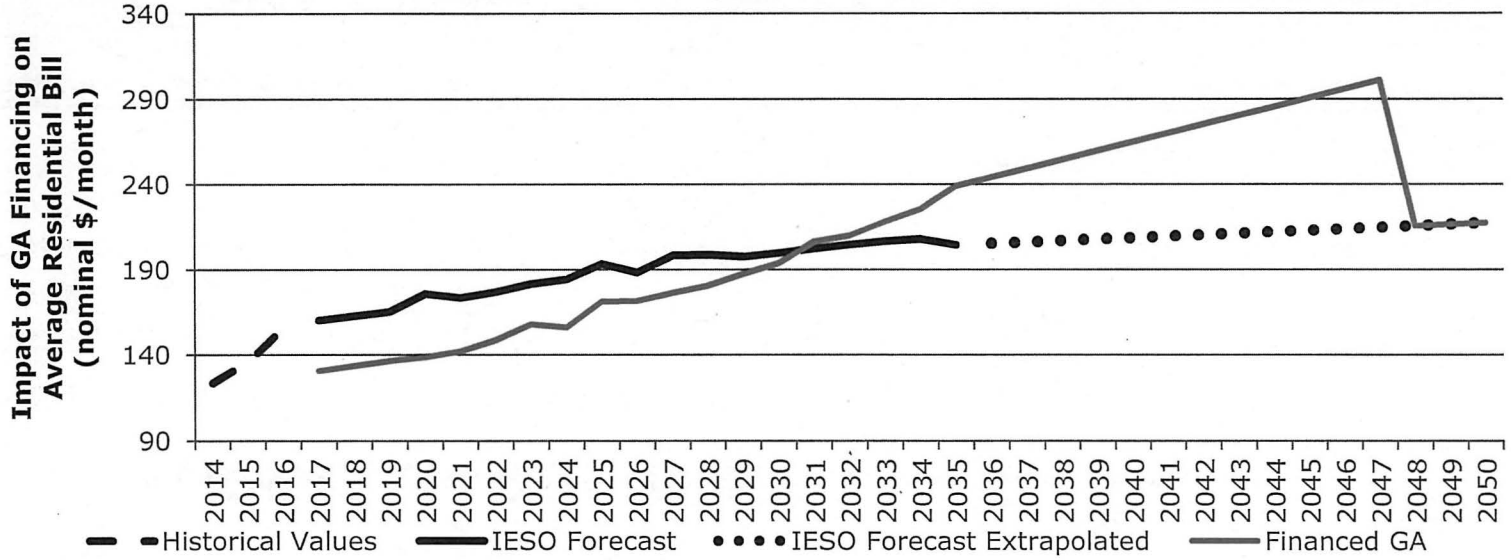
Residential (750 kWh/month)	Actual 2016	2017	2018	2019	2020	2021
Total Bill (includes HST)	**163**	**172**	**175**	**178**	**189**	**187**
Total Bill (excludes HST)	145	153	155	158	168	165
Impact of GA Financing		-26	-26	-26	-33	-28
Impact of OPG Efficiencies		-1	-1	-1	-1	-1
Impact of Tax-Basing Social 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**	**126**	**121**	**123**	**124**	**127**
Year-over-Year Change		-21%	-4%	2%	1%	2%
Change from Forecast		-24%	-24%	-24%	-28%	-25%

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**	**87**	**89**	**84**	**91**	**91**
Year-over-Year Change		-3%	2%	-6%	9%	1%
Change from Forecast		-4%	-4%	-5%	-5%	-5%

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.

GA Smoothing for RPP / Class B Only (Borrow $4.1 billion in 2017)



	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 *($/month)*	-26.3	-26.1	-25.8	-33.1	-28.1	-25.3	-21.2	-25.3	-19.8	-15.0	-19.6	-16.4	-9.2	-5.4	3.5	4.5	10.2	15.4	30.3	34.2	38.1	41.9	45.7	49.5	53.2	57.0	60.8	64.6	68.4	72.3	76.2	0.0
Total Accumulated Debt *($ billion)*	4.1	8.4	12.8	18.6	23.9	29.1	33.9	39.5	44.6	49.2	54.8	60.1	64.6	68.8	71.8	74.7	77.0	78.4	77.5	75.9	73.6	70.5	66.6	61.9	56.2	49.6	41.9	33.2	23.4	12.3	0.0	0.0
Total Change in Accumulated Debt *($ billion)*	4.1	4.3	4.4	5.8	5.3	5.1	4.8	5.7	5.1	4.6	5.6	5.3	4.5	4.2	3.0	3.0	2.2	1.5	-0.9	-1.6	-2.3	-3.1	-3.9	-4.8	-5.7	-6.6	-7.6	-8.7	-9.8	-11.0	-12.3	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 plus 1.5 percentage points with no limit 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.

GA Smoothing for All – Residential Bills Lowered 28% (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.

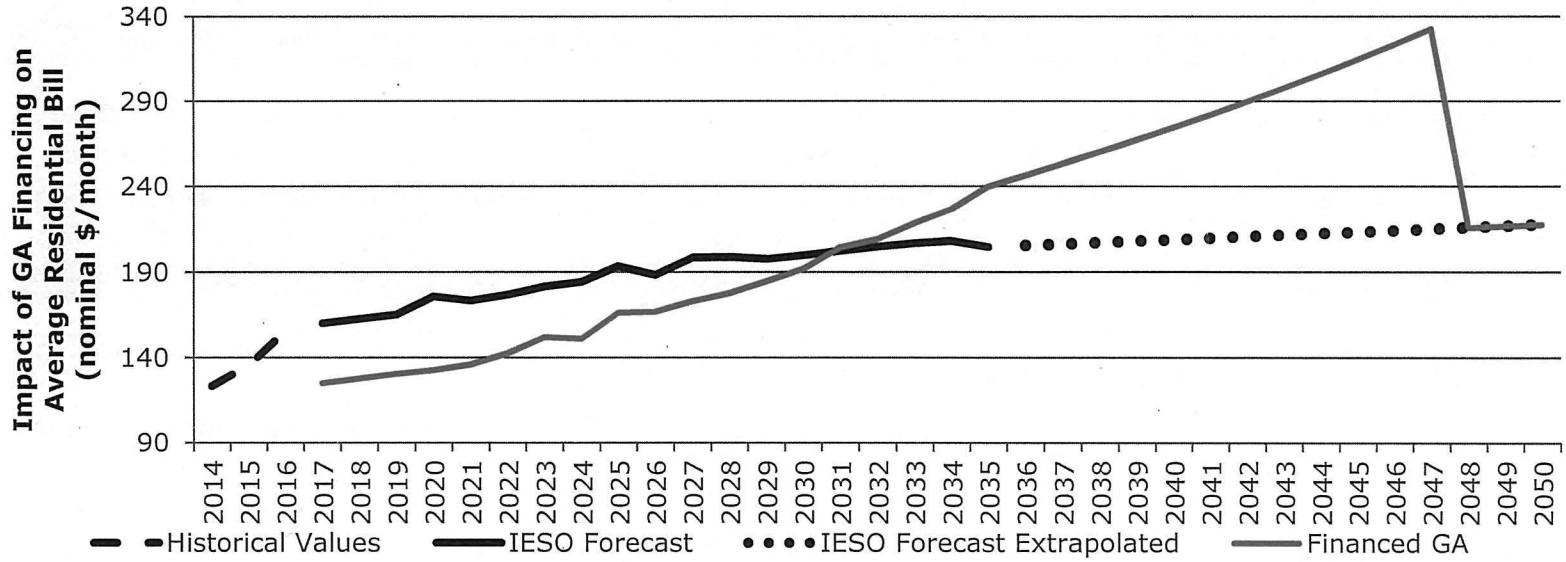
Residential (750 kWh/month)	Actual 2016	2017	2018	2019	2020	2021
Total Bill (includes HST)	**163**	**172**	**175**	**178**	**189**	**187**
Total Bill (excludes HST)	160	153	155	158	168	165
Impact of GA Financing		-31	-31	-31	-38	-33
Impact of OPG Efficiencies		-1	-1	-1	-1	-1
Impact of Tax-Basing Social Programs		-2	-2	-2	-3	-3
Subtotal		118	121	123	125	128
8% rebate		-9	-10	-10	-10	-10
HST		15	16	16	16	17
Revised Bill (includes HST)	**163**	**124**	**127**	**129**	**132**	**134**
Year-over-Year Change		-24%	2%	2%	2%	2%
Change from Forecast		**-28%**	**-28%**	**-27%**	**-30%**	**-28%**

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**	**119**	**114**	**116**	**117**	**119**
Year-over-Year Change		-25%	-4%	2%	1%	2%
Change from Forecast		-28%	-29%	-28%	-32%	-29%

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**	**61**	**63**	**58**	**59**	**64**
Year-over-Year Change		-32%	3%	-8%	2%	8%
Change from Forecast		-33%	-32%	-34%	-38%	-34%

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.

GA Smoothing for All (Borrow $5.5 billion in 2017)



	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 *($/month)*	-31.2	-31.1	-31.0	-38.3	-33.4	-30.5	-26.5	-29.5	-24.1	-19.2	-22.5	-18.8	-11.6	-7.1	1.8	3.9	10.4	16.4	31.1	36.3	41.5	46.9	52.4	58.1	64.0	70.1	76.4	82.9	89.7	96.8	104.2	0.0
Total Accumulated Debt *($ billion)*	5.5	11.4	17.4	25.0	32.2	39.3	45.9	53.5	60.5	67.0	74.3	81.5	87.7	93.4	97.9	102.2	105.6	108.0	107.8	106.6	104.4	101.0	96.3	90.4	82.9	73.9	63.2	50.6	35.9	19.2	0.0	0.0
Total Change in Accumulated Debt *($ billion)*	5.5	5.8	6.0	7.7	7.2	7.0	6.7	7.6	7.0	6.5	7.4	7.1	6.2	5.8	4.5	4.3	3.4	2.4	-0.2	-1.2	-2.2	-3.4	-4.6	-6.0	-7.4	-9.0	-10.7	-12.6	-14.6	-16.8	-19.2	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 plus 4.1 percentage points with no limit 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.

GA Smoothing for RPP Only – Residential Bills Lowered 28% (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.

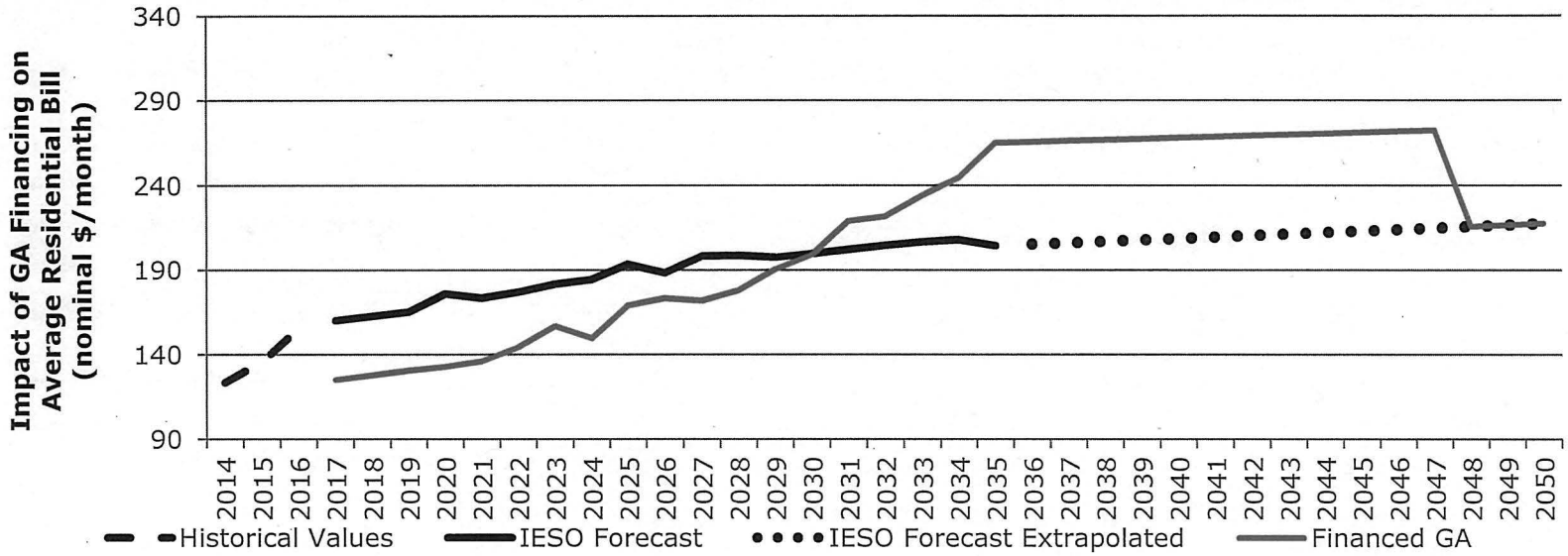
Residential (750 kWh/month)	Actual 2016	2017	2018	2019	2020	2021
Total Bill (includes HST)	**163**	**172**	**175**	**178**	**189**	**187**
Total Bill (excludes HST)	160	153	155	158	168	165
Impact of GA Financing		-31	-31	-31	-38	-33
Impact of OPG Efficiencies		-1	-1	-1	-1	-1
Impact of Tax-Basing Social Programs		-2	-2	-2	-3	-3
Subtotal		118	121	123	125	128
8% rebate		-9	-10	-10	-10	-10
HST		15	16	16	16	17
Revised Bill (includes HST)	**163**	**124**	**127**	**129**	**132**	**134**
Year-over-Year Change		-24%	2%	2%	2%	2%
Change from Forecast		**-28%**	**-28%**	**-27%**	**-30%**	**-28%**

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**	**161**	**156**	**157**	**168**	**164**
Year-over-Year Change		1%	-3%	1%	7%	-2%
Change from Forecast		-3%	-3%	-3%	-3%	-3%

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**	**87**	**89**	**84**	**91**	**91**
Year-over-Year Change		-3%	2%	-6%	9%	1%
Change from Forecast		-4%	-4%	-5%	-5%	-5%

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.

GA Smoothing for RPP Only (Borrow $2.6 billion in 2017)



	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 *($/month)*	-31.2	-31.1	-31.0	-38.3	-33.4	-28.9	-22.2	-30.9	-21.5	-13.4	-23.4	-18.5	-6.4	-0.6	14.6	14.9	24.1	32.1	53.4	53.2	53.0	52.7	52.5	52.3	52.1	51.9	51.7	51.4	51.2	51.0	50.8	0.0
Total Accumulated Debt *($ billion)*	2.6	5.3	8.1	11.7	15.0	18.2	20.9	24.5	27.6	30.1	33.5	36.8	39.2	41.2	42.1	43.0	43.2	42.7	40.3	37.8	35.2	32.4	29.5	26.4	23.2	19.8	16.2	12.4	8.5	4.4	0.0	0.0
Total Change in Accumulated Debt *($ billion)*	2.6	2.7	2.8	3.6	3.3	3.1	2.8	3.6	3.0	2.5	3.5	3.2	2.4	2.1	0.9	0.9	0.2	-0.5	-2.4	-2.5	-2.6	-2.8	-2.9	-3.1	-3.2	-3.4	-3.6	-3.8	-3.9	-4.1	-4.4	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 $4.6 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.

GA Smoothing for RPP/Class B Only – Residential Bills Lowered 28% (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.

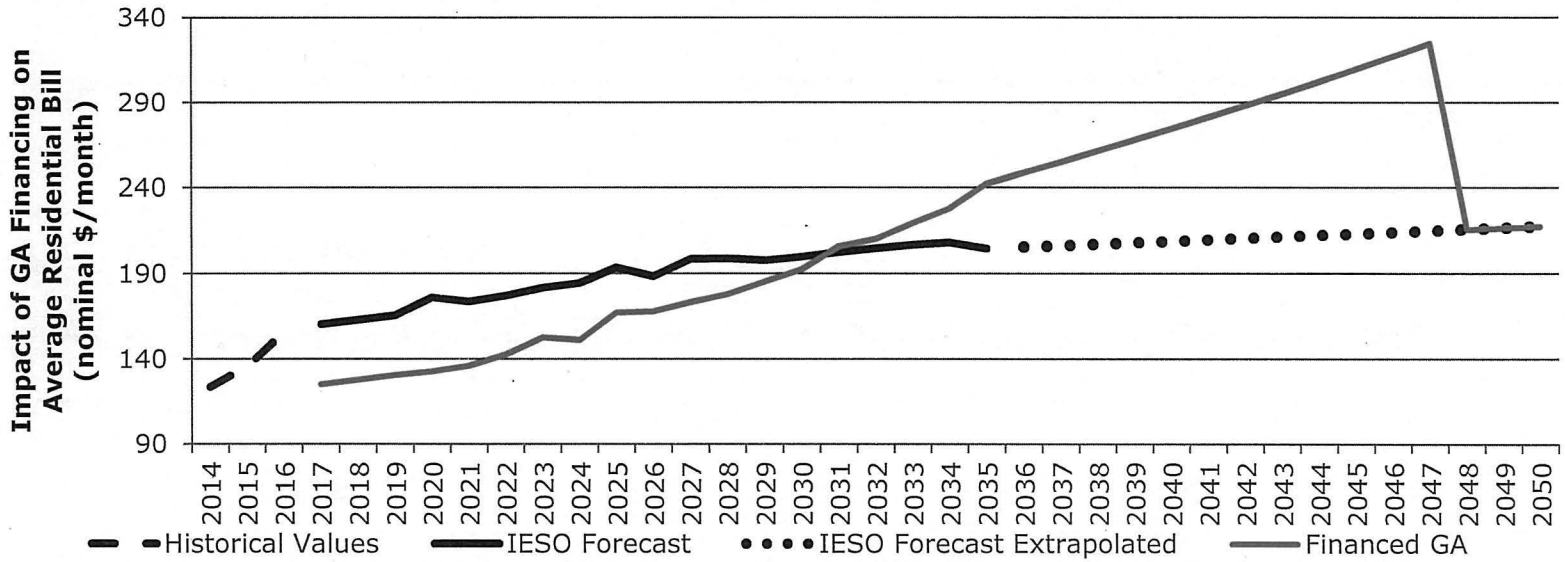
Residential (750 kWh/month)	Actual 2016	2017	2018	2019	2020	2021
Total Bill (includes HST)	**163**	**172**	**175**	**178**	**189**	**187**
Total Bill (excludes HST)	160	153	155	158	168	165
Impact of GA Financing		-31	-31	-31	-38	-33
Impact of OPG Efficiencies		-1	-1	-1	-1	-1
Impact of Tax-Basing Social Programs		-2	-2	-2	-3	-3
Subtotal		118	121	123	125	128
8% rebate		-9	-10	-10	-10	-10
HST		15	16	16	16	17
Revised Bill (includes HST)	**163**	**124**	**127**	**129**	**132**	**134**
Year-over-Year Change		-24%	2%	2%	2%	2%
Change from Forecast		**-28%**	**-28%**	**-27%**	**-30%**	**-28%**

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**	**119**	**114**	**116**	**117**	**119**
Year-over-Year Change		-25%	-4%	2%	1%	2%
Change from Forecast		-28%	-29%	-28%	-32%	-29%

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**	**87**	**89**	**84**	**91**	**91**
Year-over-Year Change		-3%	2%	-6%	9%	1%
Change from Forecast		-4%	-4%	-5%	-5%	-5%

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.

GA Smoothing for RPP/Class B Only (Borrow $4.9 billion in 2017)



	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 *($/month)*	-31.2	-31.1	-31.0	-38.3	-33.4	-30.3	-25.9	-29.6	-23.7	-18.5	-22.6	-18.8	-11.1	-6.5	3.0	4.8	11.4	17.4	33.3	38.2	43.1	48.0	53.1	58.2	63.4	68.7	74.1	79.6	85.2	91.0	96.9	0.0
Total Accumulated Debt *($ billion)*	4.9	10.0	15.3	22.0	28.4	34.5	40.3	47.0	53.0	58.6	65.1	71.4	76.7	81.7	85.4	89.0	91.8	93.7	93.1	91.6	89.3	86.0	81.7	76.2	69.6	61.7	52.5	41.8	29.6	15.7	0.0	0.0
Total Change in Accumulated Debt *($ billion)*	4.9	5.1	5.3	6.7	6.3	6.2	5.8	6.7	6.1	5.6	6.5	6.2	5.4	4.9	3.7	3.6	2.8	1.9	-0.6	-1.4	-2.3	-3.3	-4.3	-5.4	-6.6	-7.9	-9.2	-10.7	-12.2	-13.9	-15.7	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 plus 2.8 percentage points with no limit 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.

GA Smoothing for All – Residential Bills Lowered 25% (with Tax-Base Funded 15% Rebate, 2% increase)

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

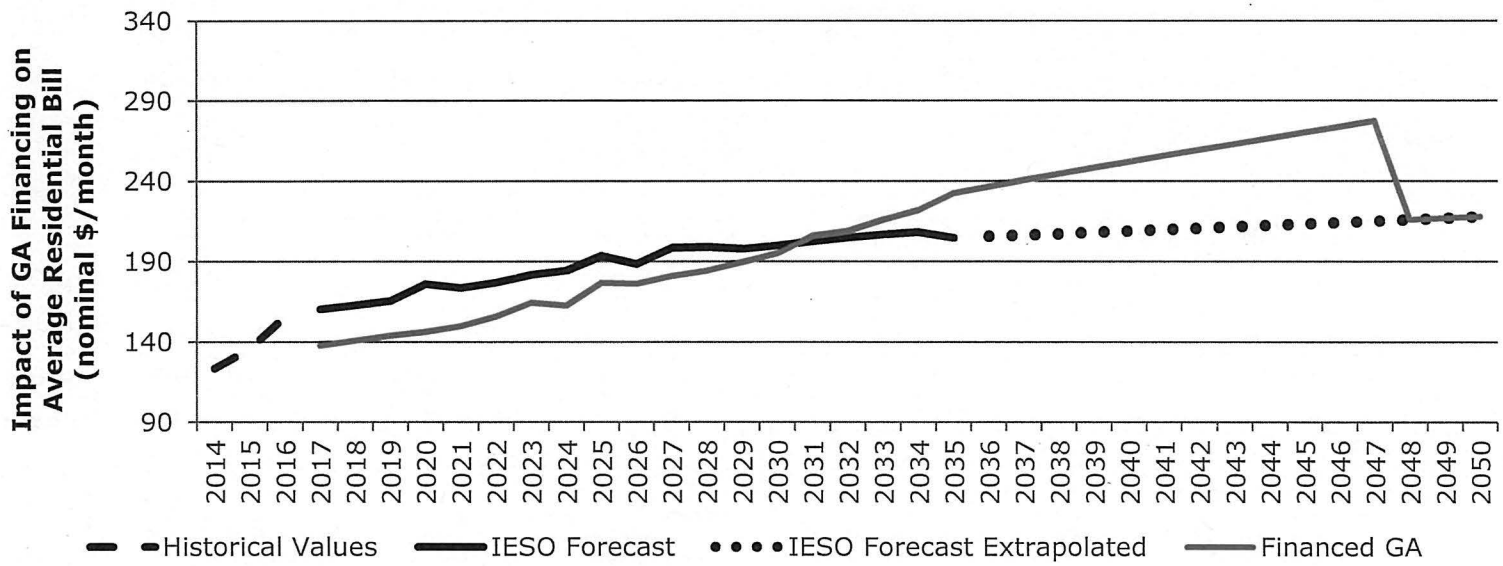
Residential (750 kWh/month)	Actual 2016	2017	2018	2019	2020	2021
Total Bill (includes HST)	**163**	**172**	**175**	**178**	**189**	**187**
Total Bill (excludes HST)	145	153	155	158	168	165
Impact of GA Financing		-20	-20	-19	-26	-21
Impact of OPG Efficiencies		-1	-1	-1	-1	-1
Subtotal		132	135	137	140	143
15% rebate		-20	-20	-21	-21	-21
HST		17	17	18	18	19
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**	**138**	**133**	**135**	**136**	**139**
Year-over-Year Change		-14%	-4%	2%	1%	2%
Change from Forecast		-17%	-17%	-17%	-21%	-18%

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**	**74**	**76**	**71**	**72**	**77**
Year-over-Year Change		-18%	3%	-7%	2%	7%
Change from Forecast		-19%	-18%	-19%	-24%	-19%

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. The 15% rebate above represents incremental funding requirements compared to status quo.

GA Smoothing for All (Borrow $3.5 billion in 2017)



	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 *($/month)*	-19.9	-19.5	-19.2	-26.3	-21.1	-18.9	-15.6	-19.5	-15.0	-11.1	-15.6	-13.1	-7.3	-4.3	3.0	3.4	7.9	11.9	24.5	27.3	30.1	32.8	35.4	38.0	40.6	43.1	45.6	48.1	50.5	52.9	55.3	0.0
Total Accumulated Debt *($ billion)*	3.5	7.2	10.9	16.1	20.7	25.1	29.1	34.1	38.5	42.4	47.3	52.0	56.0	59.6	62.1	64.7	66.6	67.8	66.8	65.2	62.9	60.1	56.5	52.3	47.3	41.5	35.0	27.6	19.4	10.2	0.0	0.0
Total Change in Accumulated Debt *($ billion)*	3.5	3.7	3.7	5.2	4.6	4.4	4.0	4.9	4.4	3.9	4.9	4.7	3.9	3.6	2.5	2.6	1.9	1.2	-1.0	-1.6	-2.2	-2.9	-3.5	-4.2	-5.0	-5.7	-6.5	-7.4	-8.3	-9.2	-10.2	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 plus 0.6 percentage points with no limit 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.

GA Smoothing – Considerations (*Accounting Treatment: Does Province Control Entity?)*

Defining the Government Reporting Entity

- The government reporting entity should comprise government components and those organizations that are controlled by the government.

Determining Whether Control Exists

- Control is the power to govern the financial and operating policies of another organization with expected benefits or the risk of loss to the government from the other organization's activities.
- Whether a government controls an organization is a question of fact that must be determined by reference to the definition of control described in the prior paragraph and the particular circumstances of each case.
- Requires the application of professional judgment based on the definition of control and the substance of the relationship.
- It is the preponderance of evidence that would be considered in assessing whether a government controls an organization.

GA Smoothing – Considerations (*Accounting Treatment: Does Province Control Entity?)* (cont'd)

Indicators of Control

- There are certain indicators that provide more persuasive evidence of control:
  - Government has the power to unilaterally appoint or remove a majority of the members of the governing body of the organization;
  - Government has ongoing access to the assets of the organization, has the ability to direct the ongoing use of those assets, or has ongoing responsibility for losses;
  - Government holds the majority of the voting shares or a "golden share" 1(1) that confers the power to govern the financial and operating policies of the organization; and
  - Government has the unilateral power to dissolve the organization and thereby access its assets and become responsible for its obligations.

- Other indicators that may provide evidence of control exist when the government has the power to:
  - Provide significant input into the appointment of members of the governing body of the organization;
  - Appoint or remove the CEO or other key personnel;
  - Establish or amend the mission or mandate of the organization;
  - Approve the business plans or budgets for the organization and require amendments;
  - Establish borrowing or investment limits or restrict the organization's investments;
  - Restrict the revenue-generating capacity of the organization, notably the sources of revenue; and
  - Establish or amend the policies that the organization uses to manage, such as those relating to accounting, personnel, compensation, collective bargaining or deployment of resources.

Overview of RRRP Enhancement – Options

	Program Envelope for H1 ($M)*	Monthly Rebate for R2:low density consumers (+/- from status quo)	Monthly Rebate for R1: medium-density customers	Monthly cost to ratepayers**
(Status Quo) RRRP program for R1 and R2 customers of Hydro One (as of January 2017)	$242M	$60.50/month	$0	$1.58/month
(1) Accelerates move to fixed distribution rates for those customers expected to see a reduction in costs.* **	$306-$332M	Distribution costs capped at $64.64/month. Benefit begins at 1,200kWh/month	Distribution costs capped at $55.70. Benefit begins at 955kWh/month.	$2.07/month
(2) Increase total RRRP envelope to reduce R2 and R1 distribution costs at 1000kWh/month to Algoma Power costs at 1000kWh/month	$292M	$66.61/month (+$6.11/month)	$4.91/month	$1.90/month
(3) Change RRRP program to a volumetric-based tiered benefit program where rebate will be dependent on customer consumption levels				
(3a) • Assume total RRRP program envelope of $300M and distribute to R2 & R1 based on tiered-benefit levels. • Tiered-benefit levels: divide customer base into 3 equal buckets. Allocate $300M to each bucket in proportion to contribution of H1 distribution revenues. • Assume fixed current $60.50 rebate no longer applies equally to all R2 customers.	$300M	750kWh or less: $37.65 (-$22.85) 750 to 1,200 kWh: $44.74 (-$15.76) 1,200 kWh or more: $60.69 (+$0.49)	600Kwh or less: $16.05 600kwh to 1,000Kwh: $19.22 1,000kwh or more: $25.67	$1.90/month
(3b) • Expand RRRP program envelope and distribute to both R2 & R1 customers based on tiered-benefit levels. • Tiered-benefit levels determined in same manner as 3(a). • Assume fixed current $60.50 still applies to all R2 customers	$542M	750kWh or less: $81.66 (+$21.16) 750kwh to 1,200 kWh:$91.90 (+$31.40) 1,200 kWh or more: $114.95 (+$54.45)	600 kWh or less: $23.19 600kwh to 1,000 kWh: $27.76 1,000 kWh or more: $37.09	$3.20/month

*All option costs are inclusive of status quo RRRP, except 3(a) which assumes a phaseout of the program.
**Only if left on ratebase. Will increase based on yearly expansion.
***Based on Hydro One estimates. Consumer benefit is total costs subtract the cap amount.
Note: figures do not include ~$50M in RRRP costs currently supporting Algoma Power and Hydro One Remotes

All RRRP Options – Fiscal Considerations

Ratepayer Impacts

- Some consumers with low consumption may still have proportional higher distribution rates. These customers will experience bill pressures both from the transition to fixed rates and from expected general rate increases (for which they are responsible for an increasing proportion).
- Hydro One distribution rates are expected to climb in coming years. The projected 2017 fixed rates of $64.64 (R2) and $55.70 (R1) will rise through the transition period. Therefore customers who receive a benefit will still experience bill increases.

