
Electricity Pricing and Rate Mitigation Initiatives

Briefing for PO Deputy Principal Secretary
2016-10-17

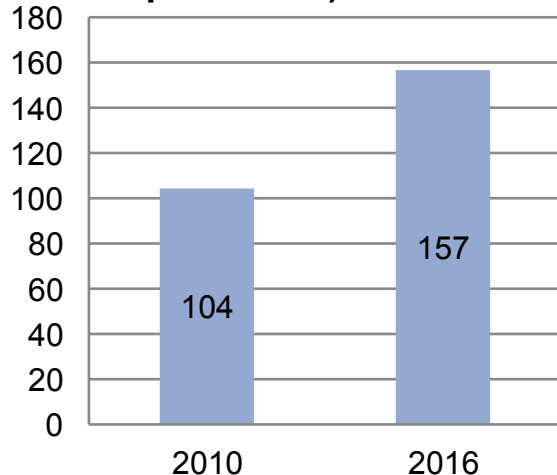
Overview of Electricity Pricing in Ontario

- Electricity pricing is generally based on the principle of full cost recovery. Payments to the province's generation fleet are recovered as they are incurred.
- ~~Prior to 2002, consumers were charged a fixed price per kilowatt-hour (kWh) that bundled together generation, transmission and distribution costs.~~
- ~~Today, bills break out the costs for generation, transmission and distribution; in general, prices reflect the cost to produce and deliver electricity.~~
- Electricity costs are increasing as the necessary investments are made to decarbonize and modernize the province's electricity infrastructure.
- Ontario has taken action to replace coal-fired generation with cleaner sources of energy. Since 2003, the Province has invested more than \$35 billion in over 16,000 megawatts (MW) of new and refurbished clean generation, including nuclear, natural gas and renewables.
- This investment represents about 40% of our current supply and has helped decrease electricity sector emissions by approximately 80%.
- Over the same period, Hydro One has invested \$15.5 billion to enhance and renew its transmission and distribution systems.
- Since 2010, electricity prices have risen considerably, particularly for households and small businesses. Prices are forecast to continue to increase as additional generation comes online.
- ~~For the past several years, electricity prices have increased at a faster pace than the consumer price index as significant costs have been incurred to update generation, transmission and distribution infrastructure.~~
- Further, price increases are expected in the short term as additional renewable projects come on-line and nuclear units are refurbished.

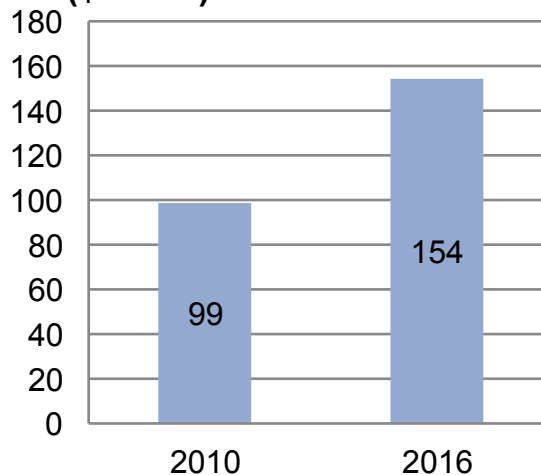
Electricity Prices by Consumer Class

- Since 2010, average bills for residential consumers (i.e., using 750 kWh/month) have increased by over 50% and rates paid by commercial have increased by 56%.
- Industrial electricity rates have remained relatively flat over the same time period, due primarily to the Industrial Conservation Initiative (ICI). ICI represents a cost shift of about \$5/month for residential electricity consumers.