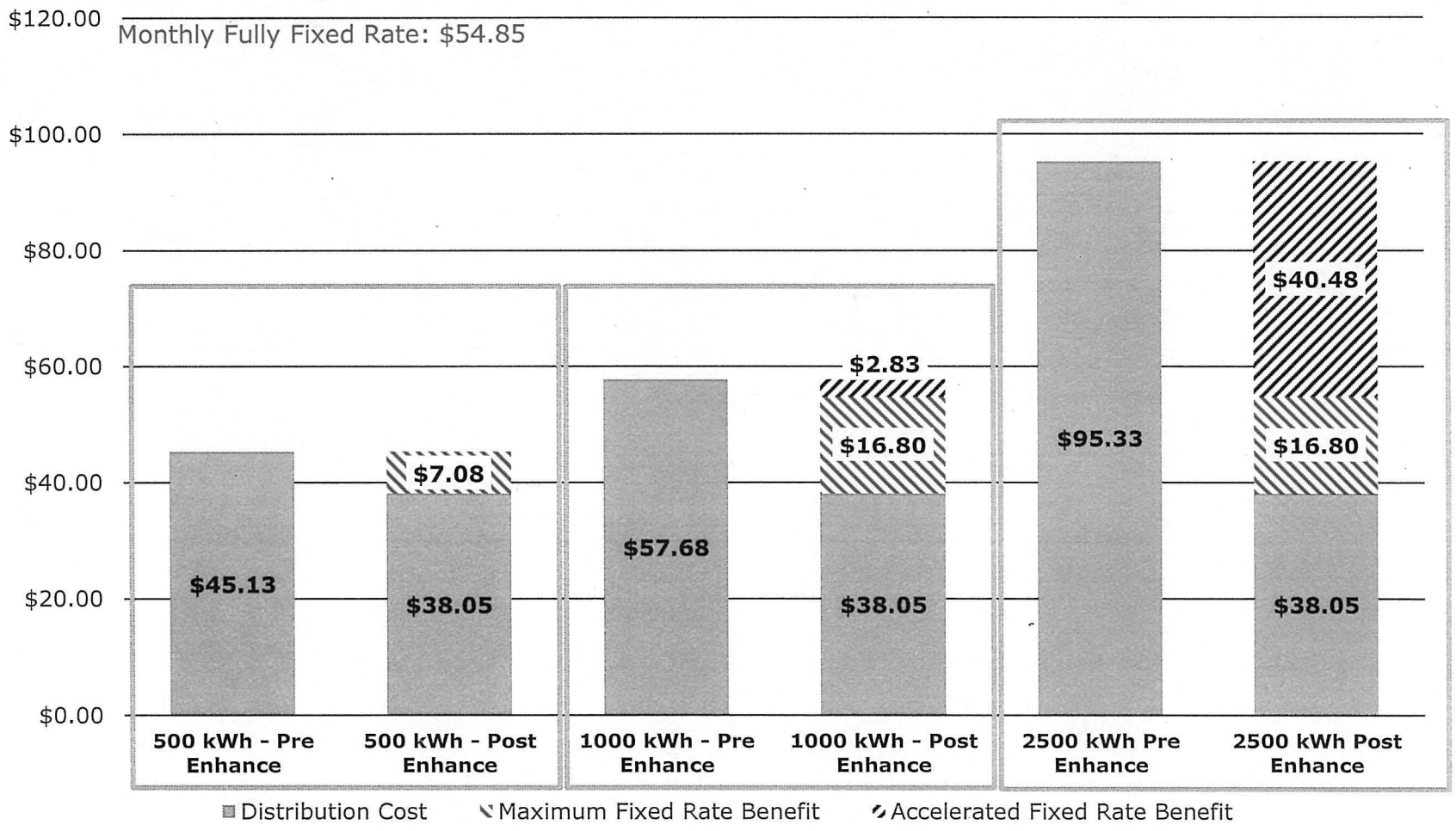
Fiscal Impacts

- Having the original RRRP subsidy remain on the rate-base allows for program expansion from the fiscal plan while avoiding an additional $242M tax-base impact.
- 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 significantly, which would have significant impact on fiscal requirements and ratepayer impacts.
- Cost for Hydro One to implement and to upgrade customer billing systems is likely material. Those costs would ultimately be passed back to the customers of those LDCs.
- The Ministry will need to consider how consumption thresholds and/or benefit levels rise alongside the expected rise in distribution rates.
- There is a high risk of entrenching external subsidies, as there is no clear path to transition away from subsidies and toward a more sustainable, cost-based rate framework.

All RRRP Options – Implementation Considerations

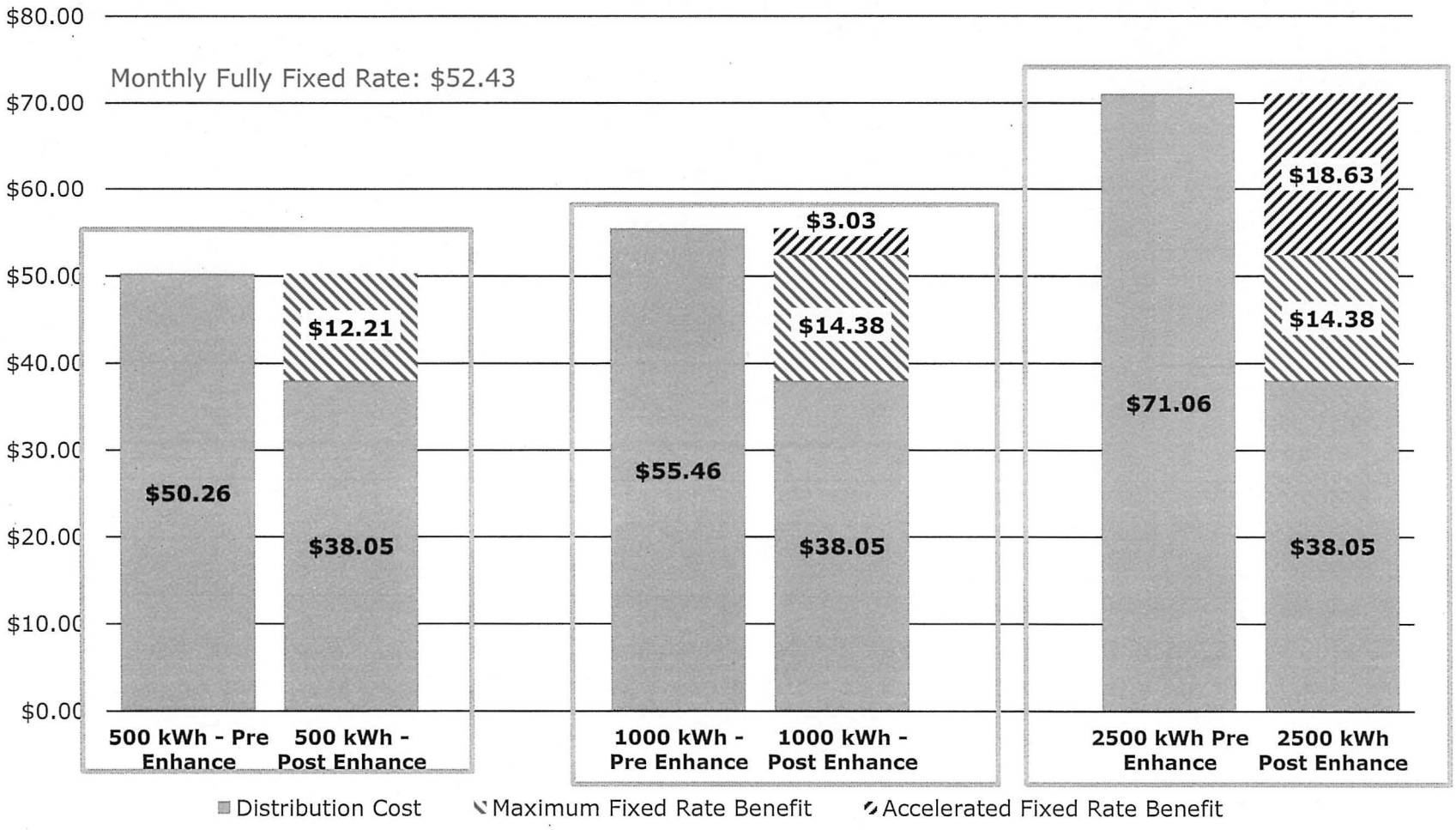
- LDCs would track credit variances in a variance account and settle amounts with the IESO, which receives taxpayer funding from ENERGY/MoF in the same manner as the 8% rebate happens today.
  - While this new program would build on exiting transfer payment protocols in use under the ORECA, it would be complex for Hydro On to implement, as CIS upgrades are likely needed.
  - Depending on the option chose, OEB estimates that the implementation would take at least 6 months or more, following finalized regulations, given need to change customer billing systems and determine settlement procedures.
- RRRP focuses on ameliorating differences in distribution costs, not the entire Delivery line of the residential bill which also includes transmission and line loss costs.
- Eligibility for RRRP is currently determined by LDC density levels. Hydro One R1 has similar density levels to some other LDCs (e.g., InnPower). Thus if the intention is to limit expansion to just Hydro One R1, a new eligibility criteria would have to be developed (legal and regulatory risks would need to be explored).
- 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.
- The development of an appropriate program can be initiated through a letter to the Ontario Energy Board via s. 35 of the *Ontario Energy Board Act, 1998*.

High Distribution Cost LDCs – Accelerating Fixed Rate Benefit/Normalizing Fixed Rates (Algoma)



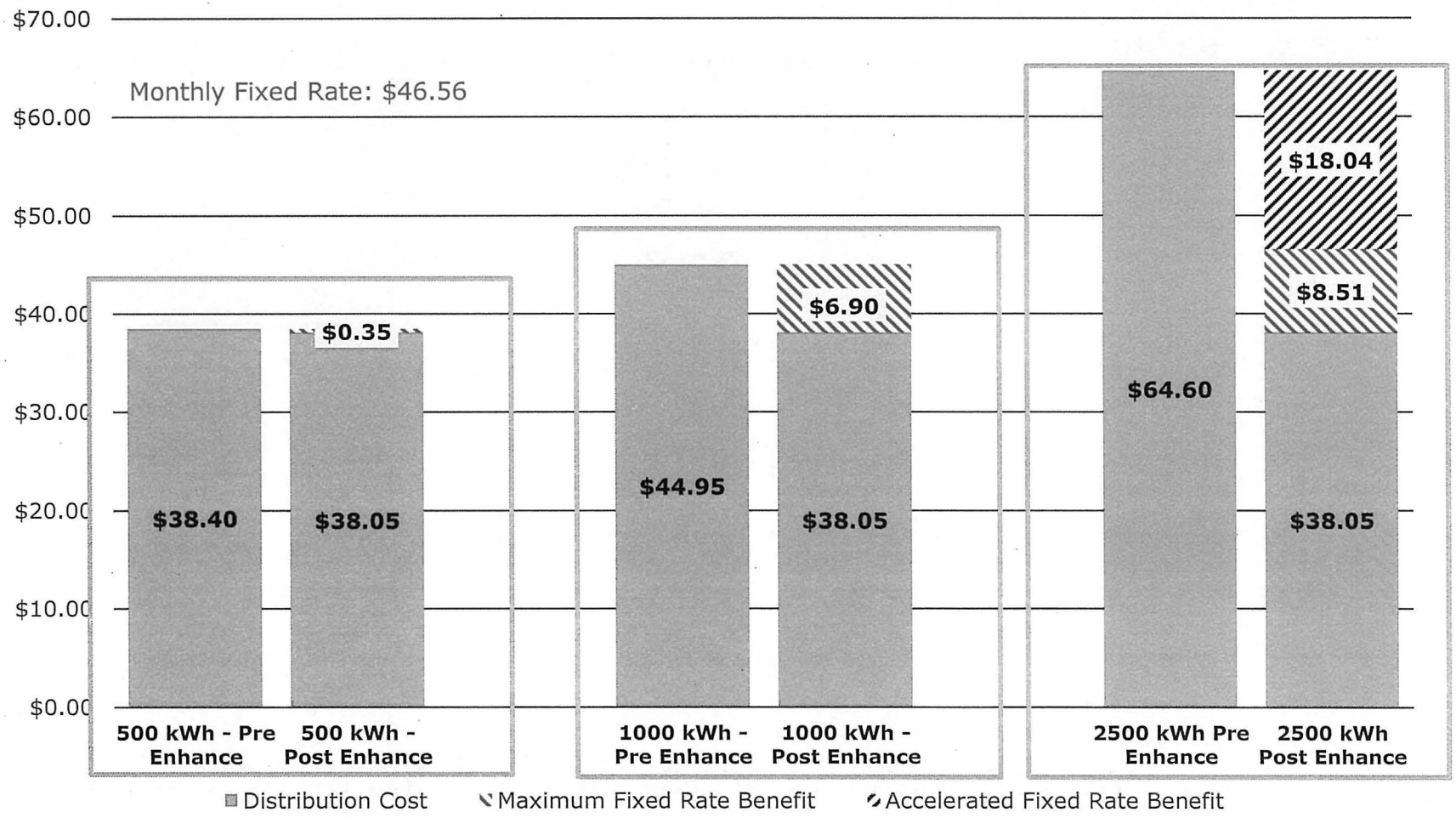
Note: *Rates are for 2017 (either approved or proposed)*

High Distribution Cost LDCs – Accelerating Fixed Rate Benefit/Normalizing Fixed Rates (Atikokan)



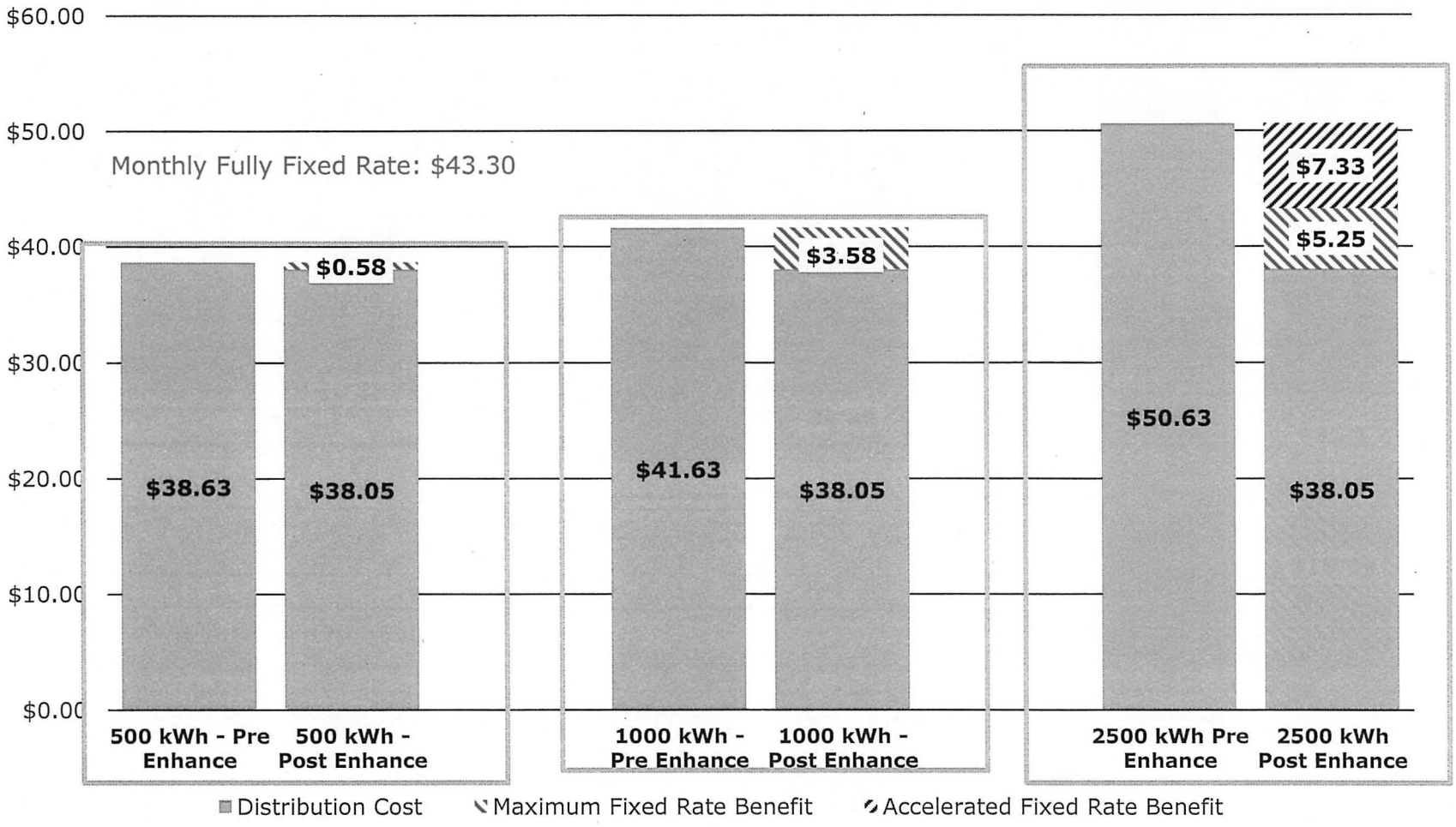
Note: Rates are for 2017 (either approved or proposed)

High Distribution Cost LDCs – Accelerating Fixed Rate Benefit/Normalizing Fixed Rates (Chapleau PUC)



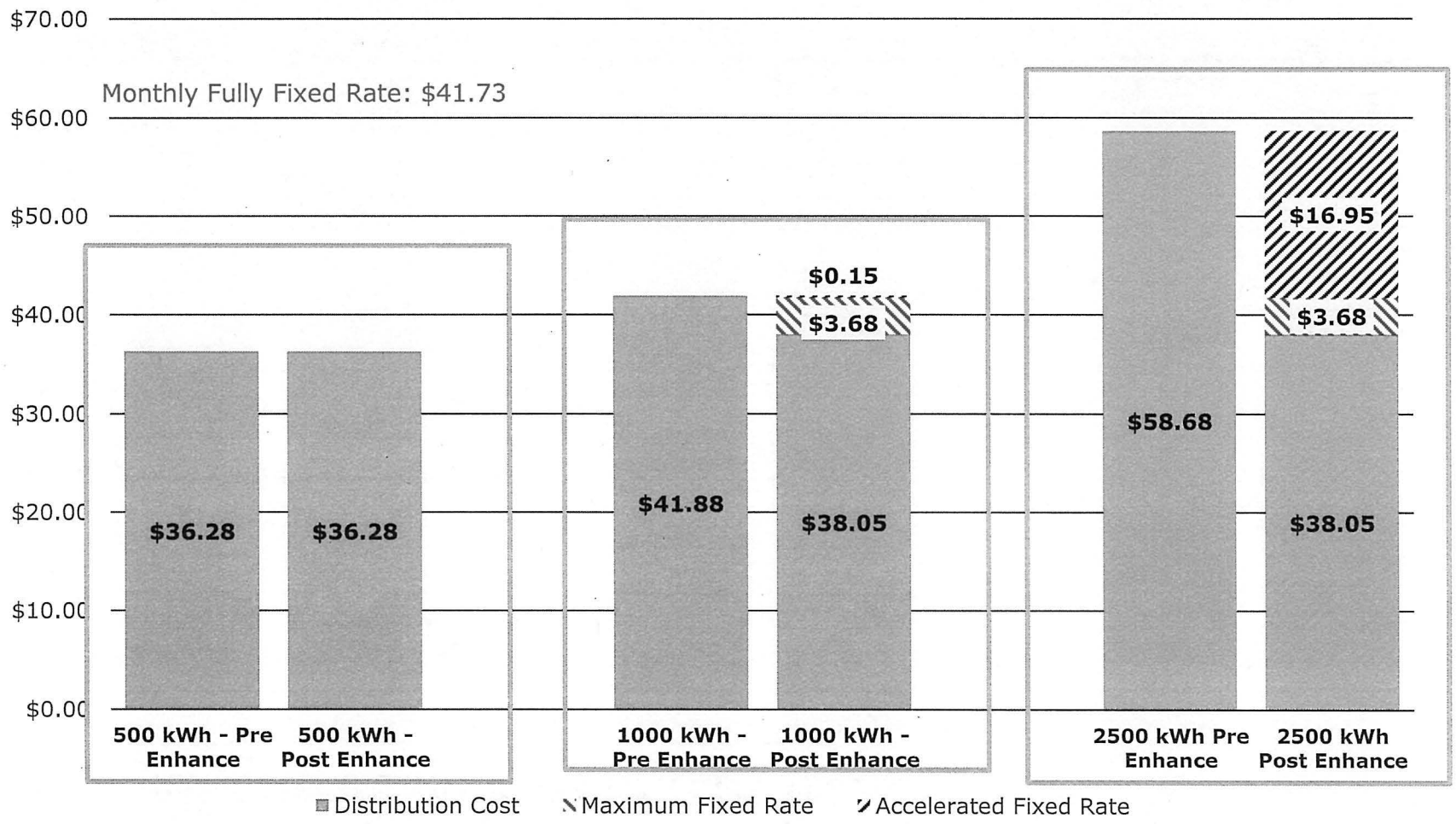
Note: *Rates are for 2017 (either approved or proposed)*

High Distribution Cost LDCs – Accelerating Fixed Rate Benefit/Normalizing Fixed Rates (Sioux Lookout)



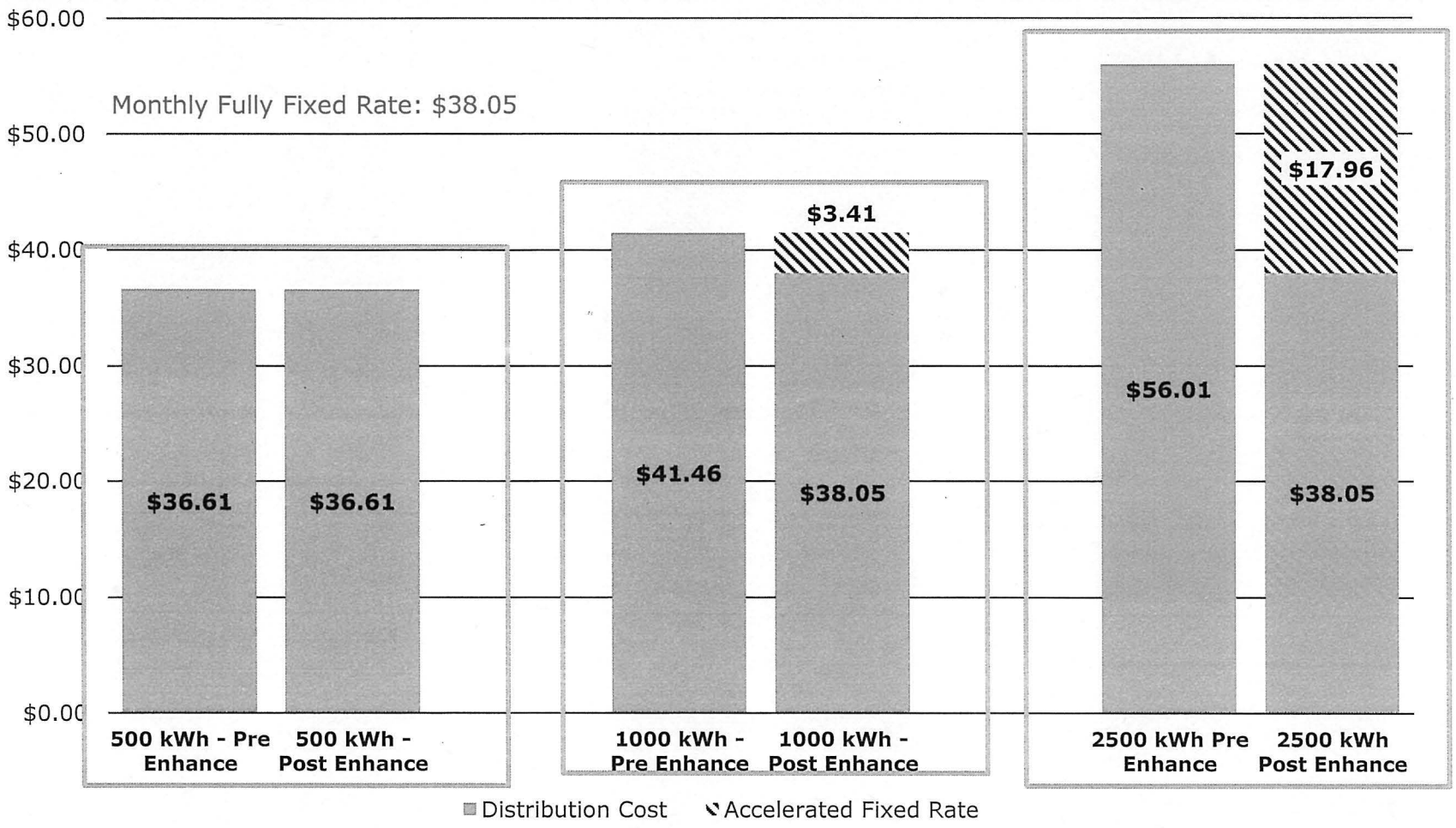
Note: *Rates are for 2017 (either approved or proposed)*

High Distribution Cost LDCs – Accelerating Fixed Rate Benefit/Normalizing Fixed Rates (Parry Sound)



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

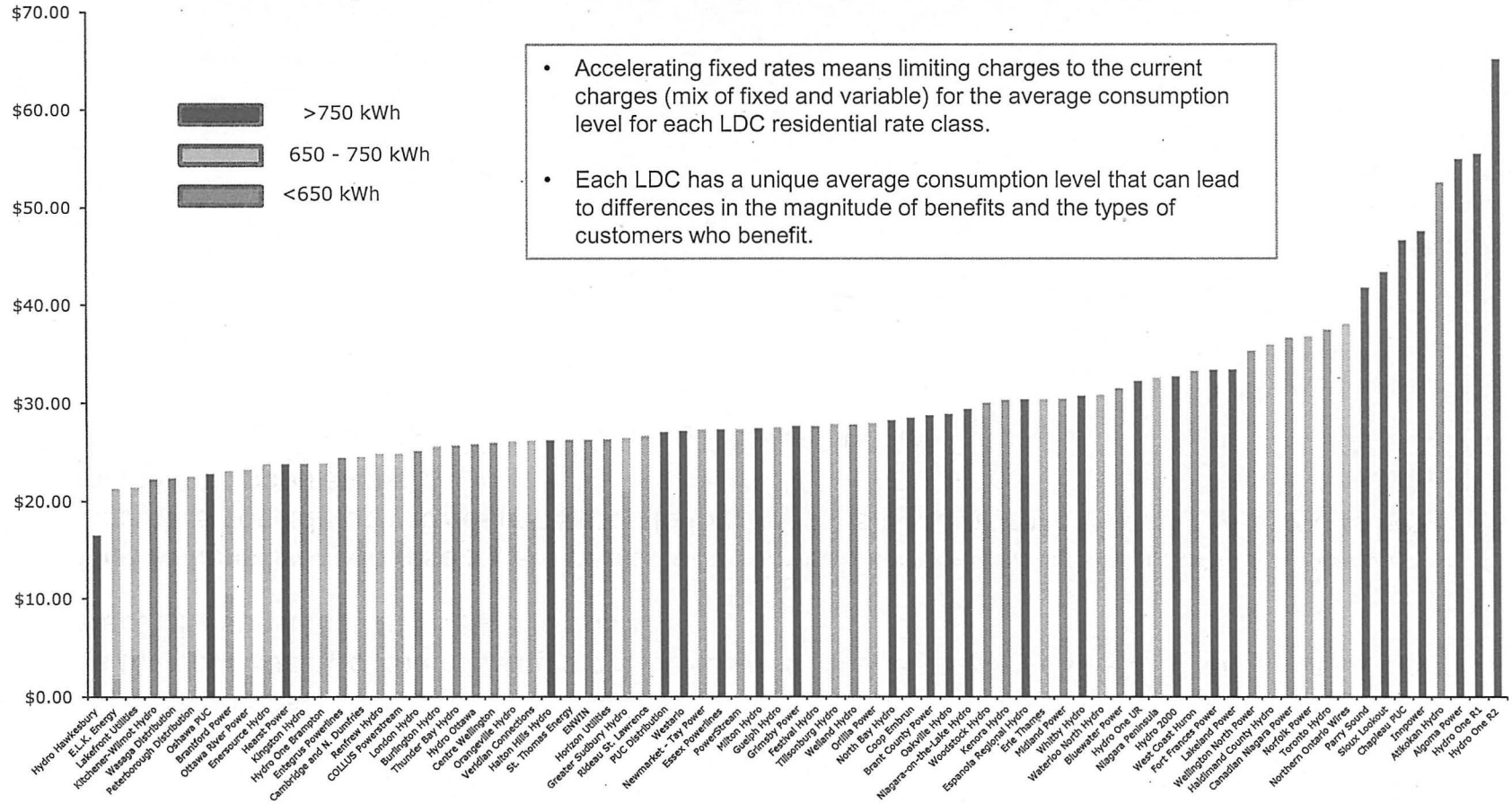
High Distribution Cost LDCs – Accelerating Fixed Rate Benefit/Normalizing Fixed Rates (Northern Ontario Wires)



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

Accelerating Fixed Rate Impacts – LDC Disparity

Projected 2017* Monthly Residential Fixed Distribution Bill
Calculated by the OEB - Colour Coded by Average Monthly Residential Use for 2015 (Norfolk 2014))



- Accelerating fixed rates means limiting charges to the current charges (mix of fixed and variable) for the average consumption level for each LDC residential rate class.
- Each LDC has a unique average consumption level that can lead to differences in the magnitude of benefits and the types of customers who benefit.

*2017 Approved and Proposed (Decisions Pending)

First Nations Rate Assistance – Context

- 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*
  - 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.
  - 67% of families residing on-reserve are single parent families, compared to the Canadian equivalent of 19%.

***Note:** Average income for those aged 15 and older in 2010
**** Note:** 2006 Census data

OEB First Nations Rate Report – Background

- Through the First Nations-Ontario Political Accord and Canada's Truth and Reconciliation Commission's Calls to Action, there is a renewed spirit to work together on issues of mutual interest, including resource benefits sharing, the treaty relationship, and jurisdiction.
- First Nation and Political-Territorial Organization leaders have advocated for the review of delivery charges associated with transmission and distribution assets within the context of historical grievances and the need for electricity rate relief for on-reserve customers.
- The Minister committed to consider options for addressing the issue at the Apr. 18, 2016 First Nations-Ontario Energy Table meeting.
- In June 2016, pursuant to s.35 of the OEB Act, the Minister 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.*"
- In order to inform its report, the OEB engaged with First Nations, including remote communities, the distributors serving them, and consumer groups such as the Low Income Energy Network, in a series of meetings across the province. It also established an Advisory Committee with the Chiefs of Ontario's Grievance Committee.
- 48 First Nations attended meetings held in the Fall of 2016 in London, Couchiching First Nation, Sudbury, Toronto and Thunder Bay. The OEB also held sessions with Local Distribution Companies (LDCs) and consumer groups.
- The OEB provided its report to the minister on December 29, 2016.

Distributors Serving On-Reserve First Nation Customers[1]

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
Fort Albany Power Corporation	No Data Filed
Kashechewan Power Corporation	No Data Filed
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**

[1]Data is based on distributors' reports to the OEB. Customer numbers for Hydro One reflect total on-reserve residential customer accounts, not all of which have been identified as First Nations customers for tax-exemption purposes. The total number of on-reserve First Nations residential accounts represents the maximum number of residential accounts that could be held by First Nations customers.

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

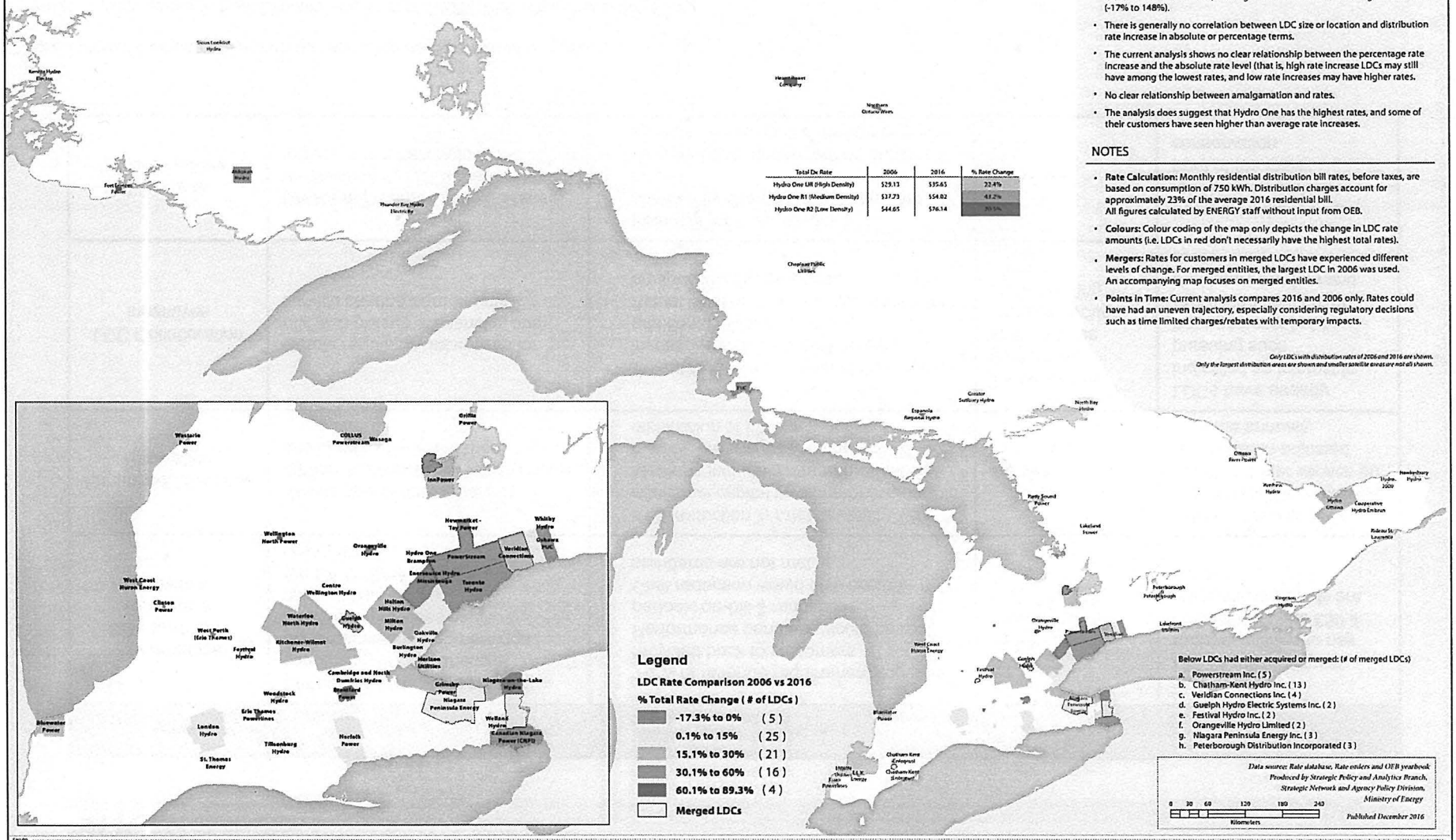
OEB – LDC Efficiencies and Rates (Performance Incentives)

Option	Description	Potential Cost Impacts*	Timeline**	Notes
Performance Standards with Rewards & Penalties	Strengthen LDC scorecard by connecting to LDC financial performance through earnings sharing or penalties paid to consumers. Ex: SAIDI/SAIFI; OM&A per customer	• 1-2% of revenue requirement could be recycled back to customers. • Performance penalties would be real, periodic on-bill $ reductions. • Cost reduction would only occur if standards are not met.	1 year	UK Regulator Ofgem requires utilities to pay consumers up to £50 if reliability standards are not met.
Enhanced Economic Regulation	Revise rate-setting to reflect tightening productivity requirements and capital cost avoidance.	• <1% reduction in rates annually, with additional capital investment avoidance. • Methods include stronger productivity factors, broader peer comparisons, and elimination of ICM.	1-3 years	Incents innovation by requiring LDCs to provide equal or better service on less inflation-adjusted revenue annually.
LDC Collaboration Incentives	Create regulatory incentives for LDCs to pursue efficiencies and service sharing agreements.	• Potential to avoid individual LDC capital investments of up to six figures, plus additional OM&A tightening. • Actual level of rate reduction dependent on specific LDC proposals.	1 year for new guidelines, savings to be realized through LDC planning process.	LDCs have already indicated an interest in pursuing such arrangements but have expressed concern on regulatory barriers and costs.
Line Loss Accountability	Create appropriate benefit-sharing mechanism so LDCs are incented to pursue line loss reductions.	• Potential for 1-3% reduction in commodity charges associated with losses. • Requirements dependent on business cases so costs don't outweigh benefits.	1-2 years	Potential linkages with related proposal for in-front of the meter conservation.

***Note:** Dependent on implementation specifics as determined by OEB

****Note:** Timelines begin from Ministry approval of OEB LTEP Implementation Plan

LDC Distribution Rate Changes (2006 vs 2016)

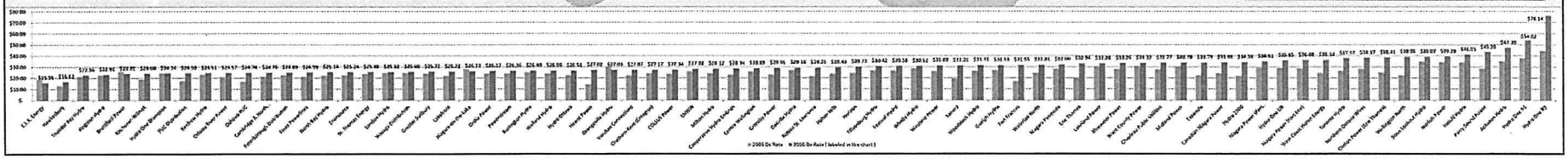


KEY FINDINGS

- In summary, distribution rates (including rate riders) have increased by about 24.5% across the Province, with significant variation between regions and LDCs (-17% to 148%).
- There is generally no correlation between LDC size or location and distribution rate increase in absolute or percentage terms.
- The current analysis shows no clear relationship between the percentage rate increase and the absolute rate level (that is, high rate increase LDCs may still have among the lowest rates, and low rate increases may have higher rates.
- No clear relationship between amalgamation and rates.
- The analysis does suggest that Hydro One has the highest rates, and some of their customers have seen higher than average rate increases.

NOTES

- **Rate Calculation:** Monthly residential distribution bill rates, before taxes, are based on consumption of 750 kWh. Distribution charges account for approximately 23% of the average 2016 residential bill.
  All figures calculated by ENERGY staff without input from OEB.
- **Colours:** Colour coding of the map only depicts the change in LDC rate amounts (i.e. LDCs in red don't necessarily have the highest total rates).
- **Mergers:** Rates for customers in merged LDCs have experienced different levels of change. For merged entities, the largest LDC in 2006 was used. An accompanying map focuses on merged entities.
- **Points in Time:** Current analysis compares 2016 and 2006 only. Rates could have had an uneven trajectory, especially considering regulatory decisions such as time limited charges/rebates with temporary impacts.



Ontario

MINISTRY OF
ENERGY

Rate Mitigation Plan Options

Working Draft

February 8, 2017

CONFIDENTIAL DRAFT

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 Hydro One transmission and 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).
  - Increasing cost effectiveness and improving efficiency by adopting new electricity market approaches (e.g., competitive LRP, no new NUG contracting).

- 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.

Options

- In recognition of the costs borne by ratepayers related to decarbonizing and modernizing the province's electricity sector, options for further rate mitigation include:

1. Global Adjustment (GA) Smoothing – Provide significant and immediate rate relief through cost deferral of the GA.

2. Electricity Support Programs to Help the Most Vulnerable – Provide a greater focus on vulnerable consumers:
   - Rural or Remote Electricity Rate Protection (RRRP) Enhancement (Delivery Charge Relief);
   - Ontario Electricity Support Program (OESP) Expansion;
   - LDC Affordability Fund; and
   - First Nations Rate.

3. Ontario Energy Board (OEB) – Identify opportunities for OEB red-tape reduction and future LDC efficiencies and rates.

4. Ontario Power Generation (OPG) – Find further efficiencies in operations and pass on savings to ratepayers.

5. Independent Electricity System Operator (IESO) – Modernize Ontario's electricity market through electricity Market Renewal initiatives.

GA Smoothing – Key Assumptions

- The following slides show potential rate mitigation measures to meet a targeted 25% 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 across the province due to differences in *current prices*, *distribution rates* and *consumption patterns*.
- The impacts are also based on a Global Adjustment (GA) forecast. Since the GA fluctuates and 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.

1a. GA Smoothing for All – 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.

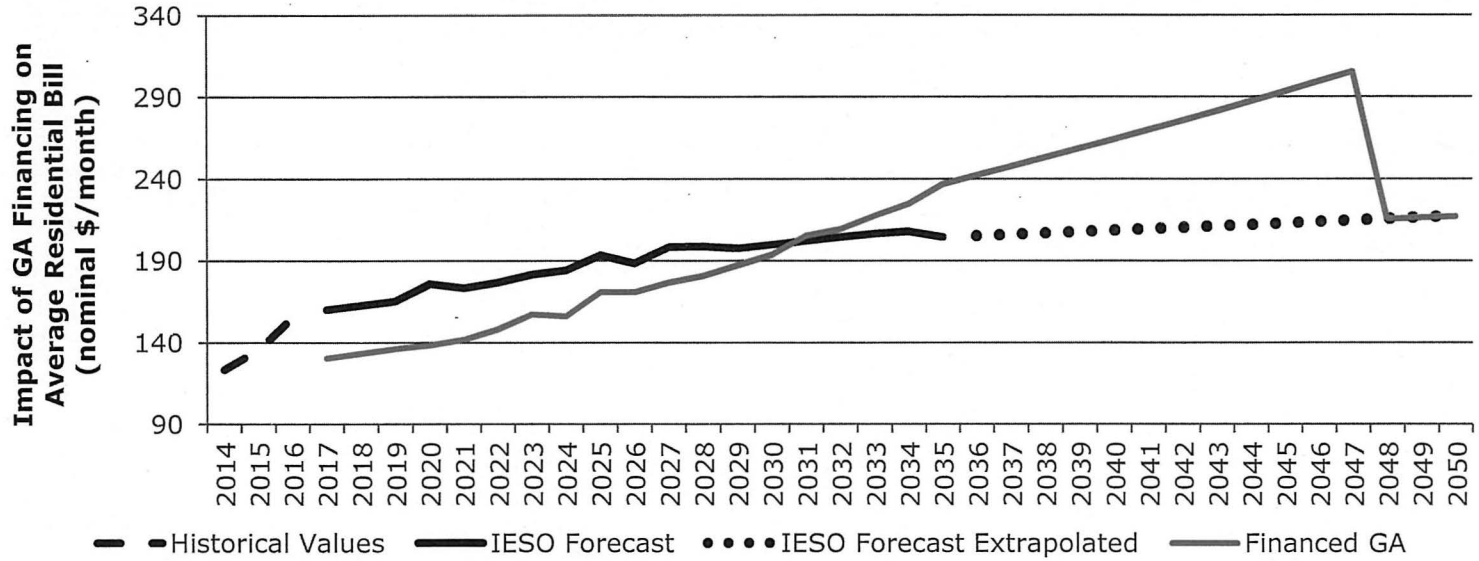
Residential (750 kWh/month)	Actual 2016	2017	2018	2019	2020	2021
Total Bill (includes HST)	**163**	**172**	**175**	**178**	**189**	**187**
Total Bill (excludes HST)	145	153	155	158	168	165
Impact of GA Financing		-26	-26	-26	-33	-28
Impact of OPG Efficiencies		-1	-1	-1	-1	-1
Impact of Tax-Basing Social 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**	**126**	**121**	**123**	**124**	**127**
Year-over-Year Change		-21%	-4%	2%	1%	2%
Change from Forecast		-24%	-24%	-24%	-28%	-25%

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**	**65**	**67**	**62**	**63**	**68**
Year-over-Year Change		-27%	3%	-8%	2%	8%
Change from Forecast		-28%	-28%	-29%	-33%	-29%

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.

1a. GA Smoothing for All (Borrow $4.7 billion in 2017)



	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 *($/month)*	-26.3	-26.1	-25.8	-33.1	-28.1	-25.4	-21.6	-25.0	-19.8	-15.4	-19.1	-15.9	-9.2	-5.4	2.8	4.2	9.8	14.9	28.7	32.7	36.7	40.8	44.9	49.1	53.3	57.5	61.8	66.2	70.7	75.3	79.9	0.0
Total Accumulated Debt *($ billion)*	4.7	9.5	14.6	21.2	27.2	33.1	38.6	45.0	50.8	56.1	62.3	68.3	73.4	78.1	81.6	85.0	87.6	89.4	88.7	87.2	84.8	81.6	77.3	72.1	65.7	58.2	49.4	39.3	27.8	14.7	0.0	0.0
Total Change in Accumulated Debt *($ billion)*	4.7	4.9	5.0	6.6	6.0	5.9	5.5	6.4	5.8	5.3	6.2	6.0	5.1	4.7	3.5	3.4	2.6	1.8	-0.7	-1.5	-2.4	-3.3	-4.2	-5.3	-6.4	-7.5	-8.8	-10.1	-11.5	-13.1	-14.7	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 plus 2.5 percentage points with no limit 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.

1b. GA Smoothing for All – Residential Bills Lowered 25% (with Tax-Base Funded 8% Rebate and Social Programs, RPP held constant)

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

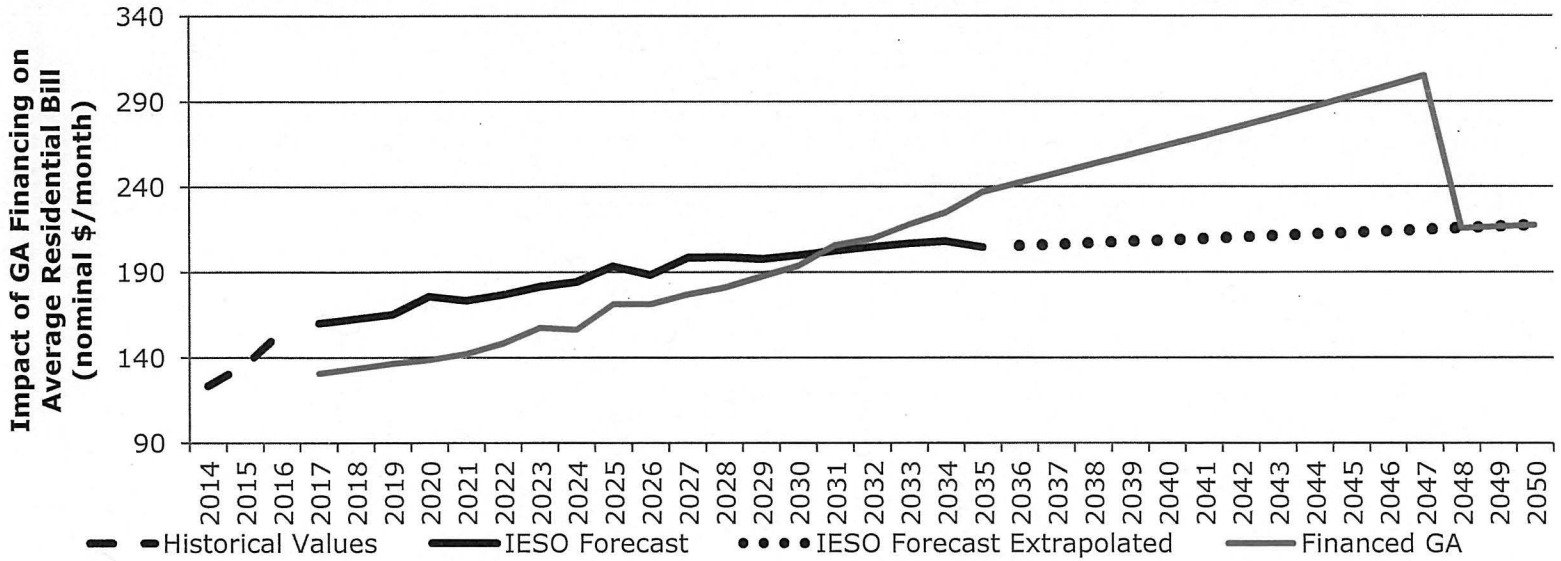
Residential (750 kWh/month)	Actual 2016	2017	2018	2019	2020	2021
Total Bill (includes HST)	**163**	**172**	**175**	**178**	**189**	**187**
Total Bill (excludes HST)		153	155	158	168	165
Impact of GA Financing (includes flat RPP commodity rate to the end of 2021)		-26	-26	-26	-33	-28
Impact of OPG Efficiencies		-1	-1	-1	-1	-1
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%**

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Class B Total (excludes HST)	**160**	**165**	**160**	**162**	**173**	**169**
Class B Revised Total (excludes HST)	**160**	**126**	**121**	**123**	**124**	**127**
Year-over-Year Change		-21%	-4%	2%	1%	2%
Change from Forecast		-24%	-24%	-24%	-28%	-25%

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**	**65**	**67**	**62**	**63**	**68**
Year-over-Year Change		-27%	3%	-8%	2%	8%
Change from Forecast		-28%	-28%	-29%	-33%	-29%

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.

1b. GA Smoothing for All (Borrow $4.7 billion in 2017)



	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 *($/month)*	-26.3	-26.1	-25.8	-33.1	-28.1	-25.4	-21.6	-25.0	-19.8	-15.3	-19.1	-15.8	-9.2	-5.4	2.8	4.2	9.8	14.9	28.7	32.7	36.7	40.8	44.9	49.1	53.3	57.5	61.8	66.2	70.7	75.3	79.9	0.0
Total Accumulated Debt *($ billion)*	4.7	9.5	14.6	21.2	27.2	33.1	38.6	45.0	50.8	56.0	62.3	68.3	73.4	78.1	81.6	85.0	87.6	89.4	88.7	87.2	84.8	81.5	77.3	72.1	65.7	58.2	49.4	39.3	27.8	14.7	0.0	0.0
Total Change in Accumulated Debt *($ billion)*	4.7	4.9	5.0	6.6	6.0	5.9	5.5	6.4	5.8	5.3	6.2	6.0	5.1	4.7	3.5	3.4	2.6	1.8	-0.7	-1.5	-2.4	-3.3	-4.2	-5.3	-6.4	-7.5	-8.8	-10.1	-11.5	-13.1	-14.7	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 plus 2.5 percentage points with no limit 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.

1c. GA Smoothing for All – Residential Bills Lowered 25% (with Tax-Base Funded 8% Rebate and Social Programs, 3% increase)

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

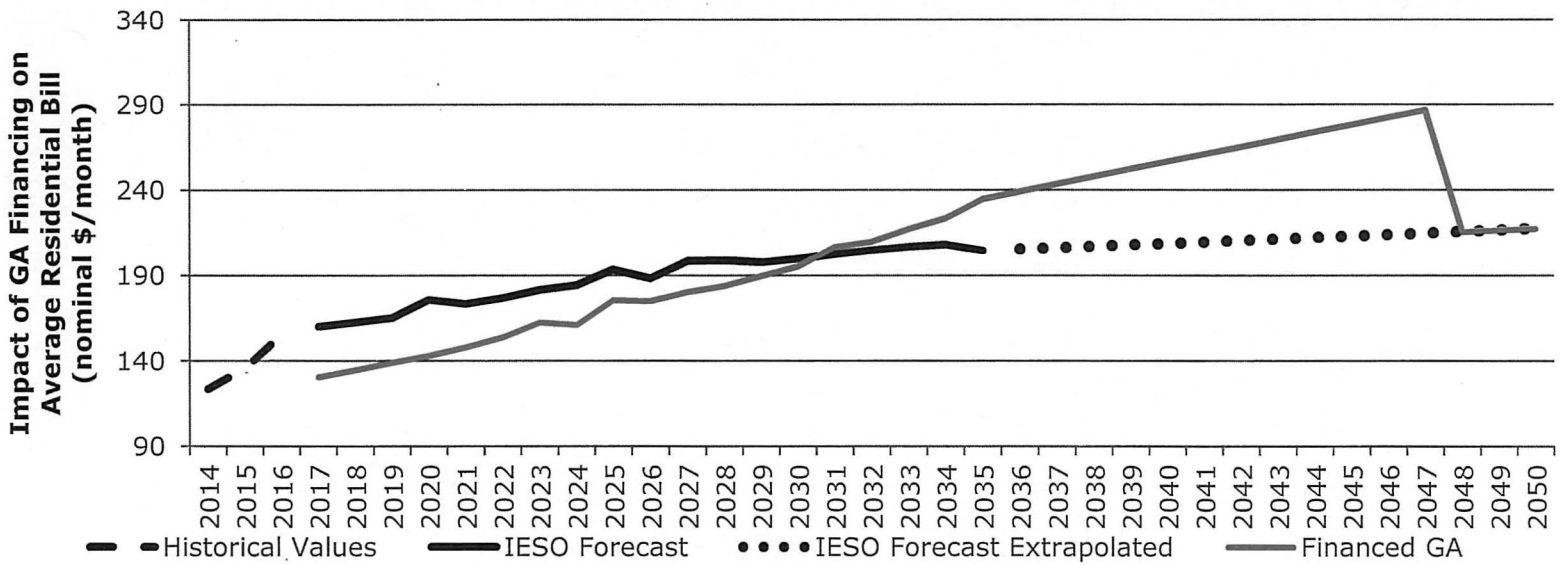
Residential (750 kWh/month)	Actual 2016	2017	2018	2019	2020	2021
Total Bill (includes HST)	**163**	**172**	**175**	**178**	**189**	**187**
Total Bill (excludes HST)		153	155	158	168	165
Impact of GA Financing		-26	-25	-23	-29	-23
Impact of OPG Efficiencies		-1	-1	-1	-1	-1
Impact of Tax-Basing Social Programs		-2	-2	-2	-3	-3
Subtotal		123	127	131	135	139
8% rebate		-10	-10	-10	-11	-11
HST		16	16	17	17	18
Revised Bill (includes HST)	**163**	**129**	**133**	**137**	**141**	**146**
Year-over-Year Change		-21%	3%	3%	3%	3%
Change from Forecast		**-25%**	**-24%**	**-23%**	**-25%**	**-22%**

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**	**126**	**122**	**126**	**129**	**134**
Year-over-Year Change		-21%	-3%	3%	2%	4%
Change from Forecast		-24%	-23%	-22%	-25%	-21%

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**	**65**	**68**	**64**	**66**	**73**
Year-over-Year Change		-27%	5%	-6%	3%	9%
Change from Forecast		-28%	-26%	-27%	-30%	-24%

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.

1c. GA Smoothing for All (Borrow $4.7 billion in 2017)



	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 *($/month)*	-26.3	-24.8	-23.3	-29.2	-22.8	-20.4	-16.9	-20.6	-15.8	-11.7	-15.9	-13.2	-7.0	-3.8	3.8	4.6	9.5	13.8	26.8	30.0	33.1	36.2	39.3	42.4	45.4	48.5	51.5	54.5	57.5	60.6	63.6	0.0
Total Accumulated Debt *($ billion)*	4.7	9.3	13.9	19.8	24.8	29.7	34.2	39.5	44.4	48.7	54.0	59.1	63.3	67.2	70.0	72.8	74.8	76.1	75.1	73.4	71.0	67.9	64.0	59.3	53.8	47.4	40.0	31.6	22.2	11.7	0.0	0.0
Total Change in Accumulated Debt *($ billion)*	4.7	4.6	4.6	5.9	5.0	4.9	4.5	5.4	4.8	4.3	5.3	5.1	4.3	3.9	2.8	2.8	2.0	1.3	-1.0	-1.7	-2.4	-3.1	-3.9	-4.7	-5.5	-6.4	-7.4	-8.4	-9.4	-10.5	-11.7	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 plus 1.2 percentage points with no limit 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.

1d. 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.

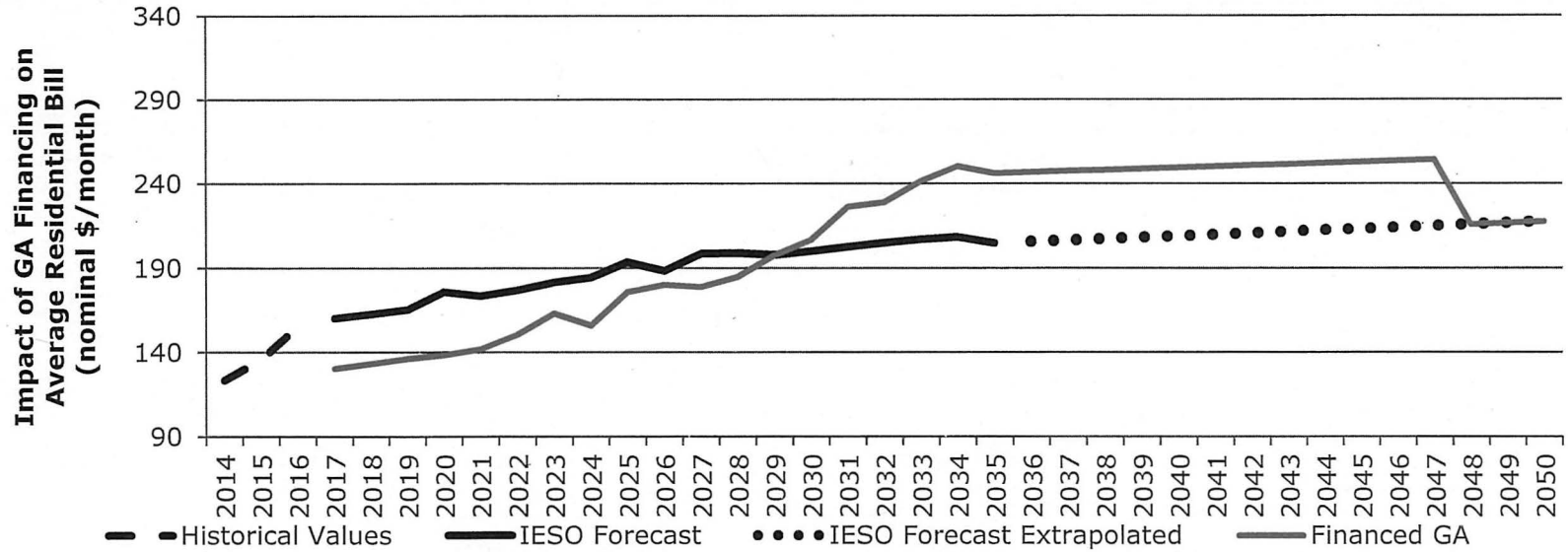
Residential (750 kWh/month)	Actual 2016	2017	2018	2019	2020	2021
Total Bill (includes HST)	**163**	**172**	**175**	**178**	**189**	**187**
Total Bill (excludes HST)	145	153	155	158	168	165
Impact of GA Financing		-26	-26	-26	-33	-28
Impact of OPG Efficiencies		-1	-1	-1	-1	-1
Impact of Tax-Basing Social 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**	**161**	**156**	**157**	**168**	**164**
Year-over-Year Change		1%	-3%	1%	7%	-2%
Change from Forecast		-3%	-3%	-3%	-3%	-3%

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**	**87**	**89**	**84**	**91**	**91**
Year-over-Year Change		-3%	2%	-6%	9%	1%
Change from Forecast		-4%	-4%	-5%	-5%	-5%

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.

1d. GA Smoothing for RPP Only (Borrow $2.2 billion in 2017)



	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 *($/month)*	-26.3	-26.1	-25.8	-33.1	-28.1	-23.5	-16.6	-25.2	-15.7	-7.5	-17.4	-12.4	-0.1	5.7	21.1	21.4	30.7	37.3	36.8	36.7	36.5	36.4	36.2	36.1	35.9	35.8	35.6	35.5	35.3	35.2	35.0	0.0
Total Accumulated Debt *($ billion)*	2.2	4.5	6.8	9.9	12.7	15.3	17.4	20.4	22.7	24.5	27.2	29.6	31.1	32.2	32.1	32.0	31.0	29.5	27.8	26.1	24.3	22.3	20.3	18.2	16.0	13.6	11.2	8.6	5.9	3.0	0.0	0.0
Total Change in Accumulated Debt *($ billion)*	2.2	2.3	2.4	3.1	2.8	2.6	2.1	3.0	2.3	1.8	2.7	2.4	1.5	1.1	-0.1	-0.1	-0.9	-1.6	-1.7	-1.7	-1.8	-1.9	-2.0	-2.1	-2.2	-2.3	-2.5	-2.6	-2.7	-2.9	-3.0	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.

1e. GA Smoothing for RPP Only – Residential Bills Lowered 20% (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.

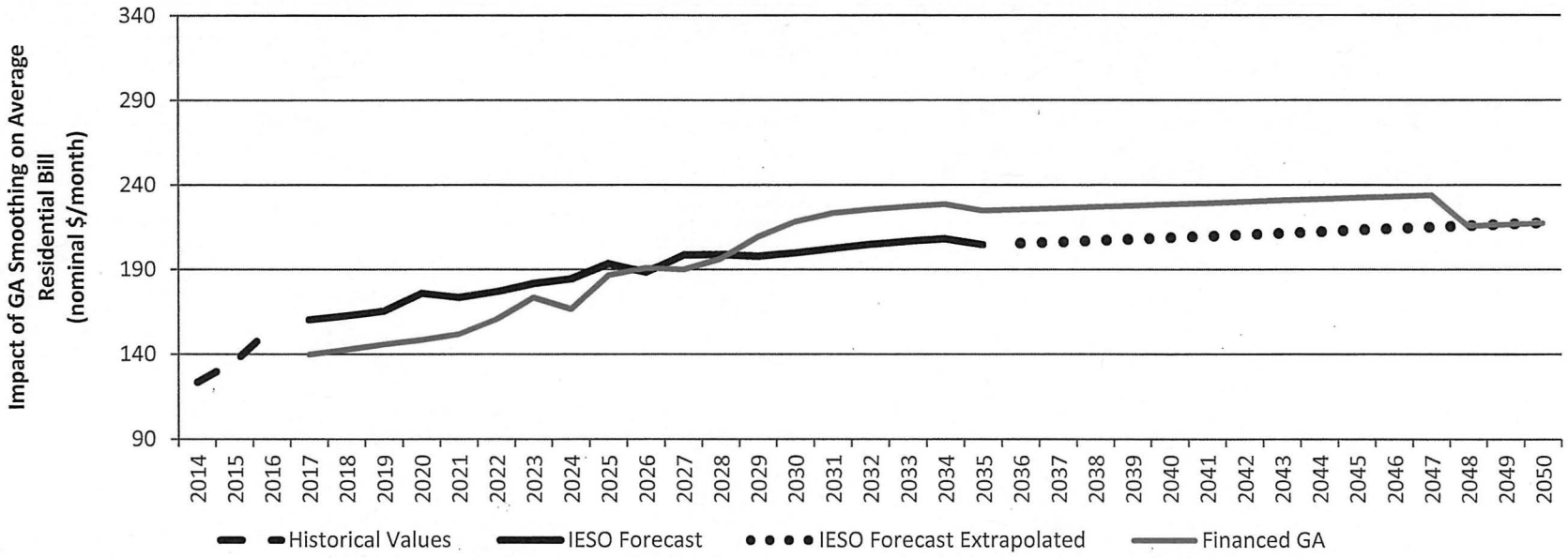
Residential (750 kWh/month)	Actual 2016	2017	2018	2019	2020	2021
Total Bill (includes HST)	**163**	**172**	**175**	**178**	**189**	**187**
Total Bill (excludes HST)	145	153	155	158	168	165
Impact of GA Financing		-18	-18	-17	-24	-19
Impact of OPG Efficiencies		-1	-1	-1	-1	-1
Impact of Tax-Basing Social 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**	**161**	**156**	**157**	**168**	**164**
Year-over-Year Change		1%	-3%	1%	7%	-2%
Change from Forecast		-3%	-3%	-3%	-3%	-3%

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**	**87**	**89**	**84**	**91**	**91**
Year-over-Year Change		-3%	2%	-6%	9%	1%
Change from Forecast		-4%	-4%	-5%	-5%	-5%

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.

1e. GA Smoothing for RPP Only (Borrow $1.5 billion in 2017)



	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 *($/month)*	-18.1	-17.7	-17.3	-24.4	-19.2	-14.4	-7.4	-15.8	-6.1	2.4	-7.4	-2.2	10.3	16.3	18.6	18.5	18.3	18.2	18.0	17.9	17.8	17.7	17.7	17.6	17.5	17.5	17.4	17.3	17.2	17.2	17.1	0.0
Total Accumulated Debt *($ billion)*	1.5	3.0	4.6	6.9	8.8	10.4	11.6	13.5	14.6	15.2	16.6	17.6	17.7	17.2	16.6	15.9	15.1	14.4	13.6	12.7	11.8	10.9	9.9	8.9	7.8	6.7	5.4	4.2	2.9	1.5	0.0	0.0
Total Change in Accumulated Debt *($ billion)*	1.5	1.5	1.6	2.2	1.9	1.6	1.1	1.9	1.2	0.6	1.4	1.0	0.1	-0.4	-0.7	-0.7	-0.7	-0.8	-0.8	-0.8	-0.9	-0.9	-1.0	-1.0	-1.1	-1.1	-1.2	-1.3	-1.3	-1.4	-1.5	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 $1.5 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.

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.

- 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.

- 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.

1. GA Smoothing – Implementation Models

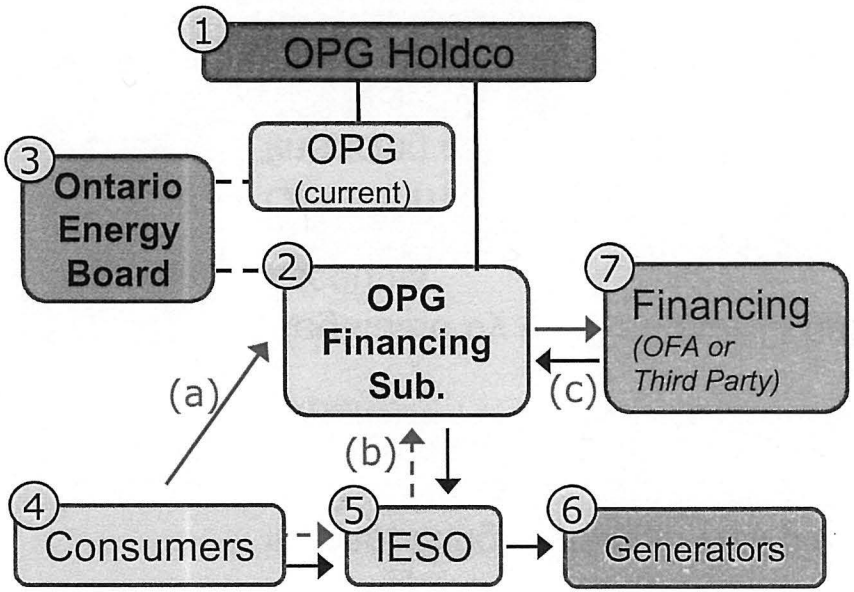
- The Province continues to consider mechanisms to finance and administer GA smoothing.
- Two leading options are under consideration:
  - Option A: Allow OPG or IESO assume responsibility for GA smoothing; and
  - Option B: Create a new special purpose entity, independent from the Province that would be dedicated to GA smoothing.

1. GA Smoothing – Option A: OPG

- OPG is potentially positioned to administer GA Smoothing for the following reasons:
  - OPG represents about half of Global Adjustment (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;
  - OPG borrows from Province, and from 3rd parties, allowing to access lowest cost financing option; and
  - Any incremental returns earned by OPG (although expected to be limited) would go back to taxpayers.

1. GA Smoothing – Option A: OPG

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



→ Early year fund flow

→ Future Repayment Mechanism

1. OPG would create a holding company which would own shares in the existing OPG Inc., as well as a new Financing Subsidiary.
2. 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).
3. OEB, while continuing to regulate the current OPG, provides light-touch oversight of the OPG Financing Sub., as well as the GA smoothing mechanism.
4. 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).
5. 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.
6. Generators continue to receive payments from IESO according to existing contract / regulatory structures.
7. 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.

1. GA Smoothing – Option A: OPG

- **Considerations**
  - Risk that OPG no longer receives Government Business Enterprise (GBE) accounting treatment.
    - Further analysis is required to determine whether the new financing subsidiary materially changes the business, would provide a commercial service, and would be self-sustaining (see the following slide for details on GBE accounting characteristics).
  - Need to develop a structure that sufficiently "ring-fences" the OPG Financing Subsidiary in order to insulate OPG's existing business lines, while also ensuring that OPG cannot benefit, nor assume responsibility for losses.
  - Both the Holdco and Subsidiaries will require rigorous oversight and governance structures (e.g., boards, MOAs etc.).
  - OPG will require a recovery mechanism that provides sufficient clarity and certainty to allow for cost-effective borrowing, while allowing for safety valves in the event of unexpected circumstances.
  - Consider interaction between OPG Financing subsidiary and IESO (e.g., is a collection services agreement required).

- **Immediate Next Steps**
  - Continue to work with OPG to build out recovery mechanism, key elements of regulatory / legislative framework, consider governance structures, and refine modelling.
  - OPG could solicit interest in financing this sort of construct from 1 or 2 pension funds (without specifics). Depending on viability and associated cost, work with accounting experts to determine importance of this option.
  - Develop regulatory framework in coordination with OEB and OPG.

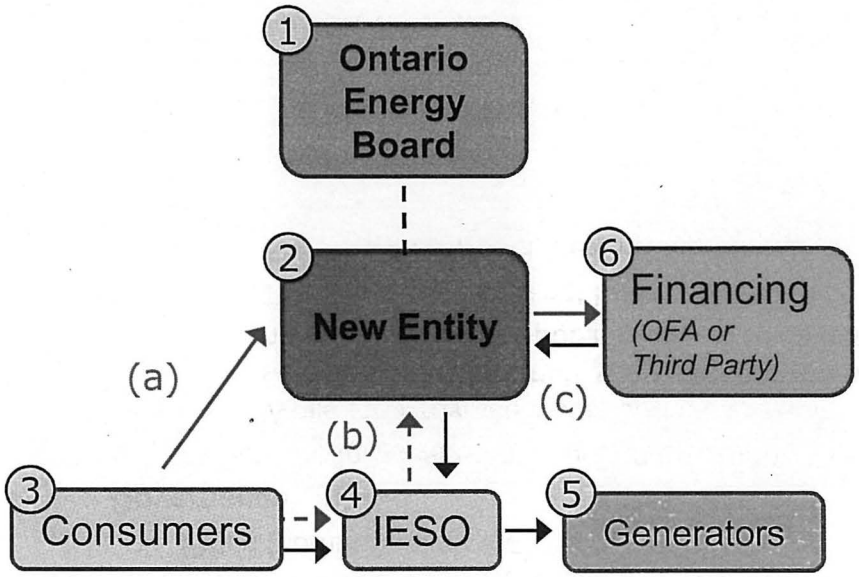
1. GA Smoothing – Option A: IESO

- In order for IESO to meet Government Business Enterprise accounting treatment, the following characteristics need to be considered:

Characteristic	Guidance & Comments	Findings & Recommendations
Separate with power to contract, sue and be sued	• IESO is a not-for-profit organization, non-taxable, corporation established pursuant to Part II of the Electricity Act, 1998. • IESO is not an agent of the Crown for any purpose • IESO has powers of a natural person	• According to KPMG characteristic is met
Delegated financial and operational authority to carry on a business	• Board of directors has been delegated the financial and operational authority to carry on the business. • Need to accept that the definition of a business can include providing economic benefits to participants (not limited to providing a return to investors) • IESO is allowed to retain profits to carry out its objects	• According to KPMG characteristic is met
Sells good and services to individuals and organizations outside of the government reporting entity as its principal activity	• IESO provides various services to market participants for the ultimate benefits of Ontario customers. • IESO has two OEB approved fees: one for electricity exports and one for electricity withdrawals for use in Ontario. These fees are charged on a per kWh rate, similar to LDCs and transmission companies	• According to KPMG characteristic is met under current construct • Although the smoothing mechanism is unlikely to be considered a service provided outside of the government entity, other IESO services continue to meet this test and predominate
It can maintain operations and meet liabilities from revenues received from sources outside of the government reporting entity	• IESO does not receive transfer payments from the Province. All costs are to be recovered from market participants. • Sustainability may be more challenging to demonstrate given implied government backstop needed to enable financing, unless recovery mechanism allows for a cushion for losses (e.g., equity returns on a part of financing)	• According to KPMG characteristic is met under current construct • Develop recovery mechanism with sufficiently robust to reasonably guarantee repayment, while providing a cushion for any losses

1. GA Smoothing – Option B: New Entity

- The diagram outlines a implementation approach that includes a new entity, which would hold the debt and the receivable from ratepayers.



1. The OEB oversees the new entity, as well as the GA smoothing mechanism on an ongoing basis.
2. The New Entity 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).
3. Electricity Consumers pay IESO a portion of the GA in early years. In the future, the New Entity recovers principle, interest and administrative costs from consumers. Customers bill presentation remains unchanged (costs should diminish in early years).
4. The IESO pays generators (in early years), partially from consumers and partially financed by the New Entity. (b) The IESO provides collection services to New Entity under a service contract.
5. Generators continue to receive payments from IESO according to existing contract / regulatory structures.
6. The OFA or a 3rd party lender funds the GA shortfall in early years and receives payments from the New Entity as debt is repaid. (c) Debt is subject to a contract between the New Entity and the lender.

1. GA Smoothing – Option B: New Entity

Framework and Oversight

- Legislative framework to establish constraints and limit authority of the new entity taking either a prescriptive or flexible approach.
- Ontario Energy Board could be empowered to approve GA smoothing schedule and oversee operations of the New Entity (compensation etc.).

Governance

- To achieve the desired accounting treatment, the entity would have to be structured as follows:
  - While the Province would choose the first board of directors or trustees, future directors or trustees would be selected in accordance with a mechanism created at the time the entity is created. The Province would have no ongoing role in appointments or in selection of key personnel, including the CEO.
  - The Province would not have a determining vote in the entity's business decisions.
  - The Province would have no recourse to the entity's assets and would not be responsible for the debt.
  - The Province could not dissolve the entity and having access to its assets and obligations.
  - The Province would not be able to change the mission or mandate of the entity, once it is created.
  - The Province would have no right to approve business plans or budgets or to require amendments to them.
  - The Province would not be able to alter the terms of the entity's debt arrangements.
  - The Province would not be able to affect the debt by controlling the entity's financial and operating policies.
  - The Province would not have input into the operational and financial policies of the entity, including accounting, personnel, compensation, collective bargaining or deployment of resources. For example, legislation like the *Broader Public Sector Executive Compensation Act, 2014* would not apply.
- As a result:
  - Staff would not be OPS employees.
  - Oversight would not be provided by Offices of the Legislature (AG, FAO etc.).
  - The *Freedom of Information and Protection of Privacy Act* would not apply.

2a. RRRP Enhancement – Accelerating Fixed Rate Benefit

- Currently, LDCs recover their costs through a combination of a fixed monthly charge and a volumetric charge based on kilowatt hours used. As a result, customers of the same LDC will be charged different amounts for distribution based on their consumption level.
- However, the OEB has made a determination to establish fixed distribution rates for residential consumers, in recognition that the majority of distribution costs are irrespective of the volume of consumption. The OEB believes moving to fixed rates will:
  - Enable residential customers to leverage new technologies, manage costs through conservation, and better understand the value of distribution services.
  - Establish a fairer way to recover the costs of providing distribution service.
  - Provide greater revenue stability for distributors, which will position them for technological change in the sector, remove any disincentive to promote conservation, and help with their investment planning.
- Fixed rates will be set at the average consumption level for a rate class in order to recover the same amount of revenue as the mix of fixed and variable charges does today. As a result, below-average volume consumers will experience cost increases and above-average volume consumers will experience cost decreases.
- The OEB is gradually phasing-in the move to fixed rates in order to mitigate the impact of these increases to below-average volume consumers. Most LDCs will receive fully fixed rates in 2019. Hydro One will be transitioned over a longer timeframe (2022-2023).
  - Hydro One's density-based rate classes and recent re-allocation of costs between the classes results in significant impacts for Hydro One low volume consumers. Providing the longer timeframe allows for the impact of the change to be held at less than 10% for low volume customers at the 10th percentile of consumption.

2a. RRRP Enhancement – Accelerating Fixed Rate Benefit Impacts

- Hydro One has estimated that if it accelerated the move to fixed rates effective 2017, the rates would be as follows:
  - R1: $55.70/month – the same cost as a customer who consumes 955kWh/month today.
  - R2: $64.64/month, when factoring in the $60.50 RRRP support – the same cost as a customer who consumes 1200kWh/month today.
- Using sample customer data provided by Hydro One, it is estimated that approximately 2/3^{rds} of Hydro One R1 and R2 customers would experience cost increases if this was implemented:
  - R1: ~146k customers would see cost decreases, and ~298k customers would see cost increases.
  - R2: ~117k customers would see cost decreases, and ~217k customers would see cost increases.
- However, support from the fiscal plan can be used to accelerate the move to fixed rates for those high volume consumers who benefit – leaving low volume consumers to experience no change.
  - Hydro One estimates this would cost $64 million. If the move was expanded to include Hydro One Urban (UR rate class) and Seasonal customers, the cost would be ~$90 million.
  - When layering on the current RRRP support of $242 million, program costs are between $306-$332 million.
  - As the move to fixed rates was completed, fiscal plan support for these customers could be withdrawn.

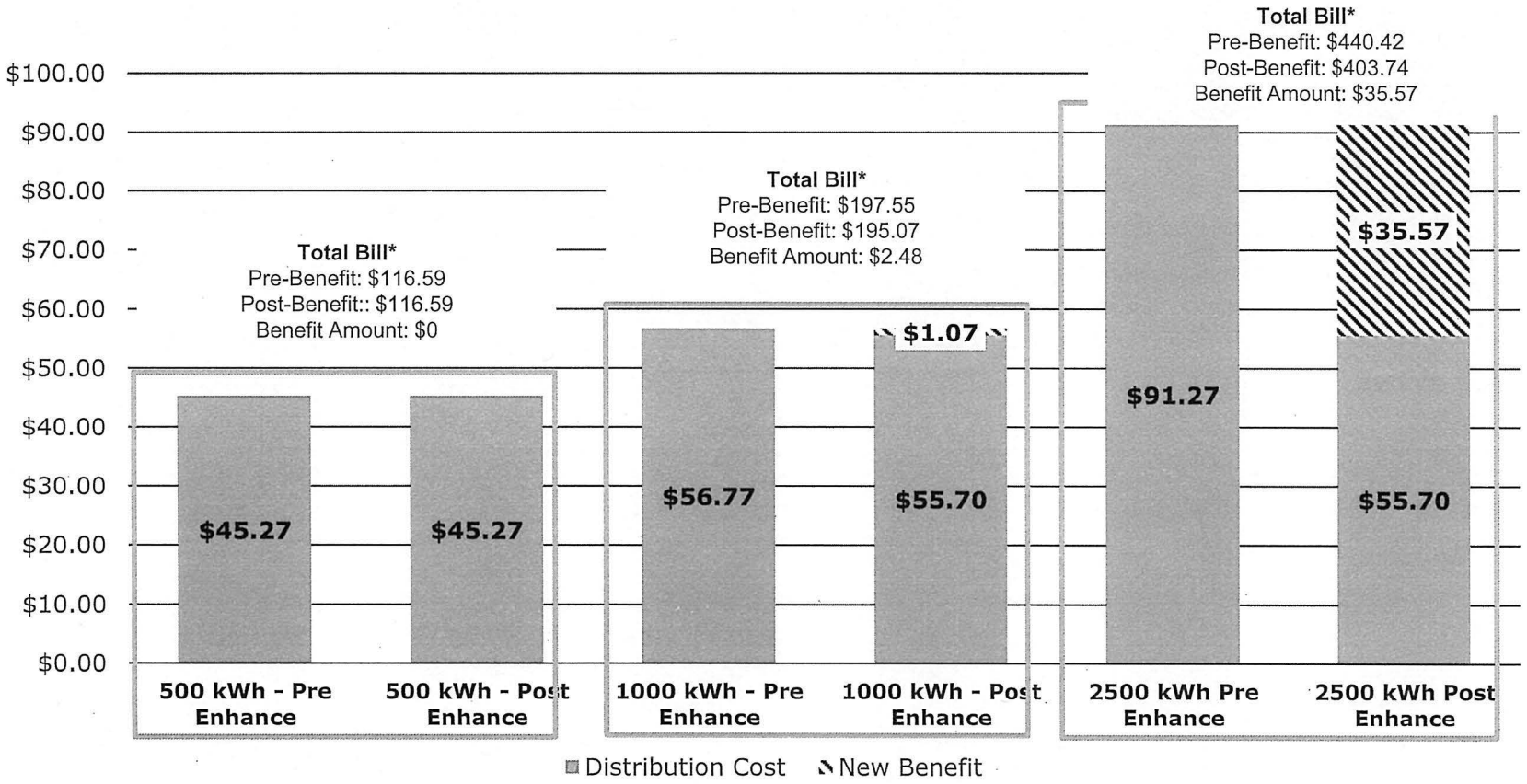
Accelerated Fixed Rate Benefit Fiscal Impact						
	2018	**2019**	**2020**	**2021**	**2022**	**2023**
Fixed Rate Enhancement*	$64M-$90M	$52-$72M	$38M-$54M	$26M-$36M	$13M-$18M	$0
Total RRRP** (inclusive fixed rate enhancement, excluding Algoma Power & Hydro One Remotes)	$306-$332M	$300-$320M	$293-$309M	$287-$297M	$281M-$286M	$275M

**Range depends on if just R1 & R2 or all rate classes. Cost decrease is estimated evenly, which could change based on Hydro One future rate impacts.*

*** Assumes 2.6% annual increase as estimate of average distribution rate increase*

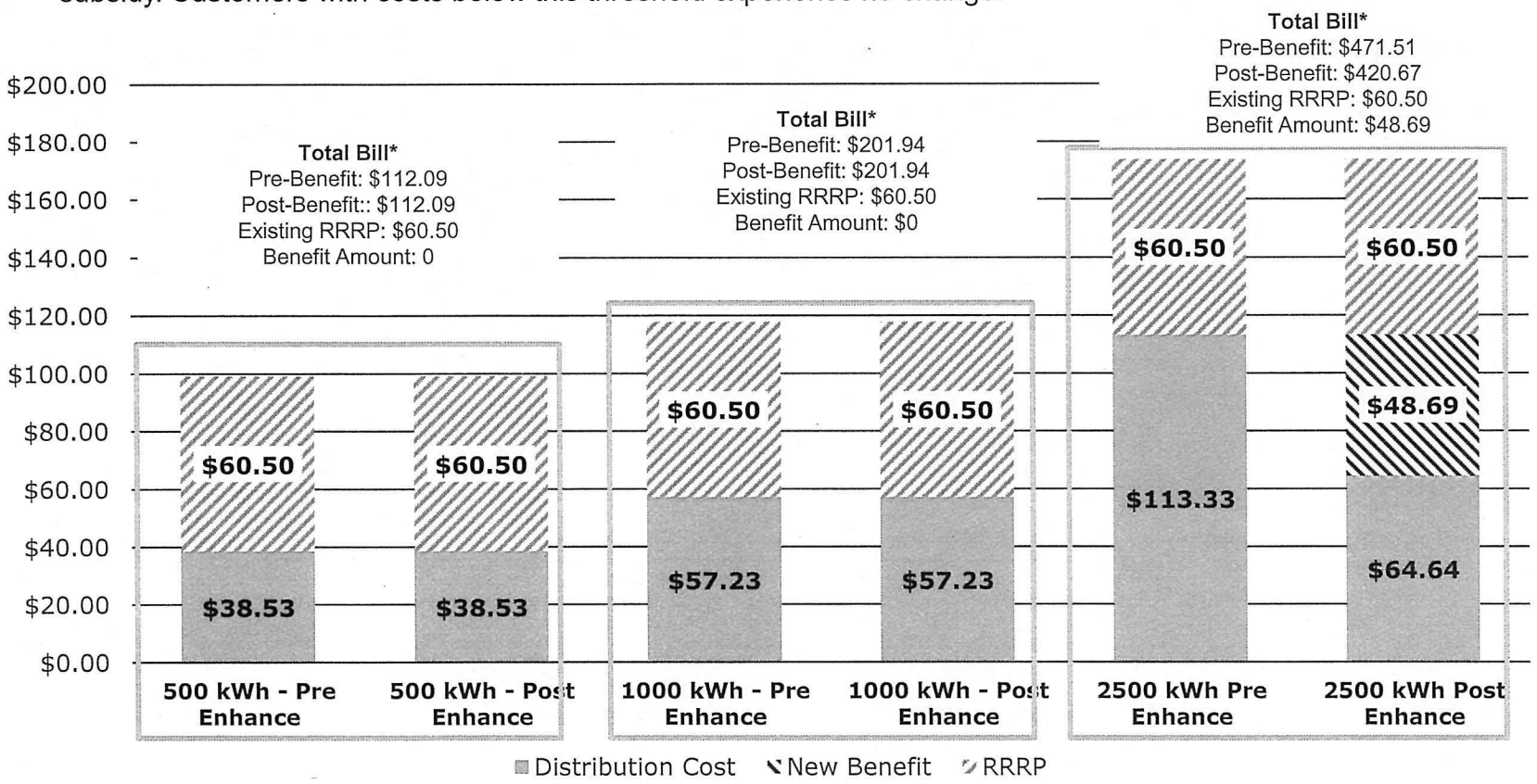
2a. RRRP Enhancement – Hydro One Mid-Density (R1) Ratepayer Impacts

- Under this option, R1 customers will not pay more than $55.70 for distribution service. Customers with costs below this threshold experience no change.



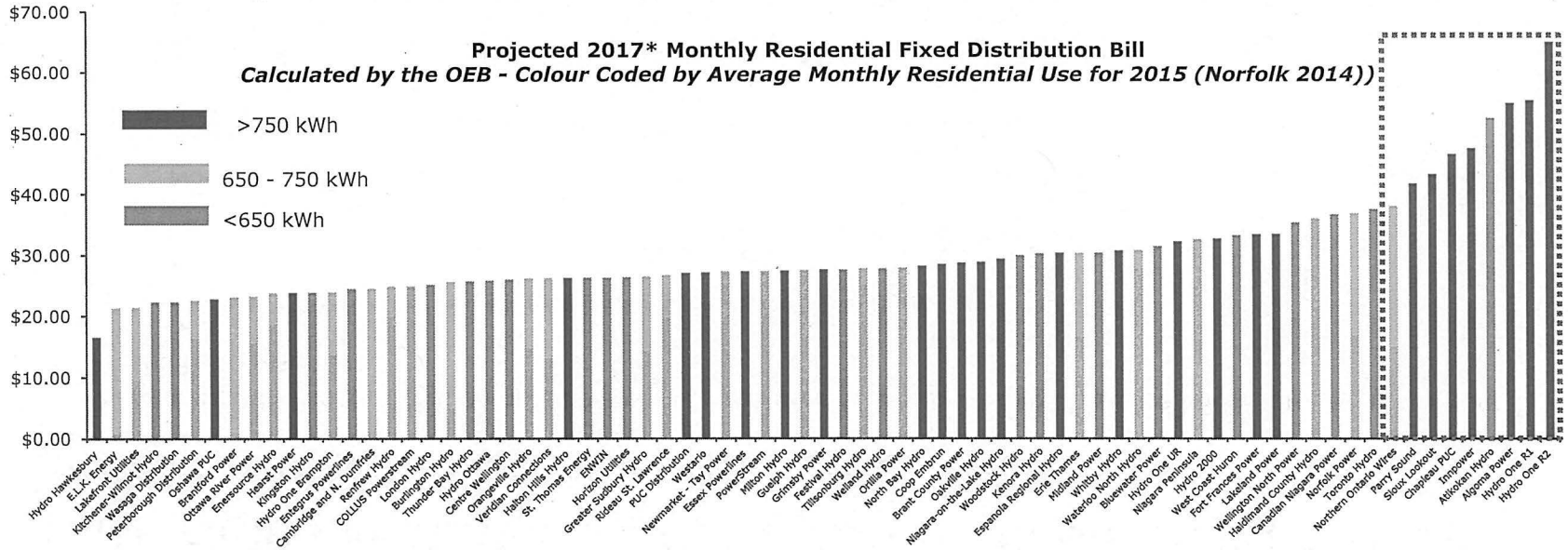
2a. RRRP Enhancement – Hydro One Low-Density (R2) Ratepayer Impacts

- Under this option, R2 customers will not pay more than $64.64, after accounting for the original $60.50 RRRP subsidy. Customers with costs below this threshold experience no change.



2a(i). High Distribution Cost LDCs – Accelerating Fixed Rate Benefit/Normalizing Fixed Rates

- While Hydro One R1 and R2 customers pay the highest distribution rates, the graph below highlights other relatively high-distribution cost LDCs (see slide in appendix for the full graph). These LDCs include Northern Ontario Wires, Parry Sound, Chapleau, Sioux Lookout, InnPower, Atitikion and Algoma.
- Estimates of what the fixed monthly rate would be in each of these LDCs if fixed rates were fully implemented in 2017 range from $38/month for Northern Ontario Wires to $65/month for a Hydro One R2 customer.
- Options for expanding a cost-mitigation program to these LDCs include:
  - Accelerating fixed rate benefits in each of these LDC as outlined for Hydro One R1 and R2 consumers in option 2a; or
  - Bringing distribution costs across all of these LDCs down to the lowest estimated monthly fixed distribution cost of $38.



*2017 Approved and Proposed (Decisions Pending)

2a(i). High Distribution Cost LDCs – Accelerating Fixed Rate Benefit Impacts/Normalizing Fixed Rates

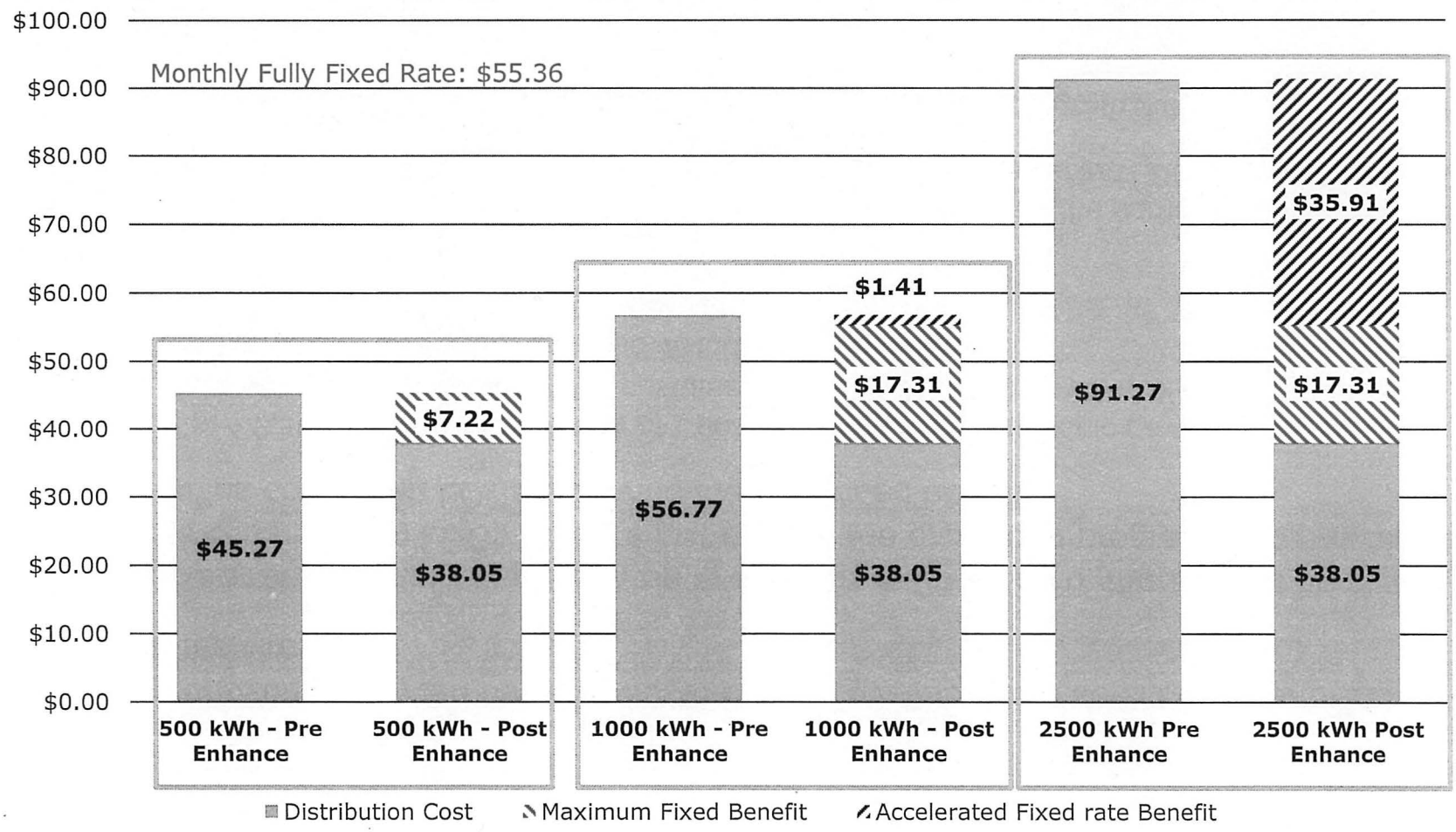
- These expanded cost-mitigation options are all incremental to 2a which expanded the RRRP program for Hydro One R1 and R2 consumers.
- Accelerating the fixed rate benefit for these additional LDCs would:
  - Provide between 1/3 to 1/2 of the 48,000 customers in the additional 7 LDCs with benefits.
  - Not provide any additional benefits to Hydro One R1 and R2 customers beyond option 2a.
- Bringing all these LDCs down to the $38/month distribution cost threshold would:
  - Provide almost all of the ~48,000 customers in the additional LDCs with benefits.
  - Provide additional benefits to Hydro One R1 and R2 customers beyond option 2a.
- The following slides provide examples of benefits to Hydro One R1 and R2, and InnPower customers (see appendix examples for the remaining LDCs).

Accelerated Fixed Rate Benefit Fiscal Impact (additive to Option 2a)						
	2018	**2019**	**2020**	**2021**	**2022**	**2023**
Total RRRP Enhancement (Option 2a)	$306-$332M	$300-$320M	$293-$309M	$287-$297M	$281M-$286M	$275M
Accelerating Fixed Rate Benefits for additional seven LDCs	~$10M					
Threshold of $38 Monthly Fixed Rate (includes H1)	~$140M					

2a(i). High Distribution Cost LDCs – Accelerating Fixed Rate Benefit Impacts/Normalizing Fixed Rates (Considerations)

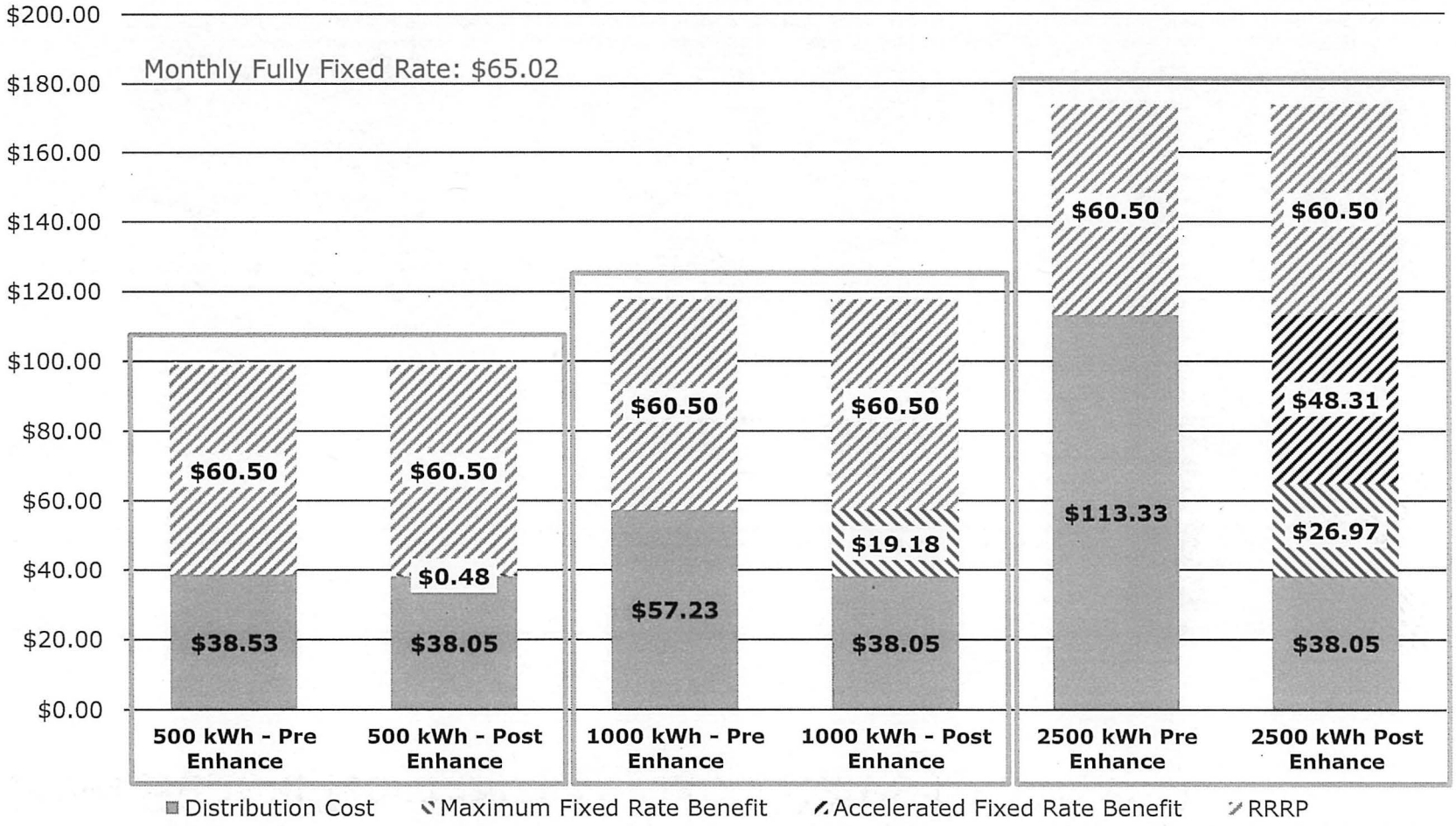
- The proposed expanded benefits would only be available to a select number of LDCs within the Province.
- Until fixed rates are fully implemented in all LDCs in 2019/2020, there could be high-volume customers in LDCs that are just outside the expanded program who pay higher distribution costs than LDCs receiving the expanded benefit
  - E.g. A 2,500kWh/month customer of Canadian Niagara Power would pay $57.45 in 2017 distribution costs, while a similar customer of InnPower would pay $47.50 with fixed benefit acceleration or $38 under the fixed distribution threshold.
- Implementation considerations include:
  - Carving out LDCs in regulation/legislative, either through writing the names of the LDCs within the regulation or another mechanism to ensure that only the selected LDCs receive the benefit.
  - Ensuring the distribution threshold is appropriately set at the program outset and can adjust to distribution rate changes year over year.
  - Current estimates are 2017 rates and the number of LDCs above $38/month will change year over year.

2a(i). High Distribution Cost LDCs – Accelerating Fixed Rate Benefit/Normalizing Fixed Rates (Hydro One R1)



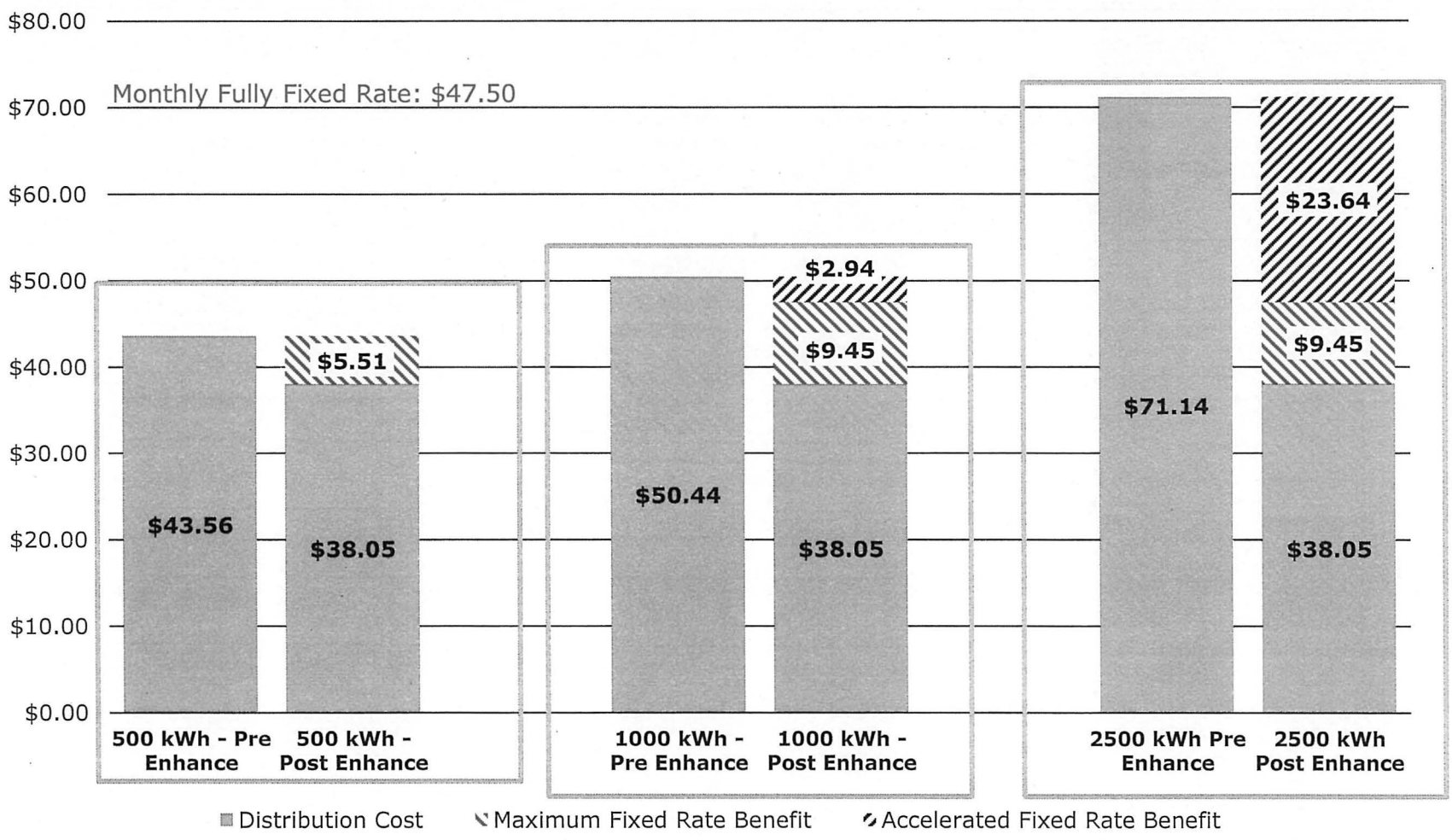
Note: *Rates are for 2017 (either approved or proposed)*

2a(i). High Distribution Cost LDCs – Accelerating Fixed Rate Benefit/Normalizing Fixed Rates (Hydro One R2)



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

2a(i). High Distribution Cost LDCs – Accelerating Fixed Rate Benefit/Normalizing Fixed Rates (Innpower)



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

2b. Ontario Electricity Support Program (OESP) Expansion

- The OESP is an income-tested, application based program that lowers the electricity costs of the most vulnerable consumers by providing a rebate directly on their electricity bills.
- The OESP provides basic benefits to most eligible consumers and enhanced benefits to Indigenous customers and customers with electric heat and certain medical devices.
- OESP funding is collected from a charge levied on all electricity ratepayers. Based on current level of program up-take and funding collection, OESP program benefits could be increased across the board by 50%. This would mean:
  - Single low income consumers would see an increase from $30 to $45/ month ($540/year);
  - Families of four with electric heat could see an increase from $55 to $82.50/month ($990/year); and
  - Indigenous, Métis, and Inuit consumers would also see benefit increases at the same level as those with electric heat and medical devices. These benefits could range from $67 to $113/month.
    - The Ministry is also considering options to support a "Delivery" line credit for Indigenous consumers. This would cost ~$18 million/year and would save Indigenous consumers between $75 and $100/month.
- Greater focus and support can be placed on lower income Ontarians by funding OESP through the tax base. This would also reduce costs for all consumers as a result of eliminating the OESP charge.
  - Average residential customer savings: $0.83/month; and
  - Average industrial customer savings: $1.10/MWh.

2b. OESP Expansion (cont'd)

- Potential changes to the OESP income thresholds was also considered, however, changes to the income thresholds at this point could potentially bring the OESP out of alignment with other existing social programs.
  - An OESP income threshold change could result in individuals and households that receive OESP, which is targeted to low-income individuals, not being eligible for other social assistance programs offered by the Province targeted to low income individuals/households.

- The credit and income threshold amounts for the OESP program were guided by other social assistance programs that are delivered within the Province, and the Province's Poverty Reduction Strategy, which has an underlying principle to measures poverty consistently in programs across government. One of the key measurement tools this Strategy uses is the Low Income Measure (LIM).
  - Feedback OEB received was that LIM is the method preferred by the Ministry of Finance and the preferred tool of low-income advocates.
  - OESP consequently adopted LIM as the income threshold to determine eligibility for OESP, and recommended its use for all energy assistance programs. It is also used for the OEB's Low Income Energy Assistance Program (LEAP).

- Rather than changing the OESP income thresholds at this point, several measures could be taken that include:
  - The "LDC Affordability Fund" may help a segment of the population that do not qualify directly as low income but are struggling to pay their utility bills.
  - The OEB could be asked to explore whether the OESP income thresholds need to be updated as part of a regular program review.

2b. OESP Expansion – Fiscal Impacts

- 2017 program costs assume the current program sign-up rate of 30% of eligible consumers increases to 45%. Cost projections assume the program grows to 100% of eligible consumers by 2022 and remains at that level.
- At the time of program design, it was estimated that 40-50% participation would be high for an application-based program delivered through electricity bills. However OESP can be enhanced by working to ensure the program uptake is as close as possible to 100%:
  - Streamlining the application process to make it easier and quicker to get through;
  - Putting in place a more aggressive communications strategy to make sure people are aware of the program;
  - Increasing funding for key partner agencies to work directly with individuals who are applying; and
  - Exploring automatic OESP qualification for those who receive provincial programs (e.g., ODSP).
- OEB is currently exploring options for simplifying the OESP process, including exploring options with MCSS on auto-enrollment options, discussing options to provide online alternative options to the wet signature consent forms with the federal government, and working with partners to do open houses to better reach vulnerable consumers.
- Table below shows estimate of program costs up to 2022:

Year	OESP Status Quo ($M)	+50% ($M)	TOTAL ($M)
2017	$108	$54	$162
2018	$150	$75	$225
2019	$186	$93	$279
2020	$215	$108	$323
2021	$243	$122	$365
2022	$272	$136	$408

2b. OESP Expansion – Considerations

Considerations

- **Framework:** Changes to legislation / regulation may be required to establish and define the ability to use tax funding for the OESP. The scope of changes would depend on the implementation / delivery mechanisms.
- **Implementation:** If the OEB continues to deliver program, 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).
- **Additional Enhancements:** The enhanced credit could be expanded to include additional eligibility categories of customers. For example, a new "Low Density Consumer" category could be introduced that provides Hydro One R2 and/or R1 customers (highest distribution rates) who are already OESP eligible with the enhanced credit.
- **Variance Account:** 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.
- **Treatment as Income:** 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.

2c. Establishing a New LDC Affordability Fund

- Electricity customers who meet the definition of low-income are eligible for energy efficiency incentives through the Home Assistance Program, delivered by LDCs under the Conservation First Framework.

- Some electricity customers who struggle to pay their utility bills do not meet the definition of a low-income household and therefore are not eligible for the Home Assistance Program.

- Establishing an "Affordability Fund" for LDCs could provide a means to help struggling customers who do not qualify for low income programs and cannot upgrade their homes without financial assistance.
  - Over time the Fund could help these customers get back on track with their bills and also save on disconnection costs.
  - The Fund would be targeted to customers on an as-needed basis (vs. marketed as an open-intake program).

- ENERGY is currently in discussions with the Electricity Distributors Association and several LDCs to determine the feasibility of establishing a Fund and to identify a willing funding partner(s).

- To allow for funds to flow in 2016/17, ENERGY would sign a Transfer Payment Agreement (TPA) with a qualified third party/ies to administer the Fund.
  - LDCs would apply for funding and redistribute support to those customers that meet the targeted eligibility criteria.

- Recipients could receive measures similar to those available in the Home Assistance Program (weatherization, energy efficient appliances and lighting controls).
  - 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.

2d. First Nations Rate – Context

- In June 2016, pursuant to s.35 of the OEB Act, the Minister 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.*"
  - In order to inform its report, the OEB engaged with First Nations, including remote communities, the distributors serving them, and consumer groups such as the Low Income Energy Network, in a series of meetings across the province. It also established an Advisory Committee with the Chiefs of Ontario's Grievance Committee.
  - 48 First Nations attended meetings held in the Fall of 2016 in London, Couchiching First Nation, Sudbury, Toronto and Thunder Bay. The OEB also held sessions with Local Distribution Companies (LDCs) and consumer groups.
- The OEB provided its report to the minister on December 29, 2016.
- The OEB report 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.
  - 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.

3. 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.

Opportunities

- ENERGY could help promote or accelerate these efforts by asking the OEB to look at opportunities to further drive LDC efficiencies and productivity.
- 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.

3. OEB – LDC Efficiencies and Rates (Performance Incentives) (cont'd)

Considerations

Sector:

- Exact bill reduction levels are unknown, but real OM&A and some capital cost avoidance can reasonably be expected.
- Could indirectly incent consolidation if LDCs feel they are unable to adequately manage their assets in light of tightening requirements.
- Any initiatives that have a direct impact on LDC profitability could affect the value of Hydro One.
- There is a tension between requiring productivity enhancements and creating firm performance standards. LDCs have to invest to maintain system levels, but also finding cost efficiencies, which is an incentive for innovation. The Ministry and the OEB may have to also explore reducing regulatory burden/barriers on LDCs so they have the tools available to satisfy new performance expectations.

Regulatory:

- The OEB is the electricity distribution sector's independent regulator and as such is responsible for establishing rate-setting mechanisms in line with its statutory objectives.
  - The Ministry would engage with OEB to align on approach, and provide only high-level direction so as to respect OEB's role in determining implementation specifics.
  - The OEB would likely need to conduct policy hearings and stakeholder consultations on these initiatives, though Ministry could request new rules be in place for next major LDC rate cycle.
- LDCs are resistant to peer comparison for a variety of historical and service territory issues. OEB econometric analysis has generally supported limiting peer comparisons. As comparisons would be an important component of benchmarking performance standards, the Ministry may experience sector pushback.
- Updating rate-setting mechanisms and regulatory processes could create regulatory uncertainty and limit LDC activity The OEB has revised its processes multiple times over the past 15 years.

4. OPG – Operational Efficiencies

- Provide expectation that OPG meet more aggressive cost targets, improving efficiency by ~$3/Megawatt hour (MWh).

Considerations

- OPG recently submitted its 2017-19 business plan to the Province for concurrence. That plan includes the following:
  - Enterprise total generating cost increasing from $48/MWh in 2016 to an average of $55/MWh over the plan period.
  - An average residential monthly bill increases of $1.05/month annually from 2017-2021.
- Much of this increase is due to the Darlington refurbishment project, which increases costs and reduces OPG's generation over the planning period.
- OPG has also shared its stretch targets for total cost of generation, which average $52/MWh over the 2017-19 plan, a ~$3/MWh reduction (5-6%) relative to its $55/MWh business plan targets.
- The Province could provide instructions to OPG to focus on its stretch target as part of the Minister's Concurrence letter. This is a public document that OEB would likely review and incorporate as part of OPG's current rate application.
- Consistent with regulations under the *Ontario Energy Board Act*, OPG is seeking smoothed rates for nuclear as part of its 2017-2021 rate application.
  - As a result, the benefit to ratepayers of reducing generation costs is uncertain.
  - Given that the application extends beyond the business plan period, and to ensure OPG does not delay costs beyond the planning horizon, the Province may want to provide additional direction for out year expenditures.
- If OPG is unable to meet more aggressive cost targets, this could impact net income, and the Province's fiscal plan.
  - The total cost of $3/MWh based on OPG's forecast production of 74 TWh/yr is about $240 million per year.
- The Province could work with OPG to craft language in the concurrence letter in order to avoid setting unintended precedents for future rate application processes.

5. IESO – Market Renewal

- Continue to move forward with Independent Electricity System Operator's (IESO) Market Renewal initiatives:
  - 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.
  - Moving to "technology-agnostic" procurements will provide new opportunities for innovation and modernization and ensure ratepayers receive the best prices possible.

Considerations

- 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.

- The IESO's Market Renewal is a broad initiative that will impact all aspects of Ontario's electricity market. Ontario has had a uniform price since market opening.

- Adopting a technology-agnostic stance will lower the overall cost of providing electricity service by selecting the most cost-effective resources to fulfill various system needs.

- The IESO estimates that the total implementation cost – including a 15% contingency and net of avoided costs – will be $150 million. The bulk of the costs (capital) would only be recovered once the project has been implemented and as the benefits are being realized.

Creating New Legislative Authority

GA Smoothing (Option 1)

- **Amendments to Electricity Act, 1998 (EA) and *Ontario Energy Board Act, 1998* (OEBA)**
  - The mandate and governance of the borrowing entity, whether OPG, IESO or a new entity, will be addressed through amendments to the EA. Governance provisions will be designed to address the accounting control indicators.
  - The borrowing entity 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 entity and settle accounts with the new entity as a service provider.
  - Regulatory amendments to GA Regulations would require IESO to:
    - Separately settle and track amounts received from the borrowing entity to lower GA (including maintaining variance accounts).
    - Separately settle and track amounts paid back to the entity (including maintaining variance accounts).
    - Distributors collect from consumers and settle with IESO. Generators could receive amounts from 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.

Electricity Support Programs (Option 2)

- **RRRP, OESP and First Nations Rate (2 a, b and d):** 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.

Ontario Energy Board (Option 3), OPG Efficiencies (Option 4) and IESO market modernization (Option 5)

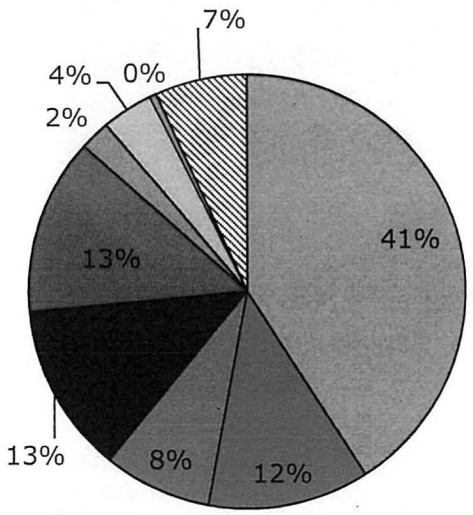
- No specific legislative or regulatory amendments identified. IESO may need to amend market rules. Agency MOUs/MOAs may require amendment.

Appendix

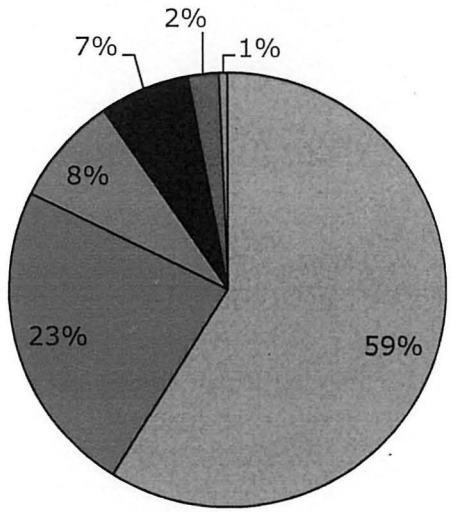
GA Smoothing – Cost Breakout

- The allocation of GA costs in 2016 is compared to the proportion of generation in the graph below.
- This cost breakdown will evolve over time as 2,181 MW of contracted generation comes online in the coming years.

2016 GA Cost: $12.3 billion



2016 Generation: 155 TWh



	GA ($M)	Gen. (TWh)
Nuclear	5,053	91
Hydro	1,473	36
Natural Gas	985	13
Wind	1,552	10
Solar	1,630	3
Biomass, Landfill and Byproduct	278	1
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.

GA Smoothing for All – Residential Bills Lowered 20% (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.

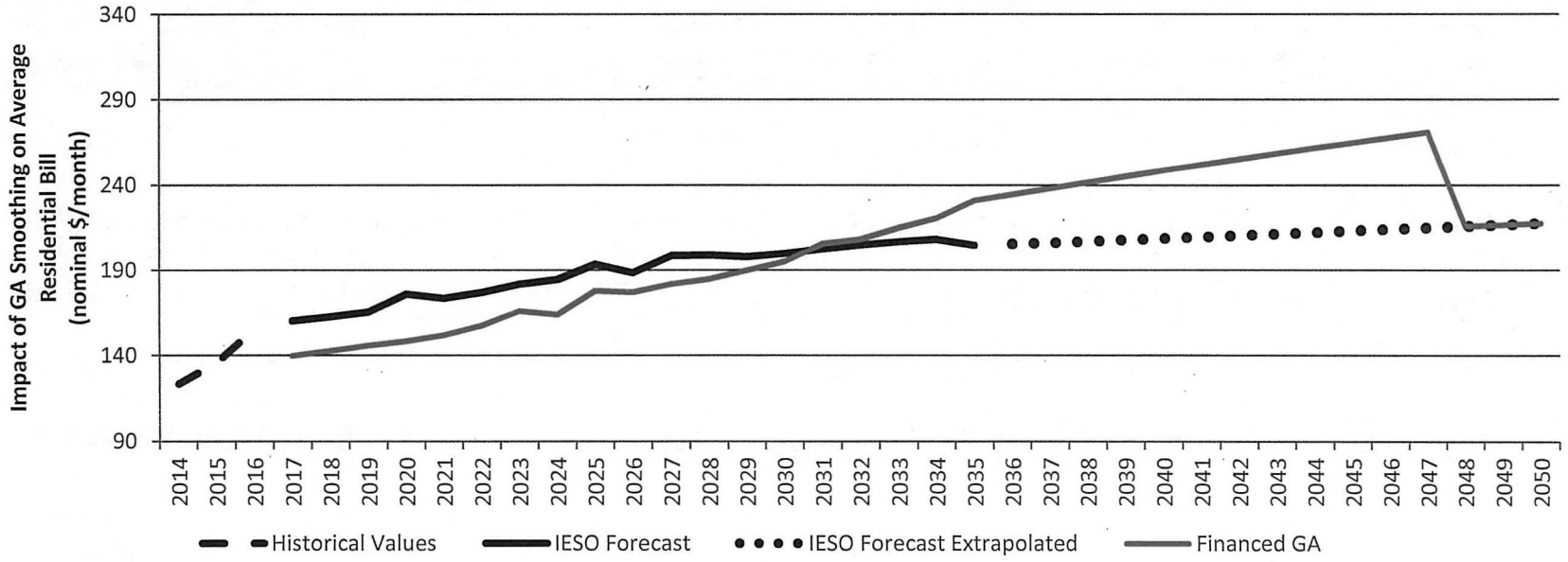
Residential (750 kWh/month)	Actual 2016	2017	2018	2019	2020	2021
Total Bill (includes HST)	**163**	**172**	**175**	**178**	**189**	**187**
Total Bill (excludes HST)	145	153	155	158	168	165
Impact of GA Financing		-18	-18	-17	-24	-19
Impact of OPG Efficiencies		-1	-1	-1	-1	-1
Impact of Tax-Basing Social 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**	**137**	**132**	**134**	**135**	**138**
Year-over-Year Change		-14%	-4%	2%	1%	2%
Change from Forecast		-17%	-18%	-17%	-22%	-18%

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**	**72**	**74**	**69**	**70**	**76**
Year-over-Year Change		-20%	3%	-7%	2%	7%
Change from Forecast		-21%	-20%	-21%	-26%	-21%

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.

GA Smoothing for All (Borrow $3.2 billion in 2017)



	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 *($/month)*	-18.1	-17.7	-17.3	-24.4	-19.2	-17.1	-14.0	-18.1	-13.8	-10.1	-14.8	-12.5	-6.9	-4.3	2.8	2.9	7.2	10.9	23.2	25.7	28.1	30.5	32.8	35.1	37.3	39.4	41.5	43.6	45.6	47.6	49.5	0.0
Total Accumulated Debt *($ billion)*	3.2	6.5	9.9	14.7	18.9	22.8	26.5	31.0	35.1	38.6	43.2	47.6	51.3	54.7	57.0	59.4	61.1	62.3	61.2	59.6	57.4	54.7	51.3	47.4	42.8	37.5	31.5	24.8	17.4	9.1	0.0	0.0
Total Change in Accumulated Debt *($ billion)*	3.2	3.3	3.4	4.8	4.1	4.0	3.6	4.6	4.0	3.6	4.6	4.4	3.7	3.4	2.3	2.4	1.7	1.2	-1.1	-1.6	-2.2	-2.7	-3.3	-4.0	-4.6	-5.3	-6.0	-6.7	-7.5	-8.3	-9.1	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 plus 0.1 percentage point with no limit 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.

GA Smoothing for RPP / Class B Only – Residential Bills Lowered 20% (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.

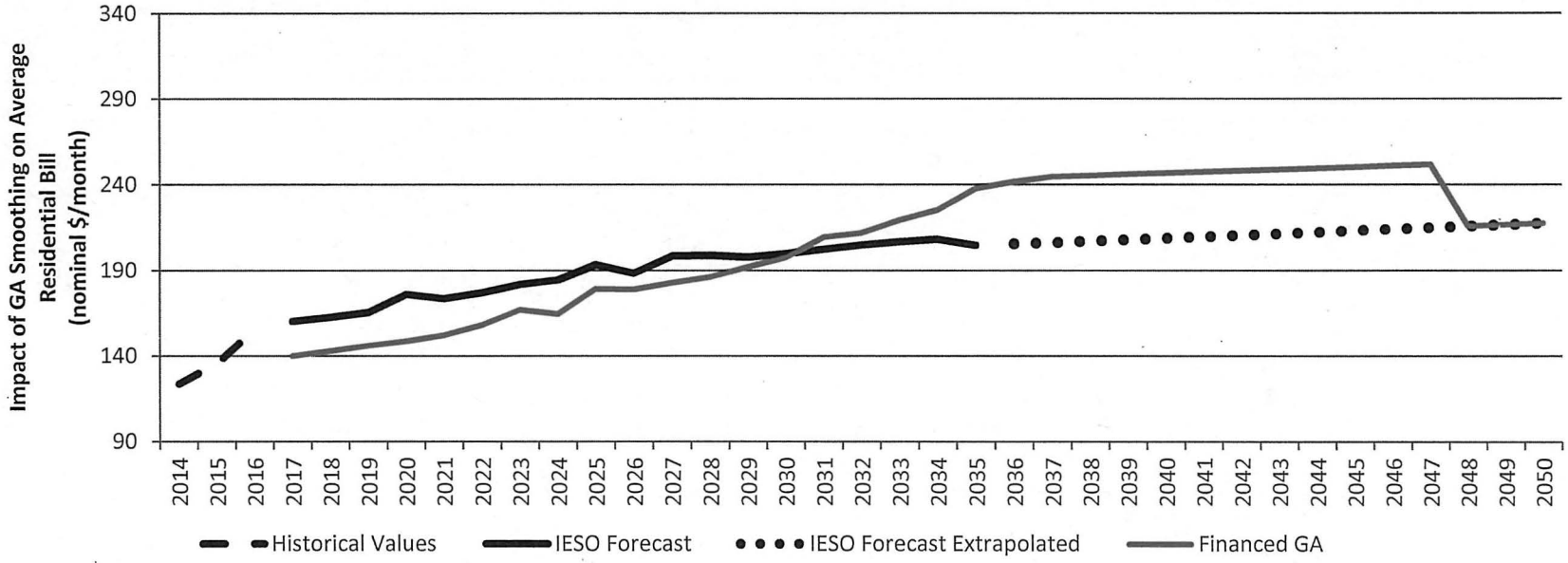
Residential (750 kWh/month)	Actual 2016	2017	2018	2019	2020	2021
Total Bill (includes HST)	**163**	**172**	**175**	**178**	**189**	**187**
Total Bill (excludes HST)	145	153	155	158	168	165
Impact of GA Financing		-18	-18	-17	-24	-19
Impact of OPG Efficiencies		-1	-1	-1	-1	-1
Impact of Tax-Basing Social 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**	**137**	**132**	**134**	**135**	**138**
Year-over-Year Change		-14%	-4%	2%	1%	2%
Change from Forecast		-17%	-18%	-17%	-22%	-18%

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**	**87**	**89**	**84**	**91**	**91**
Year-over-Year Change		-3%	2%	-6%	9%	1%
Change from Forecast		-4%	-4%	-5%	-5%	-5%

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.

GA Smoothing for RPP / Class B Only (Borrow $2.8 billion in 2017)



	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 *($/month)*	-18.1	-17.7	-17.3	-24.4	-19.2	-16.8	-13.3	-17.9	-13.0	-8.8	-14.1	-11.5	-5.1	-2.1	5.9	6.1	10.9	15.1	29.1	32.0	33.8	33.7	33.5	33.4	33.2	33.1	33.0	32.8	32.7	32.6	32.4	0.0
Total Accumulated Debt *($ billion)*	2.8	5.7	8.7	12.9	16.6	20.1	23.1	27.1	30.5	33.4	37.3	41.0	43.9	46.5	47.9	49.4	50.2	50.4	48.3	45.5	42.3	39.0	35.5	31.8	27.9	23.8	19.5	15.0	10.2	5.2	0.0	0.0
Total Change in Accumulated Debt *($ billion)*	2.8	2.9	3.0	4.2	3.6	3.5	3.1	4.0	3.4	2.9	3.9	3.7	2.9	2.6	1.4	1.5	0.8	0.2	-2.1	-2.7	-3.2	-3.3	-3.5	-3.7	-3.9	-4.1	-4.3	-4.5	-4.7	-5.0	-5.2	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 $5.5 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.

GA Smoothing for RPP / Class B 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.

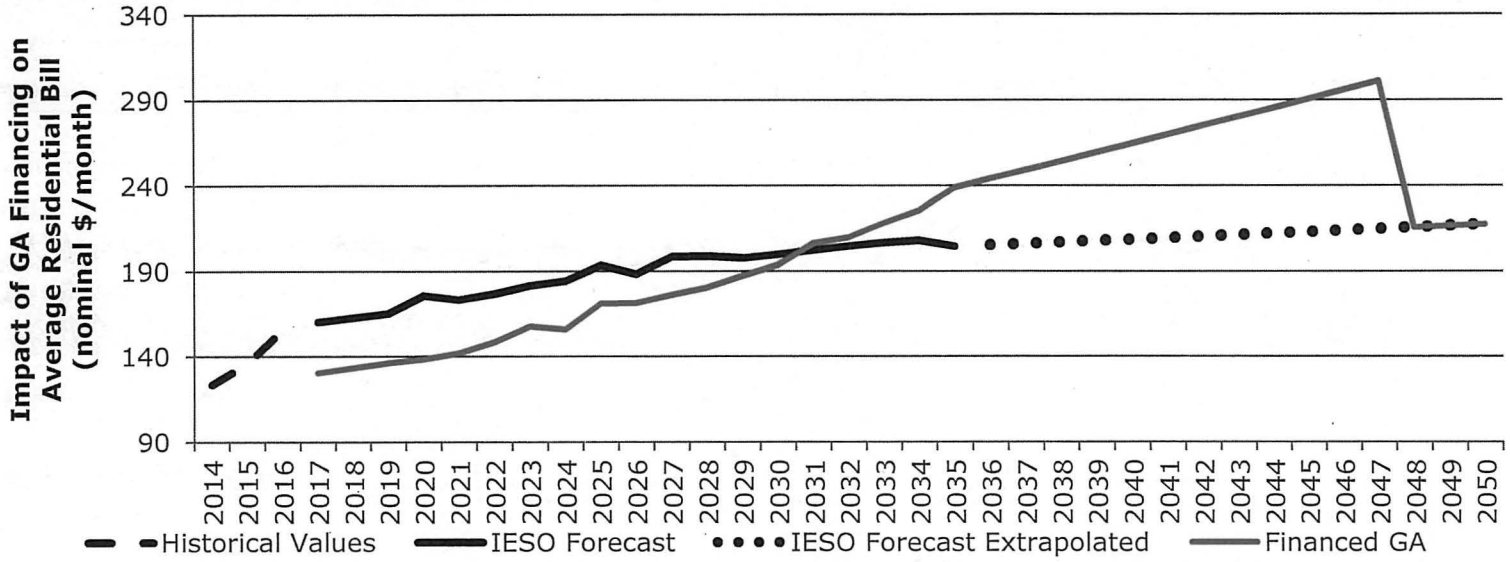
Residential (750 kWh/month)	Actual 2016	2017	2018	2019	2020	2021
Total Bill (includes HST)	**163**	**172**	**175**	**178**	**189**	**187**
Total Bill (excludes HST)	145	153	155	158	168	165
Impact of GA Financing		-26	-26	-26	-33	-28
Impact of OPG Efficiencies		-1	-1	-1	-1	-1
Impact of Tax-Basing Social 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**	**126**	**121**	**123**	**124**	**127**
Year-over-Year Change		-21%	-4%	2%	1%	2%
Change from Forecast		-24%	-24%	-24%	-28%	-25%

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**	**87**	**89**	**84**	**91**	**91**
Year-over-Year Change		-3%	2%	-6%	9%	1%
Change from Forecast		-4%	-4%	-5%	-5%	-5%

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.

GA Smoothing for RPP / Class B Only (Borrow $4.1 billion in 2017)



	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 *($/month)*	-26.3	-26.1	-25.8	-33.1	-28.1	-25.3	-21.2	-25.3	-19.8	-15.0	-19.6	-16.4	-9.2	-5.4	3.5	4.5	10.2	15.4	30.3	34.2	38.1	41.9	45.7	49.5	53.2	57.0	60.8	64.6	68.4	72.3	76.2	0.0
Total Accumulated Debt *($ billion)*	4.1	8.4	12.8	18.6	23.9	29.1	33.9	39.5	44.6	49.2	54.8	60.1	64.6	68.8	71.8	74.7	77.0	78.4	77.5	75.9	73.6	70.5	66.6	61.9	56.2	49.6	41.9	33.2	23.4	12.3	0.0	0.0
Total Change in Accumulated Debt *($ billion)*	4.1	4.3	4.4	5.8	5.3	5.1	4.8	5.7	5.1	4.6	5.6	5.3	4.5	4.2	3.0	3.0	2.2	1.5	-0.9	-1.6	-2.3	-3.1	-3.9	-4.8	-5.7	-6.6	-7.6	-8.7	-9.8	-11.0	-12.3	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 plus 1.5 percentage points with no limit 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.

GA Smoothing for All – Residential Bills Lowered 28% (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.

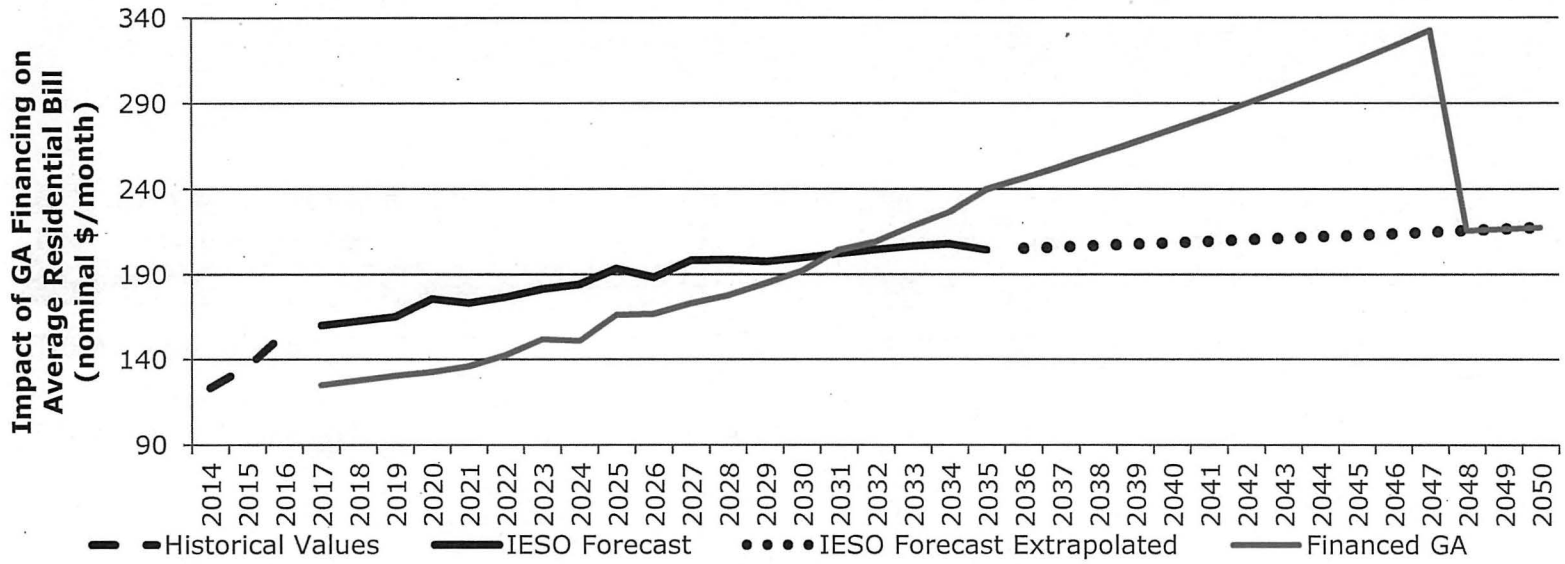
Residential (750 kWh/month)	Actual 2016	2017	2018	2019	2020	2021
Total Bill (includes HST)	**163**	**172**	**175**	**178**	**189**	**187**
Total Bill (excludes HST)	160	153	155	158	168	165
Impact of GA Financing		-31	-31	-31	-38	-33
Impact of OPG Efficiencies		-1	-1	-1	-1	-1
Impact of Tax-Basing Social Programs		-2	-2	-2	-3	-3
Subtotal		118	121	123	125	128
8% rebate		-9	-10	-10	-10	-10
HST		15	16	16	16	17
Revised Bill (includes HST)	**163**	**124**	**127**	**129**	**132**	**134**
Year-over-Year Change		-24%	2%	2%	2%	2%
Change from Forecast		**-28%**	**-28%**	**-27%**	**-30%**	**-28%**

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**	**119**	**114**	**116**	**117**	**119**
Year-over-Year Change		-25%	-4%	2%	1%	2%
Change from Forecast		-28%	-29%	-28%	-32%	-29%

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**	**61**	**63**	**58**	**59**	**64**
Year-over-Year Change		-32%	3%	-8%	2%	8%
Change from Forecast		-33%	-32%	-34%	-38%	-34%

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.

GA Smoothing for All (Borrow $5.5 billion in 2017)



	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 *($/month)*	-31.2	-31.1	-31.0	-38.3	-33.4	-30.5	-26.5	-29.5	-24.1	-19.2	-22.5	-18.8	-11.6	-7.1	1.8	3.9	10.4	16.4	31.1	36.3	41.5	46.9	52.4	58.1	64.0	70.1	76.4	82.9	89.7	96.8	104.2	0.0
Total Accumulated Debt *($ billion)*	5.5	11.4	17.4	25.0	32.2	39.3	45.9	53.5	60.5	67.0	74.3	81.5	87.7	93.4	97.9	102.2	105.6	108.0	107.8	106.6	104.4	101.0	96.3	90.4	82.9	73.9	63.2	50.6	35.9	19.2	0.0	0.0
Total Change in Accumulated Debt *($ billion)*	5.5	5.8	6.0	7.7	7.2	7.0	6.7	7.6	7.0	6.5	7.4	7.1	6.2	5.8	4.5	4.3	3.4	2.4	-0.2	-1.2	-2.2	-3.4	-4.6	-6.0	-7.4	-9.0	-10.7	-12.6	-14.6	-16.8	-19.2	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 plus 4.1 percentage points with no limit 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.

GA Smoothing for RPP Only – Residential Bills Lowered 28% (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.

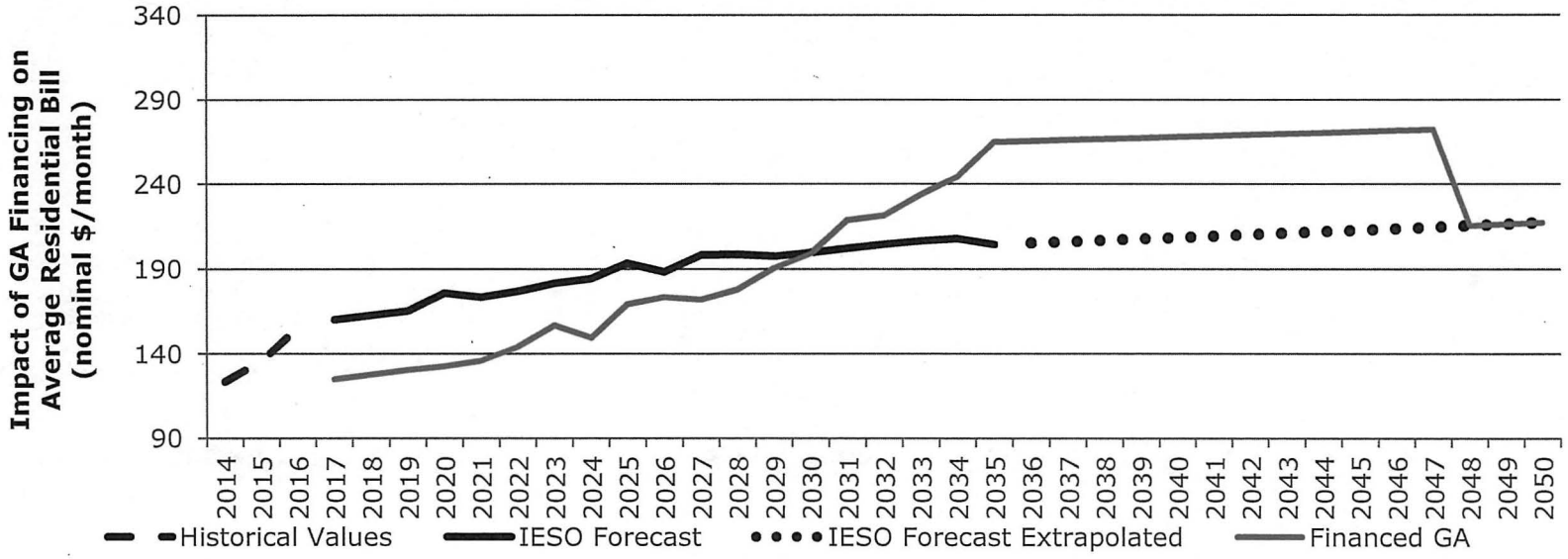
Residential (750 kWh/month)	Actual 2016	2017	2018	2019	2020	2021
Total Bill (includes HST)	**163**	**172**	**175**	**178**	**189**	**187**
Total Bill (excludes HST)	160	153	155	158	168	165
Impact of GA Financing		-31	-31	-31	-38	-33
Impact of OPG Efficiencies		-1	-1	-1	-1	-1
Impact of Tax-Basing Social Programs		-2	-2	-2	-3	-3
Subtotal		118	121	123	125	128
8% rebate		-9	-10	-10	-10	-10
HST		15	16	16	16	17
Revised Bill (includes HST)	**163**	**124**	**127**	**129**	**132**	**134**
Year-over-Year Change		-24%	2%	2%	2%	2%
Change from Forecast		**-28%**	**-28%**	**-27%**	**-30%**	**-28%**

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**	**161**	**156**	**157**	**168**	**164**
Year-over-Year Change		1%	-3%	1%	7%	-2%
Change from Forecast		-3%	-3%	-3%	-3%	-3%

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**	**87**	**89**	**84**	**91**	**91**
Year-over-Year Change		-3%	2%	-6%	9%	1%
Change from Forecast		-4%	-4%	-5%	-5%	-5%

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.

GA Smoothing for RPP Only (Borrow $2.6 billion in 2017)



	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 *($/month)*	-31.2	-31.1	-31.0	-38.3	-33.4	-28.9	-22.2	-30.9	-21.5	-13.4	-23.4	-18.5	-6.4	-0.6	14.6	14.9	24.1	32.1	53.4	53.2	53.0	52.7	52.5	52.3	52.1	51.9	51.7	51.4	51.2	51.0	50.8	0.0
Total Accumulated Debt *($ billion)*	2.6	5.3	8.1	11.7	15.0	18.2	20.9	24.5	27.6	30.1	33.5	36.8	39.2	41.2	42.1	43.0	43.2	42.7	40.3	37.8	35.2	32.4	29.5	26.4	23.2	19.8	16.2	12.4	8.5	4.4	0.0	0.0
Total Change in Accumulated Debt *($ billion)*	2.6	2.7	2.8	3.6	3.3	3.1	2.8	3.6	3.0	2.5	3.5	3.2	2.4	2.1	0.9	0.9	0.2	-0.5	-2.4	-2.5	-2.6	-2.8	-2.9	-3.1	-3.2	-3.4	-3.6	-3.8	-3.9	-4.1	-4.4	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 $4.6 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.

GA Smoothing for RPP/Class B Only – Residential Bills Lowered 28% (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.

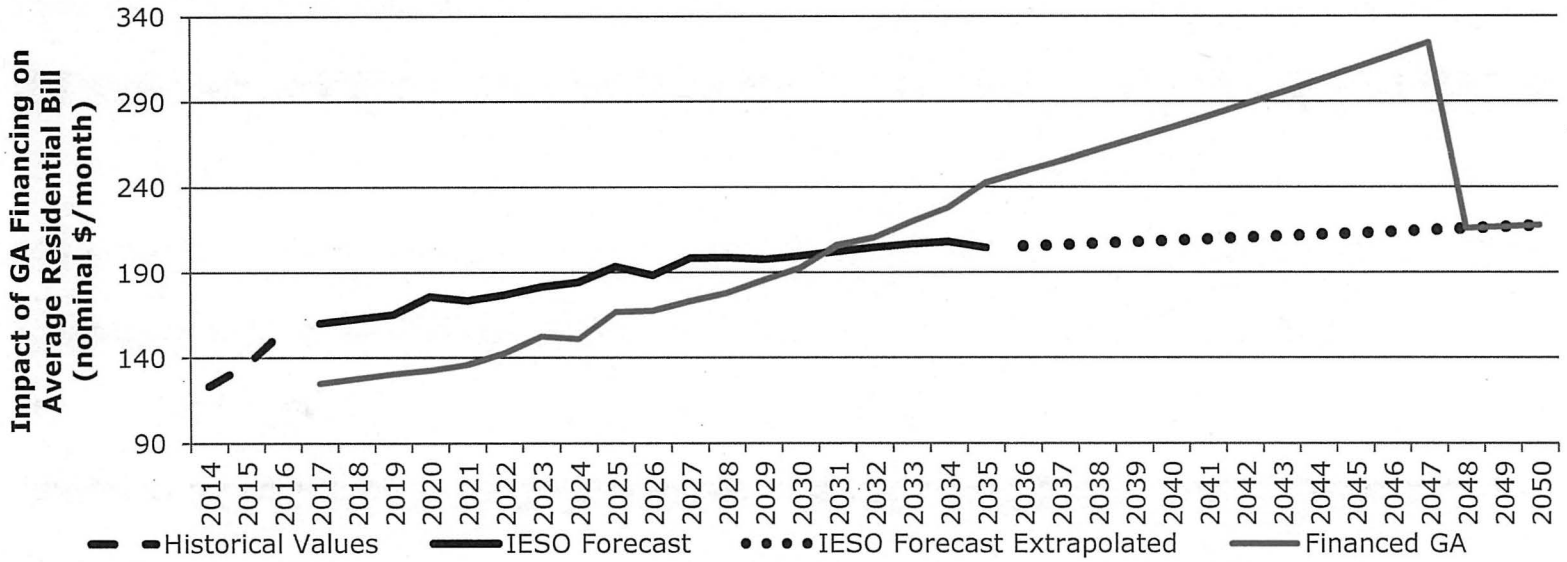
Residential (750 kWh/month)	Actual 2016	2017	2018	2019	2020	2021
Total Bill (includes HST)	**163**	**172**	**175**	**178**	**189**	**187**
Total Bill (excludes HST)	160	153	155	158	168	165
Impact of GA Financing		-31	-31	-31	-38	-33
Impact of OPG Efficiencies		-1	-1	-1	-1	-1
Impact of Tax-Basing Social Programs		-2	-2	-2	-3	-3
Subtotal		118	121	123	125	128
8% rebate		-9	-10	-10	-10	-10
HST		15	16	16	16	17
Revised Bill (includes HST)	**163**	**124**	**127**	**129**	**132**	**134**
Year-over-Year Change		-24%	2%	2%	2%	2%
Change from Forecast		**-28%**	**-28%**	**-27%**	**-30%**	**-28%**

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**	**119**	**114**	**116**	**117**	**119**
Year-over-Year Change		-25%	-4%	2%	1%	2%
Change from Forecast		-28%	-29%	-28%	-32%	-29%

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**	**87**	**89**	**84**	**91**	**91**
Year-over-Year Change		-3%	2%	-6%	9%	1%
Change from Forecast		-4%	-4%	-5%	-5%	-5%

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.

GA Smoothing for RPP/Class B Only (Borrow $4.9 billion in 2017)



	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 *($/month)*	-31.2	-31.1	-31.0	-38.3	-33.4	-30.3	-25.9	-29.6	-23.7	-18.5	-22.6	-18.8	-11.1	-6.5	3.0	4.8	11.4	17.4	33.3	38.2	43.1	48.0	53.1	58.2	63.4	68.7	74.1	79.6	85.2	91.0	96.9	0.0
Total Accumulated Debt *($ billion)*	4.9	10.0	15.3	22.0	28.4	34.5	40.3	47.0	53.0	58.6	65.1	71.4	76.7	81.7	85.4	89.0	91.8	93.7	93.1	91.6	89.3	86.0	81.7	76.2	69.6	61.7	52.5	41.8	29.6	15.7	0.0	0.0
Total Change in Accumulated Debt *($ billion)*	4.9	5.1	5.3	6.7	6.3	6.2	5.8	6.7	6.1	5.6	6.5	6.2	5.4	4.9	3.7	3.6	2.8	1.9	-0.6	-1.4	-2.3	-3.3	-4.3	-5.4	-6.6	-7.9	-9.2	-10.7	-12.2	-13.9	-15.7	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 plus 2.8 percentage points with no limit 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.

GA Smoothing for All – Residential Bills Lowered 25% (with Tax-Base Funded 15% Rebate, 2% increase)

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

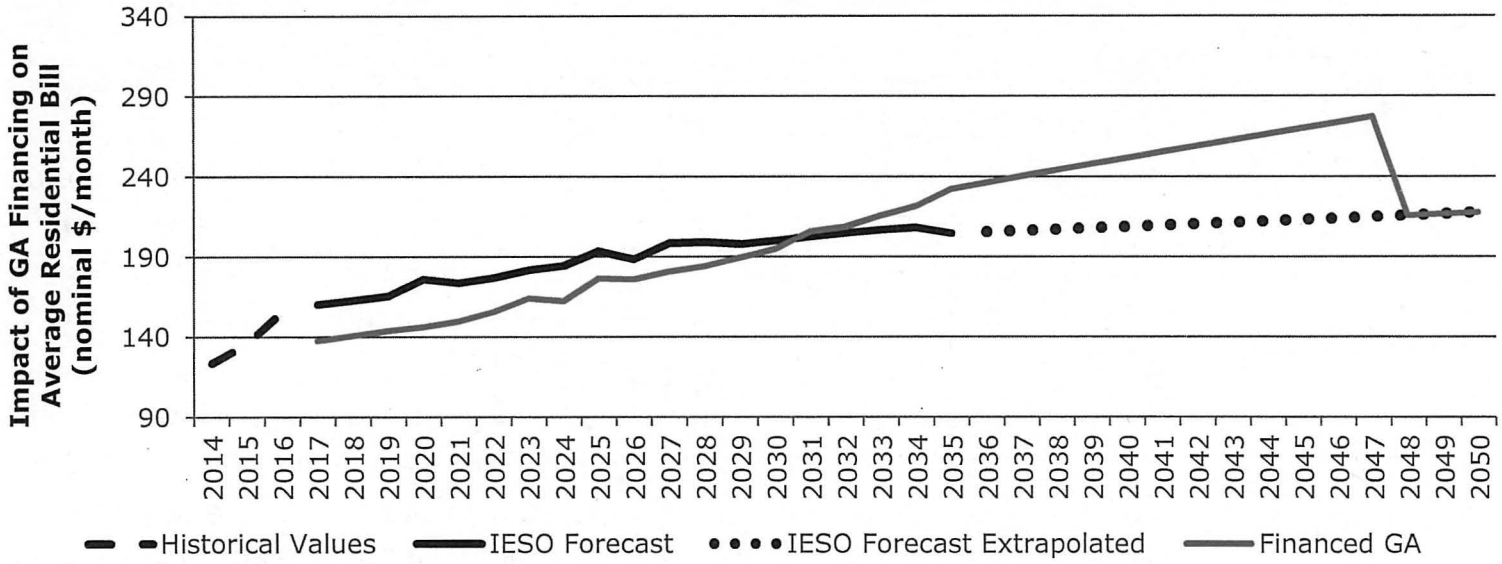
Residential (750 kWh/month)	Actual 2016	2017	2018	2019	2020	2021
Total Bill (includes HST)	**163**	**172**	**175**	**178**	**189**	**187**
Total Bill (excludes HST)	145	153	155	158	168	165
Impact of GA Financing		-20	-20	-19	-26	-21
Impact of OPG Efficiencies		-1	-1	-1	-1	-1
Subtotal		132	135	137	140	143
15% rebate		-20	-20	-21	-21	-21
HST		17	17	18	18	19
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**	**138**	**133**	**135**	**136**	**139**
Year-over-Year Change		-14%	-4%	2%	1%	2%
Change from Forecast		-17%	-17%	-17%	-21%	-18%

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**	**74**	**76**	**71**	**72**	**77**
Year-over-Year Change		-18%	3%	-7%	2%	7%
Change from Forecast		-19%	-18%	-19%	-24%	-19%

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. The 15% rebate above represents incremental funding requirements compared to status quo.

GA Smoothing for All (Borrow $3.5 billion in 2017)



	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 *($/month)*	-19.9	-19.5	-19.2	-26.3	-21.1	-18.9	-15.6	-19.5	-15.0	-11.1	-15.6	-13.1	-7.3	-4.3	3.0	3.4	7.9	11.9	24.5	27.3	30.1	32.8	35.4	38.0	40.6	43.1	45.6	48.1	50.5	52.9	55.3	0.0
Total Accumulated Debt *($ billion)*	3.5	7.2	10.9	16.1	20.7	25.1	29.1	34.1	38.5	42.4	47.3	52.0	56.0	59.6	62.1	64.7	66.6	67.8	66.8	65.2	62.9	60.1	56.5	52.3	47.3	41.5	35.0	27.6	19.4	10.2	0.0	0.0
Total Change in Accumulated Debt *($ billion)*	3.5	3.7	3.7	5.2	4.6	4.4	4.0	4.9	4.4	3.9	4.9	4.7	3.9	3.6	2.5	2.6	1.9	1.2	-1.0	-1.6	-2.2	-2.9	-3.5	-4.2	-5.0	-5.7	-6.5	-7.4	-8.3	-9.2	-10.2	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 plus 0.6 percentage points with no limit 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.

GA Smoothing – Considerations (*Accounting Treatment: Does Province Control Entity?)*

Defining the Government Reporting Entity

- The government reporting entity should comprise government components and those organizations that are controlled by the government.

Determining Whether Control Exists

- Control is the power to govern the financial and operating policies of another organization with expected benefits or the risk of loss to the government from the other organization's activities.
- Whether a government controls an organization is a question of fact that must be determined by reference to the definition of control described in the prior paragraph and the particular circumstances of each case.
- Requires the application of professional judgment based on the definition of control and the substance of the relationship.
- It is the preponderance of evidence that would be considered in assessing whether a government controls an organization.

GA Smoothing – Considerations (*Accounting Treatment: Does Province Control Entity?)* (cont'd)

Indicators of Control

- There are certain indicators that provide more persuasive evidence of control:
  - Government has the power to unilaterally appoint or remove a majority of the members of the governing body of the organization;
  - Government has ongoing access to the assets of the organization, has the ability to direct the ongoing use of those assets, or has ongoing responsibility for losses;
  - Government holds the majority of the voting shares or a "golden share" 1(1) that confers the power to govern the financial and operating policies of the organization; and
  - Government has the unilateral power to dissolve the organization and thereby access its assets and become responsible for its obligations.

- Other indicators that may provide evidence of control exist when the government has the power to:
  - Provide significant input into the appointment of members of the governing body of the organization;
  - Appoint or remove the CEO or other key personnel;
  - Establish or amend the mission or mandate of the organization;
  - Approve the business plans or budgets for the organization and require amendments;
  - Establish borrowing or investment limits or restrict the organization's investments;
  - Restrict the revenue-generating capacity of the organization, notably the sources of revenue; and
  - Establish or amend the policies that the organization uses to manage, such as those relating to accounting, personnel, compensation, collective bargaining or deployment of resources.

Overview of RRRP Enhancement – Options

	Program Envelope for H1 ($M)*	Monthly Rebate for R2:low density consumers (+/- from status quo)	Monthly Rebate for R1: medium-density customers	Monthly cost to ratepayers**
(Status Quo) RRRP program for R1 and R2 customers of Hydro One (as of January 2017)	$242M	$60.50/month	$0	$1.58/month
(1) Accelerates move to fixed distribution rates for those customers expected to see a reduction in costs.* **	$306-$332M	Distribution costs capped at $64.64/month. Benefit begins at 1,200kWh/month	Distribution costs capped at $55.70. Benefit begins at 955kWh/month.	$2.07/month
(2) Increase total RRRP envelope to reduce R2 and R1 distribution costs at 1000kWh/month to Algoma Power costs at 1000kWh/month	$292M	$66.61/month (+$6.11/month)	$4.91/month	$1.90/month
(3) Change RRRP program to a volumetric-based tiered benefit program where rebate will be dependent on customer consumption levels				
(3a) • Assume total RRRP program envelope of $300M and distribute to R2 & R1 based on tiered-benefit levels. • Tiered-benefit levels: divide customer base into 3 equal buckets. Allocate $300M to each bucket in proportion to contribution of H1 distribution revenues. • Assume fixed current $60.50 rebate no longer applies equally to all R2 customers.	$300M	750kWh or less: $37.65 (-$22.85) 750 to 1,200 kWh: $44.74 (-$15.76) 1,200 kWh or more: $60.69 (+$0.49)	600Kwh or less: $16.05 600kwh to 1,000Kwh: $19.22 1,000kwh or more: $25.67	$1.90/month
(3b) • Expand RRRP program envelope and distribute to both R2 & R1 customers based on tiered-benefit levels. • Tiered-benefit levels determined in same manner as 3(a). • Assume fixed current $60.50 still applies to all R2 customers	$542M	750kWh or less: $81.66 (+$21.16) 750kwh to 1,200 kWh:$91.90 (+$31.40) 1,200 kWh or more: $114.95 (+$54.45)	600 kWh or less: $23.19 600kwh to 1,000 kWh: $27.76 1,000 kWh or more: $37.09	$3.20/month

*All option costs are inclusive of status quo RRRP, except 3(a) which assumes a phaseout of the program.
**Only if left on ratebase. Will increase based on yearly expansion.
***Based on Hydro One estimates. Consumer benefit is total costs subtract the cap amount.
Note: figures do not include ~$50M in RRRP costs currently supporting Algoma Power and Hydro One Remotes

All RRRP Options – Fiscal Considerations

Ratepayer Impacts

- Some consumers with low consumption may still have proportional higher distribution rates. These customers will experience bill pressures both from the transition to fixed rates and from expected general rate increases (for which they are responsible for an increasing proportion).
- Hydro One distribution rates are expected to climb in coming years. The projected 2017 fixed rates of $64.64 (R2) and $55.70 (R1) will rise through the transition period. Therefore customers who receive a benefit will still experience bill increases.

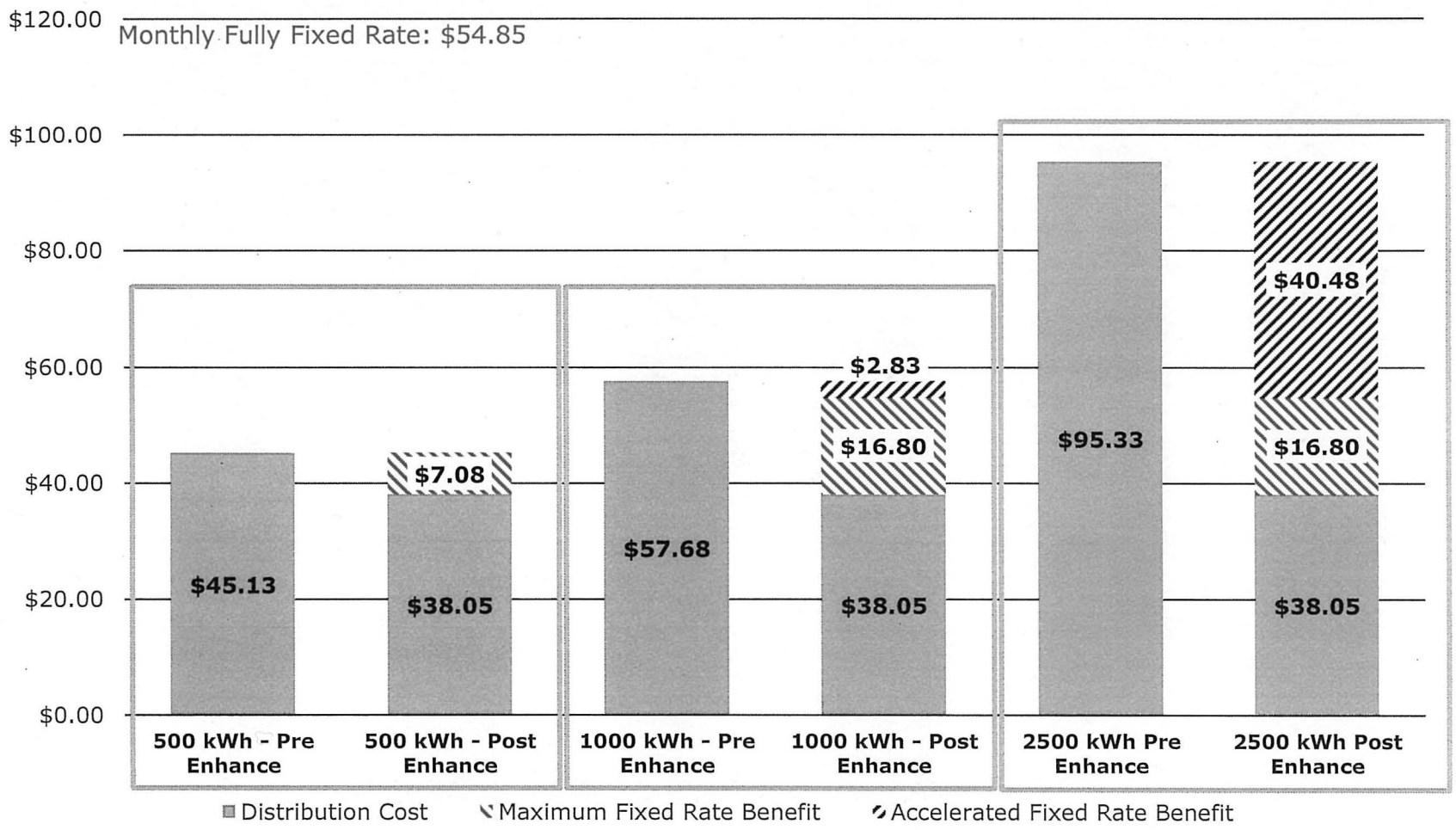
Fiscal Impacts

- Having the original RRRP subsidy remain on the rate-base allows for program expansion from the fiscal plan while avoiding an additional $242M tax-base impact.
- 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 significantly, which would have significant impact on fiscal requirements and ratepayer impacts.
- Cost for Hydro One to implement and to upgrade customer billing systems is likely material. Those costs would ultimately be passed back to the customers of those LDCs.
- The Ministry will need to consider how consumption thresholds and/or benefit levels rise alongside the expected rise in distribution rates.
- There is a high risk of entrenching external subsidies, as there is no clear path to transition away from subsidies and toward a more sustainable, cost-based rate framework.

All RRRP Options – Implementation Considerations

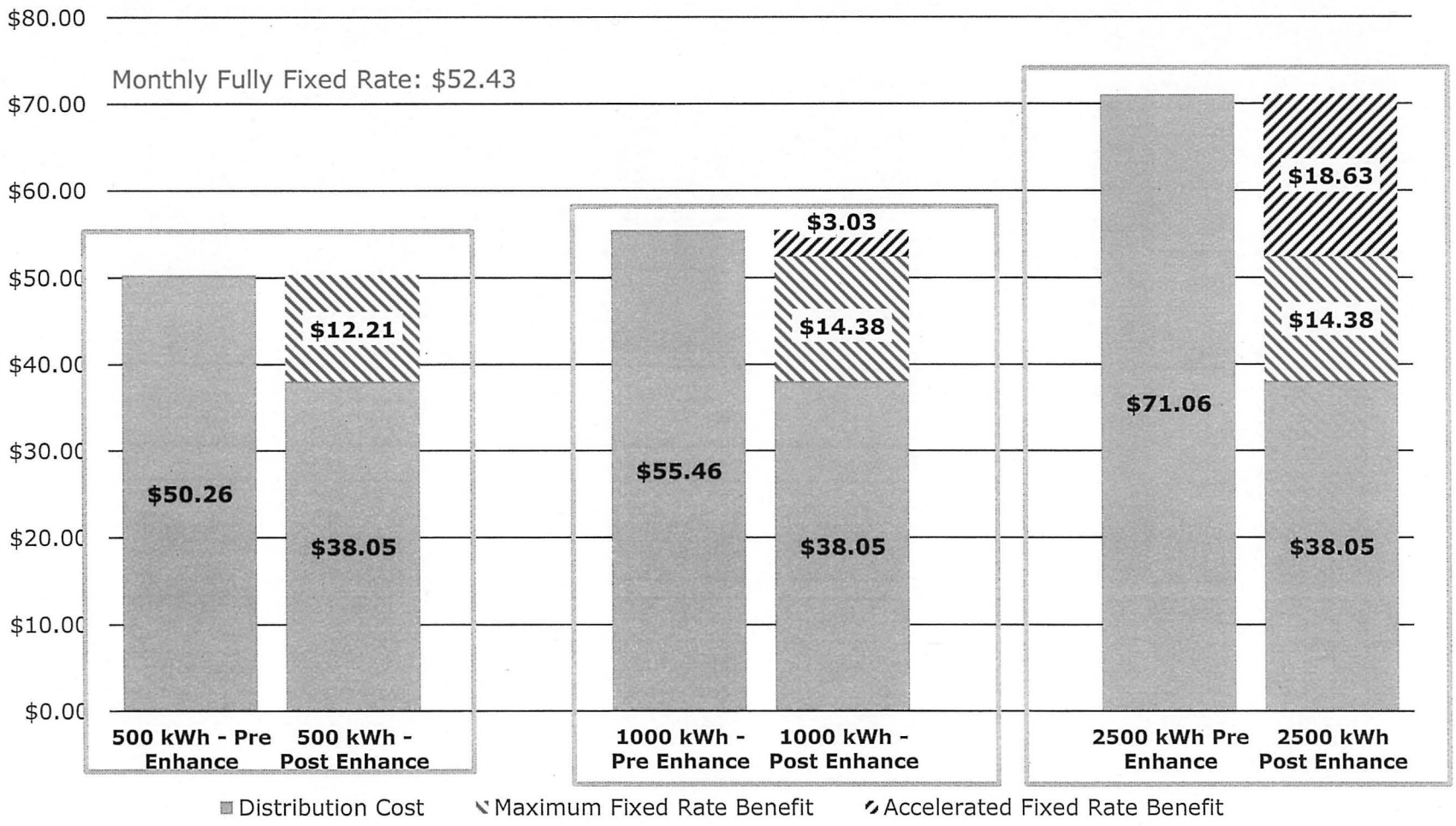
- LDCs would track credit variances in a variance account and settle amounts with the IESO, which receives taxpayer funding from ENERGY/MoF in the same manner as the 8% rebate happens today.
  - While this new program would build on exiting transfer payment protocols in use under the ORECA, it would be complex for Hydro On to implement, as CIS upgrades are likely needed.
  - Depending on the option chose, OEB estimates that the implementation would take at least 6 months or more, following finalized regulations, given need to change customer billing systems and determine settlement procedures.
- RRRP focuses on ameliorating differences in distribution costs, not the entire Delivery line of the residential bill which also includes transmission and line loss costs.
- Eligibility for RRRP is currently determined by LDC density levels. Hydro One R1 has similar density levels to some other LDCs (e.g., InnPower). Thus if the intention is to limit expansion to just Hydro One R1, a new eligibility criteria would have to be developed (legal and regulatory risks would need to be explored).
- 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.
- The development of an appropriate program can be initiated through a letter to the Ontario Energy Board via s. 35 of the *Ontario Energy Board Act, 1998*.

High Distribution Cost LDCs – Accelerating Fixed Rate Benefit/Normalizing Fixed Rates (Algoma)



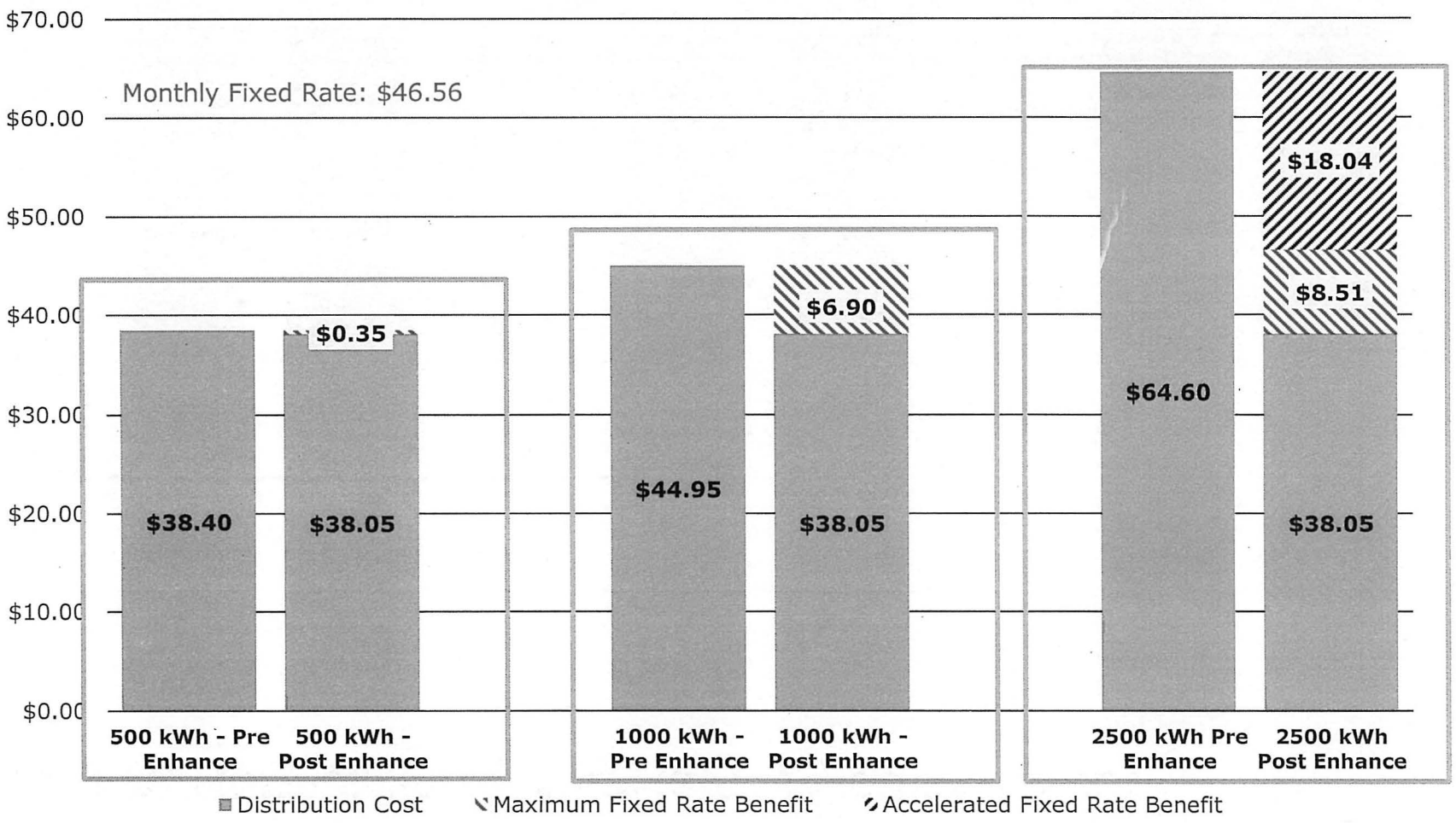
Note: *Rates are for 2017 (either approved or proposed)*

High Distribution Cost LDCs – Accelerating Fixed Rate Benefit/Normalizing Fixed Rates (Atikokan)



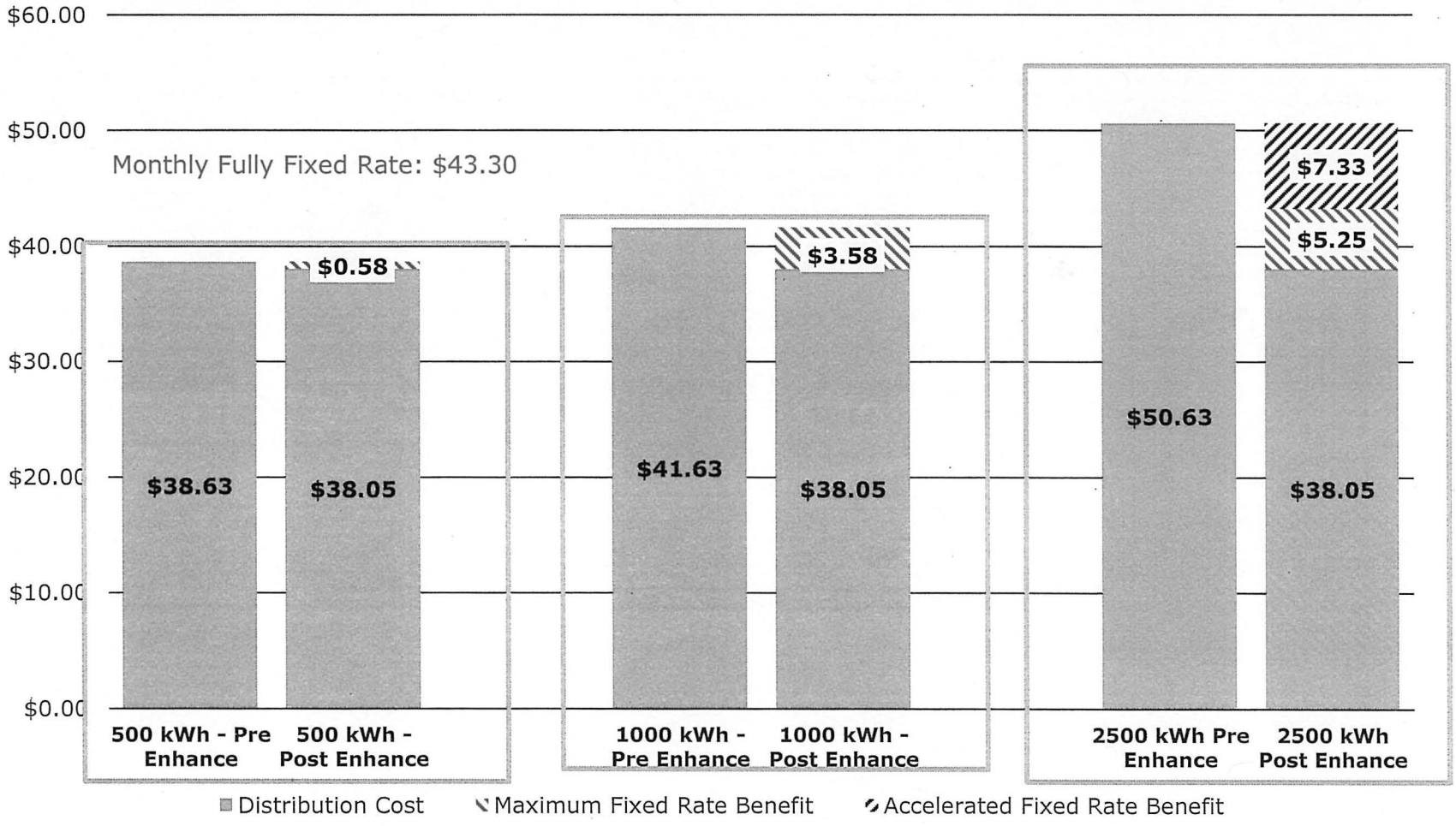
Note: Rates are for 2017 (either approved or proposed)

High Distribution Cost LDCs – Accelerating Fixed Rate Benefit/Normalizing Fixed Rates (Chapleau PUC)



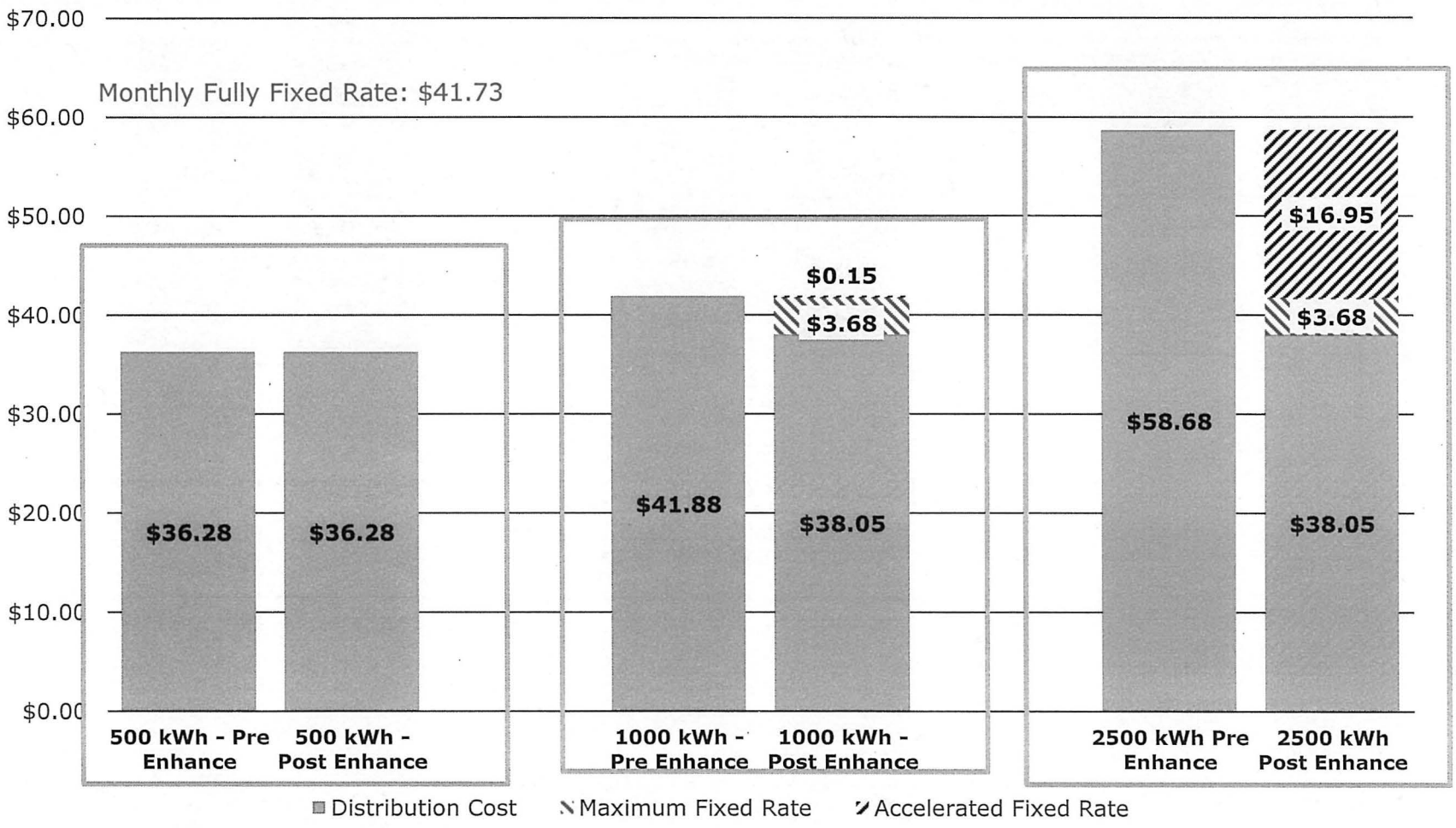
Note: *Rates are for 2017 (either approved or proposed)*

High Distribution Cost LDCs – Accelerating Fixed Rate Benefit/Normalizing Fixed Rates (Sioux Lookout)



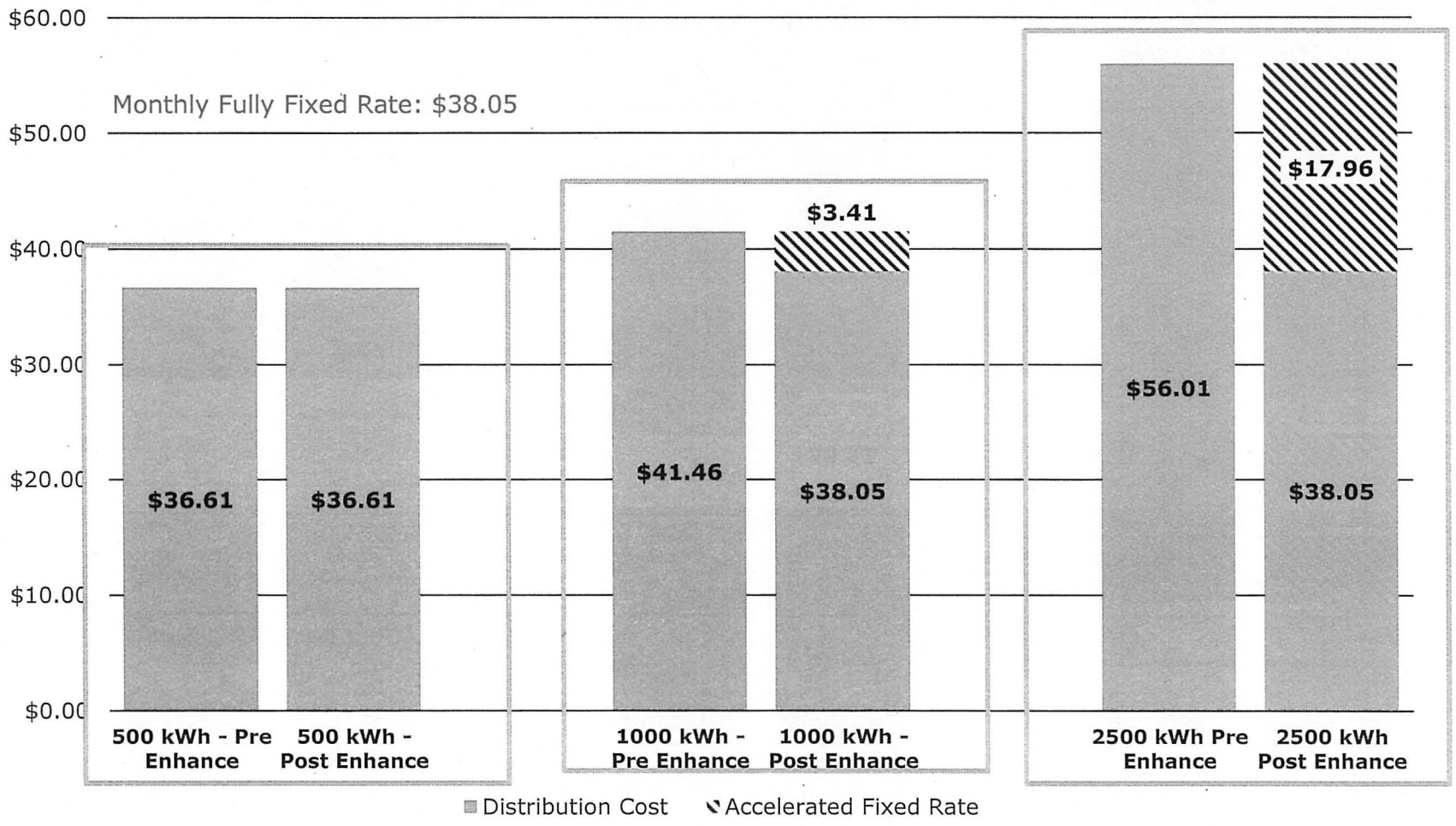
Note: *Rates are for 2017 (either approved or proposed)*

High Distribution Cost LDCs – Accelerating Fixed Rate Benefit/Normalizing Fixed Rates (Parry Sound)



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

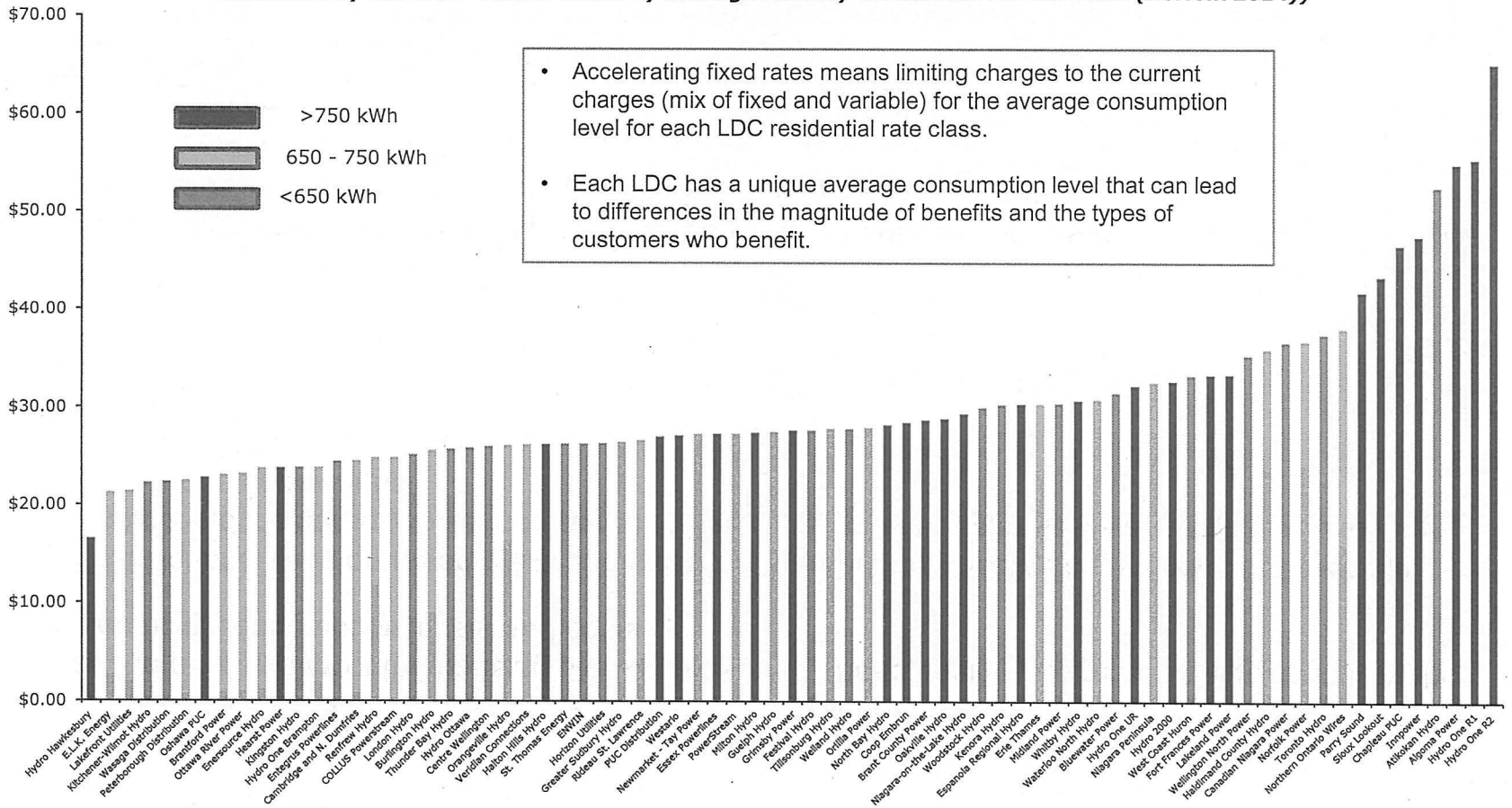
High Distribution Cost LDCs – Accelerating Fixed Rate Benefit/Normalizing Fixed Rates (Northern Ontario Wires)



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

Accelerating Fixed Rate Impacts – LDC Disparity

Projected 2017* Monthly Residential Fixed Distribution Bill
Calculated by the OEB - Colour Coded by Average Monthly Residential Use for 2015 (Norfolk 2014))



- Accelerating fixed rates means limiting charges to the current charges (mix of fixed and variable) for the average consumption level for each LDC residential rate class.
- Each LDC has a unique average consumption level that can lead to differences in the magnitude of benefits and the types of customers who benefit.

*2017 Approved and Proposed (Decisions Pending)

First Nations Rate Assistance – Context

- 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*
  - 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.
  - 67% of families residing on-reserve are single parent families, compared to the Canadian equivalent of 19%.

***Note:** Average income for those aged 15 and older in 2010
**** Note:** 2006 Census data

OEB First Nations Rate Report – Background

- Through the First Nations-Ontario Political Accord and Canada's Truth and Reconciliation Commission's Calls to Action, there is a renewed spirit to work together on issues of mutual interest, including resource benefits sharing, the treaty relationship, and jurisdiction.
- First Nation and Political-Territorial Organization leaders have advocated for the review of delivery charges associated with transmission and distribution assets within the context of historical grievances and the need for electricity rate relief for on-reserve customers.
- The Minister committed to consider options for addressing the issue at the Apr. 18, 2016 First Nations-Ontario Energy Table meeting.
- In June 2016, pursuant to s.35 of the OEB Act, the Minister 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.*"
- In order to inform its report, the OEB engaged with First Nations, including remote communities, the distributors serving them, and consumer groups such as the Low Income Energy Network, in a series of meetings across the province. It also established an Advisory Committee with the Chiefs of Ontario's Grievance Committee.
- 48 First Nations attended meetings held in the Fall of 2016 in London, Couchiching First Nation, Sudbury, Toronto and Thunder Bay. The OEB also held sessions with Local Distribution Companies (LDCs) and consumer groups.
- The OEB provided its report to the minister on December 29, 2016.

Distributors Serving On-Reserve First Nation Customers[1]

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
Fort Albany Power Corporation	No Data Filed
Kashechewan Power Corporation	No Data Filed
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**

[1]Data is based on distributors' reports to the OEB. Customer numbers for Hydro One reflect total on-reserve residential customer accounts, not all of which have been identified as First Nations customers for tax-exemption purposes. The total number of on-reserve First Nations residential accounts represents the maximum number of residential accounts that could be held by First Nations customers.

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

OEB – LDC Efficiencies and Rates (Performance Incentives)

Option	Description	Potential Cost Impacts*	Timeline**	Notes
Performance Standards with Rewards & Penalties	Strengthen LDC scorecard by connecting to LDC financial performance through earnings sharing or penalties paid to consumers. Ex: SAIDI/SAIFI; OM&A per customer	• 1-2% of revenue requirement could be recycled back to customers. • Performance penalties would be real, periodic on-bill $ reductions. • Cost reduction would only occur if standards are not met.	1 year	UK Regulator Ofgem requires utilities to pay consumers up to £50 if reliability standards are not met.
Enhanced Economic Regulation	Revise rate-setting to reflect tightening productivity requirements and capital cost avoidance.	• <1% reduction in rates annually, with additional capital investment avoidance. • Methods include stronger productivity factors, broader peer comparisons, and elimination of ICM.	1-3 years	Incents innovation by requiring LDCs to provide equal or better service on less inflation-adjusted revenue annually.
LDC Collaboration Incentives	Create regulatory incentives for LDCs to pursue efficiencies and service sharing agreements.	• Potential to avoid individual LDC capital investments of up to six figures, plus additional OM&A tightening. • Actual level of rate reduction dependent on specific LDC proposals.	1 year for new guidelines, savings to be realized through LDC planning process.	LDCs have already indicated an interest in pursuing such arrangements but have expressed concern on regulatory barriers and costs.
Line Loss Accountability	Create appropriate benefit-sharing mechanism so LDCs are incented to pursue line loss reductions.	• Potential for 1-3% reduction in commodity charges associated with losses. • Requirements dependent on business cases so costs don't outweigh benefits.	1-2 years	Potential linkages with related proposal for in-front of the meter conservation.

***Note:** Dependent on implementation specifics as determined by OEB

****Note:** Timelines begin from Ministry approval of OEB LTEP Implementation Plan

LDC Distribution Rate Changes (2006 vs 2016)

KEY FINDINGS

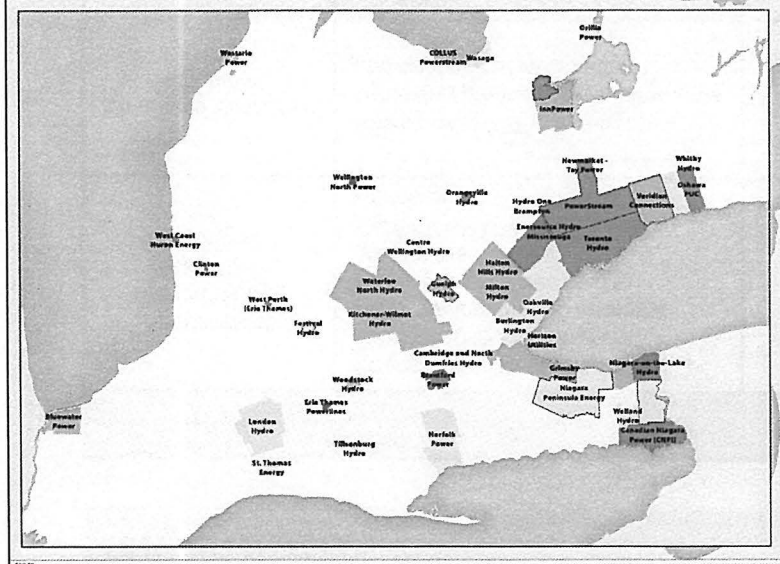
- In summary, distribution rates (including rate riders) have increased by about 24.5% across the Province, with significant variation between regions and LDCs (-17% to 148%).
- There is generally no correlation between LDC size or location and distribution rate increase in absolute or percentage terms.
- The current analysis shows no clear relationship between the percentage rate increase and the absolute rate level (that is, high rate increase LDCs may still have among the lowest rates, and low rate increases may have higher rates.
- No clear relationship between amalgamation and rates.
- The analysis does suggest that Hydro One has the highest rates, and some of their customers have seen higher than average rate increases.

NOTES

- **Rate Calculation:** Monthly residential distribution bill rates, before taxes, are based on consumption of 750 kWh. Distribution charges account for approximately 23% of the average 2016 residential bill. All figures calculated by ENERGY staff without input from OEB.
- **Colours:** Colour coding of the map only depicts the change in LDC rate amounts (i.e. LDCs in red don't necessarily have the highest total rates).
- **Mergers:** Rates for customers in merged LDCs have experienced different levels of change. For merged entities, the largest LDC in 2006 was used. An accompanying map focuses on merged entities.
- **Points in Time:** Current analysis compares 2016 and 2006 only. Rates could have had an uneven trajectory, especially considering regulatory decisions such as time limited charges/rebates with temporary impacts.

Total Dx Rate	2006	2016	% Rate Change
Hydro One LR (High Density)	$29.13	$35.65	22.4%
Hydro One R1 (Medium Density)	$37.73	$54.02	43.2%
Hydro One R2 (Low Density)	$44.65	$76.14	70.5%

Only LDCs with distribution rates of 2006 and 2016 are shown.
Only the largest distribution areas are shown and smaller satellite areas are not all shown.



Legend

LDC Rate Comparison 2006 vs 2016

% Total Rate Change (# of LDCs)

- -17.3% to 0% (5)
- 0.1% to 15% (25)
- 15.1% to 30% (21)
- 30.1% to 60% (16)
- 60.1% to 89.3% (4)
- Merged LDCs

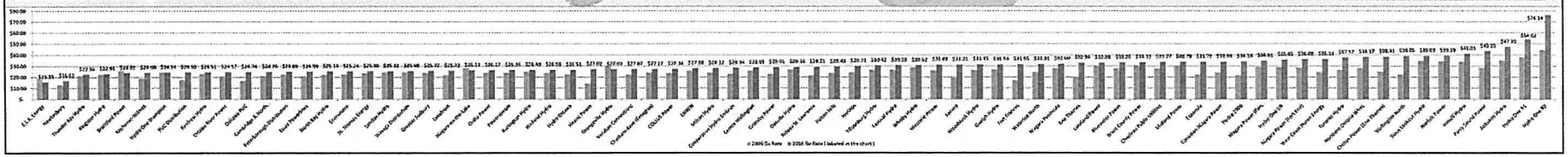
Below LDCs had either acquired or merged: (# of merged LDCs)

a. Powerstream Inc. (5)
b. Chatham-Kent Hydro Inc. (13)
c. Veridian Connections Inc. (4)
d. Guelph Hydro Electric Systems Inc. (2)
e. Festival Hydro Inc. (2)
f. Orangeville Hydro Limited (2)
g. Niagara Peninsula Energy Inc. (3)
h. Peterborough Distribution Incorporated (3)

Data source: Rate database, Rate orders and OEB yearbook
Produced by Strategic Policy and Analytics Branch,
Strategic Network and Agency Policy Division,
Ministry of Energy

0 30 60 120 180 240
Kilometers

Published December 2016



of 2006 Dx Rate in 2016 (for Rate 1 labeled in the chart)

Ontario

MINISTRY OF
ENERGY

Hydro One
Secondary Sale Strategy

For Discussion

March 9, 2016

CONFIDENTIAL & COMMERCIALLY SENSITIVE

Commercial Sensitivity

- The following submission contains confidential and commercially sensitive information
- Dissemination of this submission could have significant commercial impacts to the Province
- Information in this submission may have impact on market expectations and / or assessment of value. Any communication on these matters should be restricted to publicly available information
- Securities laws impose restrictions on the manner in which a prospective issuer and/or selling security holder communicates with the investing public while it is preparing for, and during, an offering. This period is often referred as the "quiet period"

Purpose

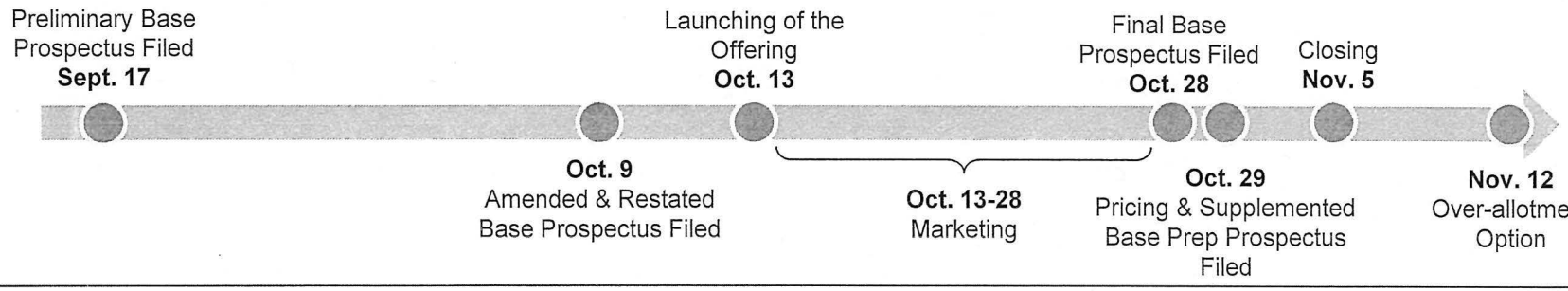
- The Province is moving forward with the Premier's Advisory Council on Government Assets recommendations to broaden the ownership of Hydro One
- In support of that process, the Investment and Governance Secretariat has developed a preliminary, proposed approach for share sales in 2016/17 including size, price, timing and mechanisms
- The Ministry intends to proceed to Treasury Board to seek a mandate for future share sales in April 2016
- This deck provides both an snapshot of Hydro One's share performance as well as an overview of Ministry's proposed approach for share sales in 2016/17

Context

IPO Results

- The Initial Public Offering (IPO) closed in November, and approximately 15% of Hydro One common shares are now trading on the Toronto Stock Exchange
  - 89,250,000 shares, or 15% of Hydro One, was offered at a share price of $20.50, for total gross proceeds of ~ $1.83B
- The Province also sold, by way of private placements, an additional aggregate amount of approximately 0.9% of Hydro One shares to the Power Workers Union (PWU) and the Society of Energy Professionals (Society), bringing the Province's current ownership to approximately 84% of Hydro One

Terms of the Offering	
Issue Size	$1.83B or 89,250,000 shares (including over-allotment option
Issue Price	$20.50
Over-Allotment Option	10% of base offering
Dividend	$0.84 per common share annually
Lock-Up	180 days
Exchange/Ticker	TSX: H
Institutional/ Retail Allocation	60/40



Context

Analyst Research

↓**Red** denotes negative change. ↑**Green** denotes positive change

Valuation					
Dealer	**Target ('17)**	**Multiple ('17)**	**EPS 2016E**	**EPS 2017E**	**Rating**
National Bank	$26.00	18.3x	$1.22	$1.27	Sector Perform
RBC	$26.00	21x	1.17	$1.26	Outperform
BMO	$23.50	18.2x	$1.17	$1.22	Market Perform
Scotia*	$23.00	18.7x	$1.13	$1.23	Sector Perform
IA Securities	$23.00	17.0x	$1.12	$1.20	Hold
CIBC	$24.00	17.8x	$1.17	$1.25	Sector Perform
Credit Suisse	$22.00	18.3x	$1.15	$1.20	Underperform

Key Findings

- **Stable Cash Flows:** Resulting from stable regulated environment
- **Steady Growth:** Hydro One is undertaking a five-year capex program of $7.7B (~$1.5B per year)
- **Potential Consolidation:** given push by government and current market activity

Risks Identified

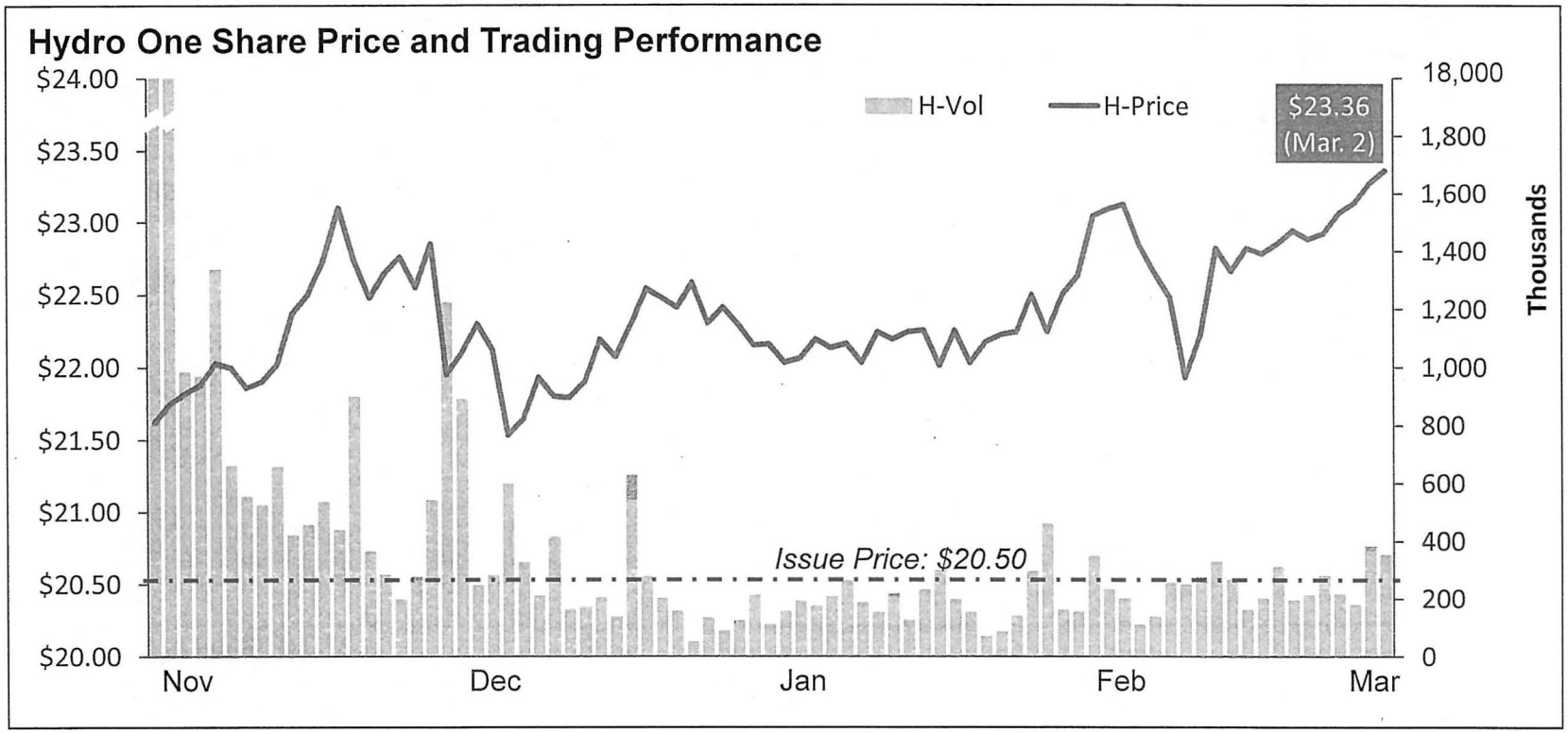
- **Regulatory risks:** Potentially adverse regulatory decisions, including: lower allowed ROEs, rate decisions etc.
- **Political risk:** While a governance agreement exists, a change in government policy could impact Province's future share sales; the province's role; PILs regime etc.
- **Economic growth:** Economic downturn
- **Competitive risk:** There is no guarantee that Hydro One will be awarded future major transmission projects

*New Research Analyst Robert Hope joining Scotia effective March 14th

Context

Share trading data

- On Hydro One's first day of trading the stock price increased 5.5%
  - Since then, Hydro One shares have traded up an additional ~8.1%
- Approximately 31.5M shares traded on day one
  - Trading volume has tapered off with average daily trading volumes of ~300,000

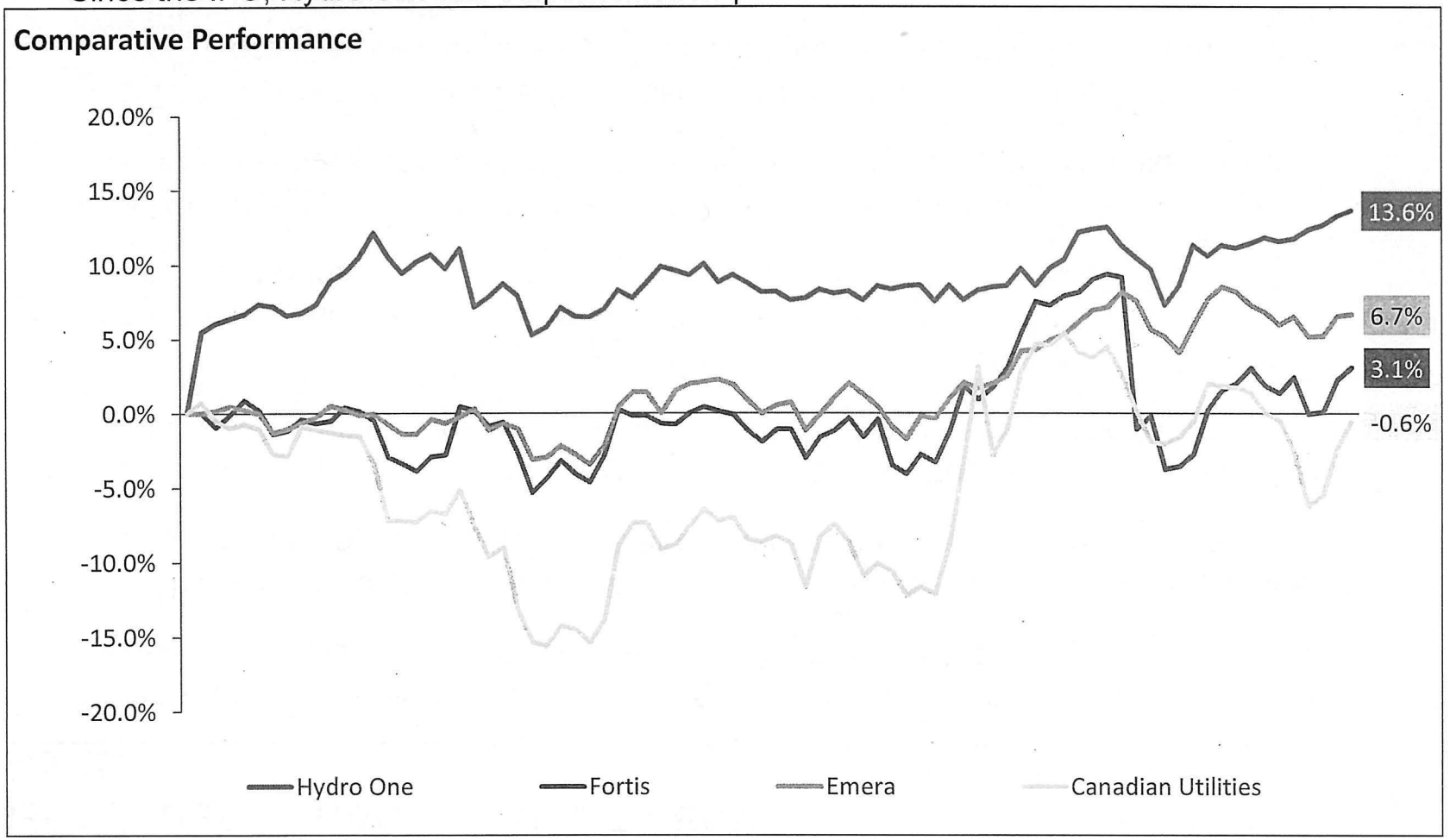


As of March 2, 2016 close

Context

Share trading data

- Since the IPO, Hydro One has outperformed its peers



As of March 2, 2016 close

Secondary Share Sale Strategy

Context

- As announced in the 2015 Ontario Budget, the Province intends to broaden the ownership of Hydro One with an intention of ultimately retaining 40% ownership
  - This will be done in a staged and prudent manner, balancing fiscal requirements and protecting the value of the Province's remaining 40% investment
  - It is important from a market perspective for the Province to show progress on broadening the ownership of Hydro One, reassuring the market that it is continuing on this path
- The Province has indicated it anticipates raising $9B in proceeds, $4B of which it will invest in infrastructure
- The Ministry of Energy plans to seek approval of parameters for a broad secondary share sale strategy, consistent with the approval process that was used for the IPO
  - The Minister of Energy will represent the Province as an investor / shareholder of Hydro One Limited shares and will approve individual transactions, unless otherwise delegated
  - The Minister is supported by the Expert Investment Advisory Committee and the Investment and Governance Secretariat, described on the next slide

Secondary Share Sale Strategy

Committee and Secretariat Mandate

- To support the Minister in his role as shareholder an Expert Investment Advisory Committee (Committee) has been established, consisting of:
  - Ed Clark (Chair), David Leith, Tom Rahilly, Sharon Ranson and Alan Hibben
- The Committee is supported by the Investment and Governance Secretariat (Secretariat), which is part of the Ministry of Energy
- The Committee will support the Minister with both his Governance and Investment responsibilities, and part of this will involve:
  - Developing an annual share sale plan and executing future offerings as approved
  - Providing advice to the Minister on current market conditions in support of share sale plans
  - Acting as needed as pricing committee in order to provide advice to the Minister regarding appropriate share sale price ranges, fee structures and other transaction related activities

Secondary Share Sale Strategy

Considerations

- The following elements should be considered in development of the secondary share sale strategy :
  - **Mechanism**: Monetization options, as described in the following slides, should be considered on the basis of value, ability to execute, flexibility and cost
  - **Timing**: Need to manage lock up, price expectations, blackouts, earnings releases, seasonality and other catalysts
  - **Size**: What can the market accommodate
  - **Fees/Discounts:** Maximize value for Ontarians while attracting the right team to deliver
  - **Pricing:** What share price should the Province expect to receive
  - **Process**: How to build a fair and competitive process that maximizes value for the Province

Secondary Share Sale Strategy

Mechanism

Recommended Approach

- A bought deal transaction

- Under a Bought transaction, the Province's securities are purchased by underwriters who in turn sell them to institutional and retail investors
- Unlike with the IPO, no marketing is done prior to pricing and the underwriting the securities
- The Province would be presented with a binding bid letter which contains the terms of the offering, including the purchase price
- Once accepted, the underwriters "own" the shares, the deal is announced and marketing begins
- See appendix for information on other options

Secondary Share Sale Strategy

Mechanism

- This option represents the most effective mechanism to enable a transaction of this scale for a variety or reasons, including:
  - allows for efficient distribution in a very short timeframe
  - minimizes exposure to market uncertainty
  - transfers risk to underwriters and away from province as it locks in price and size certainty
  - minimizes the potential for gaming by investors.
    - Gaming occurs when investors are able to put pressure on the stock when they know an offering is coming and will be priced at a future date (e.g. short the stock ahead of the deal, putting downward pressure on the price, and cover with the cheaper stock from the new issue, therefore locking in a profit from the price spread)
  - could be coupled with a private placement with large anchor investor(s), such as a pension fund to drive demand and investor confidence
  - Bought deal realizes the tightest price discount historically vis-à-vis other methods
    - Median discount of 3.7% versus 6.4% and 7.0% for overnight and marketed, respectively

Secondary Share Sale Strategy

Timing

Recommended Approach

- A potential transaction in late May or early June, with flexibility to delay to fall depending on market conditions

- Three major financing windows exist annually: Spring, Fall and late Winter
- Opportunities must align with Hydro One related events (lock-up, earnings releases, index inclusion etc.) as shown more fully on the calendar included in the appendix
- A next tranche occurring in 2016/17 will provide the market with confidence that the Province is continuing on the path to broaden the ownership of Hydro One
- Considerations
  - Market timing risk (if the market is receptive in spring, do you chance waiting to the fall if price target for issuance isn't perfect)
  - Size of offering (if price target in spring isn't perfect but market tone is good, consider perhaps smaller offering with intent to do another in the fall)
  - Interest rate increases would negatively impact price (analyst estimates 4x price earnings multiple contraction with 200 bps increase in 10-year GOC bond yields, equivalent to decrease from $22.82 to ~$18 for Hydro One shares)*

*Based on 1.23 analyst consensus EPS for 2017

Secondary Share Sale Strategy

Size

Recommended Approach

- Share sales up to approximately $2B in fiscal 2016-17

- Based on discussions with banks and investment groups, the market will likely accommodate a Hydro One secondary offering between $1-2B
  - Given Hydro One's regulated environment and stable dividends, investors will be interested in investing, particularly given the recent market volatility and low interest rate environment
  - There remains unsated demand from the IPO, and additional demand created by Hydro One's inclusion in indices expected in late spring
- While the expectation is a tranche of between $1-2B, the Province will want to maintain flexibility in order to accommodate changes as a result of market conditions
- The Province may consider commencing a process at the low-to-mid-range of a potential tranche and assess quantity and quality of market demand before committing to a final offering size
  - The flexibility will be important, given the Province's desire to execute a successful next tranche, and maintain demand for future offerings

Secondary Share Sale Strategy

Fees / Discount

Recommended Approach

- Achieve a combined fee and discount of no more than 7%, comprised of a 1-3% fee and 4-5% discount

- It will be important to balance the desire to limit fees as well as the discount to the market price with the need for a strong underwriting team and a successful sale result in order to maximize value for the Province through the next tranches
- The Province has reached out to banks for their thoughts on a potential fee and discount for a secondary offering, signalling that price net of fees/discounts will be a considerable focus. We expect costs to break-down in the following manner:
  - **1-3% Fee**: Paid to underwriters for executing the transaction and taking on risk
    - The IPO was sold with fees of 1% for institutional and 3% for retail (~1.8% blended).
    - This low fee structure was driven by the high quality nature of the asset, the Province as seller, and effective negotiation.
  - **4-5% Discount**: Offered to investors in order to incent participation in the offering, rather than buying shares in the market
    - While the IPO did not have a discount set out in advance, the implied discount was ~5.5% based on share movement post IPO

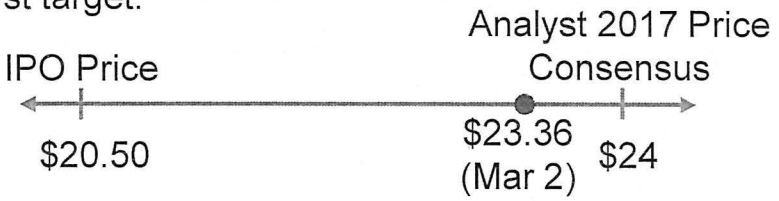
Secondary Share Sale Strategy

Pricing

Recommended Approach

- Proceed with a transaction based on market conditions and the Province's commitment to sell down over time. Report back to Treasury Board, in advance, in the event the market price (not net of fees or discount) is likely to fall below the IPO price

- The Province will likely want to show progression over the next few years with each subsequent tranche selling at successively higher prices
  - The price of the offering will need to balance the Province's priorities to maximize proceeds while maintaining value and developing and sustaining investor demand for future transactions
  - The Ministry of Energy would report-back to Treasury Board prior to any transaction, in the event that market price is likely to be less than the $20.50 IPO price
- Any sale price would be approved by the Minister of Energy, in consultation with the Expert Investment Advisory Committee which will act as the Pricing Committee during the implementation stage
- The diagram below depicts a continuum from the IPO price to the 2017 consensus price target for Hydro One stock is about $24 per share. The shares appear to be fully priced, trading close to the 1 year average analyst target:



Secondary Share Sale Strategy

Process: Objectives

- As with the IPO, a strong group of investment dealers will be instrumental in delivering a well-executed secondary offering for the Province
  - A strong retail distribution network will help the Province in achieving its objective of broad ownership
- For the IPO process, each bank was invited to present to the Province on why they should lead the transaction
  - Through this process Scotiabank and RBC Capital Markets were chosen as the leads, though all 6 Canadian banks were qualified
- Introducing some degree of competition to the process will help to ensure that the Province is able to maximize value by reducing underwriting fees and discounts
- The following, proposed process is designed to help to achieve the following:
  - Competitive process
  - Fair and orderly
  - Effective, resulting in an executable transaction

Secondary Share Sale Strategy

Process: Lead Selection

Recommended Approach

- Two competing syndicates, including the six largest banks bidding on net price

- Under this approach the six largest Canadian Financial institutions would be evaluated and ranked on their ability to act as lead bookrunners / underwriters for the next Provincial Hydro One secondary offering
  - The evaluation would assess criteria such as research, retail distribution, trading volumes, experience etc., similar to the process undertaken in the IPO
- These six institutions would be divided by the Province into two lead bidding groups and asked to submit bids on the terms of the transaction
  - Each group would be asked to bid on price net of fees and discount on a firm basis
- These six institutions would be divided into two lead bidding groups based on their rankings in order to ensure each group would have the capacity to underwrite an offering on its own, if required:
  - Group 1: #1 (lead), #4, and #6
  - Group 2: #2 (lead), #3, and #5
- The Province would set out the economics of the winning group, as well as the losing group, which would have the option to back in to the deal:
  - The winning group would act as equal co-leads with a 16% allocation each
  - Each member of the other group would have right to back in for a 12% allocation each
- The Province is considering the opportunity to enlist Special Advisor to the Minister of Energy, Denis Desautels to advise on the fairness and transparency of this process

Secondary Share Sale Strategy

Recommendations

- The following table outlines key staff recommendations for Hydro One secondary offerings in fiscal 2016-17:

Mechanism	Bought deal transaction
Timing of Offerings	A potential large transaction in May or June, with flexibility to delay to fall depending on market conditions
Size	Share sales up to approximately $2B
Pricing	Proceed with a transaction based on market conditions (if market price above $20.50) and the Province's commitment to sell down over time
Underwriting Fees / Discount	Achieve a combined fee and discount of no more than 7%, comprised of a 1-3% fee and 4-5% discount
Process	Two competing syndicates, including the six largest banks bidding on net price

Secondary Share Sale Strategy

Proposed Next Steps

- The Investment and Governance Secretariat will meet with the CFO of Hydro One to discuss share sale mechanisms

- The Ministry is working with Treasury Board to schedule a report back on the IPO and to seek TB/MBC approval of parameters to support secondary offerings

- In parallel, the Investment and Governance Secretariat plans to develop a detailed process roadmap for secondary offerings including responsibilities and timing

Appendix

Mechanism (Large Scale)

- Several monetization options exist and can be considered by the Province for future offerings

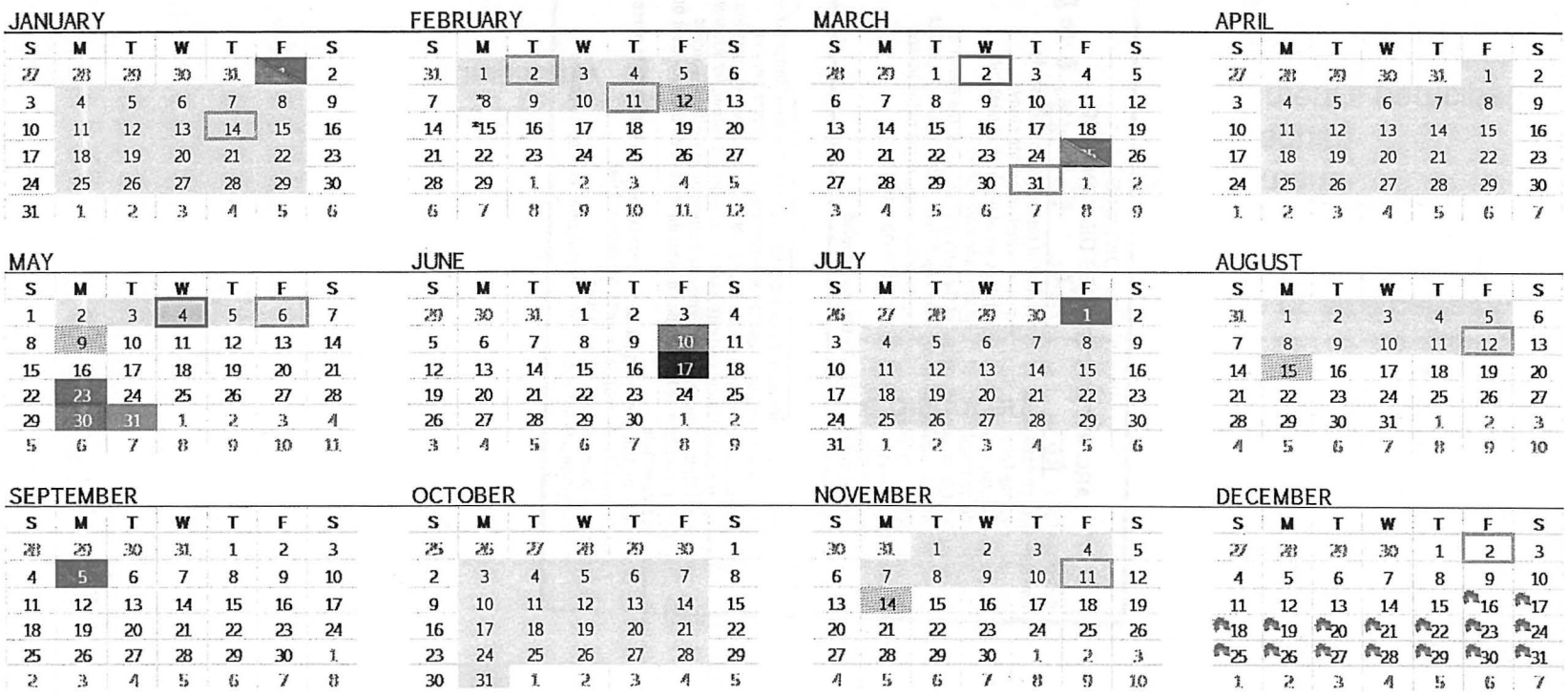
1. Bought	Underwriters provide the Province with an offer to purchase shares at a specified price, taking on risk to place shares with investors
2. Overnight Marketed	A variant on the traditional bought deal structure, where the deal is marketed and priced prior to a commitment from the underwriters
3. Marketed	Similar to IPO process. Hydro One management required to market to investors. Strategy generally employed in secondary offerings where there is news to disseminate (e.g. large acquisition)

Mechanism (Large Scale)

	1. Bought	2. Overnight	3. Marketed
Timing	(<1day)	(<1day)	Varies from about 10 days to as long as the IPO process
Rationale	• Risk transferred to investment dealers • Certainty of size and price	• Allows for larger pool of investors than bought • Allows price discovery	• Affords broadest investor distribution • Opportunity to update investors
Considerations	• Eliminates market risk for issuer • Ability to act opportunistically • Minimal management time • Requires pragmatic pricing	• Risk retained by issuer • Generally for an offering where demand is uncertain • Engages US and international institutions more than a bought deal • Shortens market risk vs. marketed offering • Potential risk from overnight events • Institutions drive pricing	• No price or size certainty • Maximum ability to cover the Hydro One story to build demand • Would require management's participation • Inconsistent with market practice in normal circumstances • Depending on timing, roadshow may be too recent to have new story to deliver

Potential Issuance Windows

2016 CALENDAR OF EVENTS & POTENTIAL ISSUANCE WINDOWS - HYDRO ONE



Ontario

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