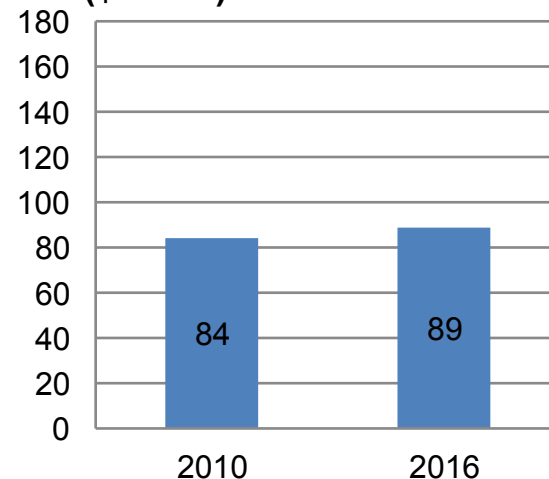
**Typical Residential Bill
(750/kWh per month)**



**Typical Class B (Commercial)
Price (\$/MWh)**



**Typical Class A (Industrial)
Price (\$/MWh)**

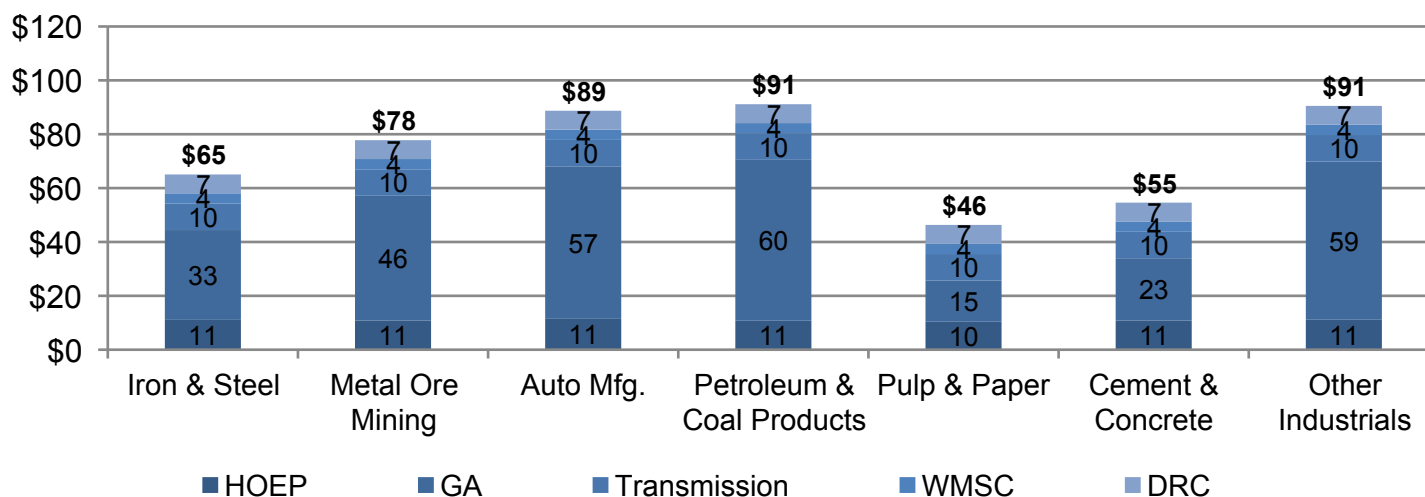


Note: 2016 represents May 2016 for residential after-tax and YTD June 2016 for commercial and industrial.

Industrial Electricity Prices Vary by Sector

- While Class A (industrial electricity consumers) benefit from participation in the ICI program, there is a significant amount of variability in the ability to shift away from peak periods across consumer classes, impacting the savings achieved.
- The below chart shows the prices paid in 2015 across a number of industrial sectors. Consumers in the north that receive rebates under the Northern Industrial Electricity Rate Program (NIERP) achieve rates that are \$20/MWh lower than the below.

**Average all-in Class A, Transmission-connected Electricity Prices by Industrial Sector
(estimated \$/MWh), Year-to-Date June 2016**



Note: HOEP = Hourly Ontario Energy Price, GA = Global Adjustment, WMSC = Wholesale Market Service Charges, DRC = Debt Retirement Charge

Recent Actions to Bend the Cost Curve

- Since 2013, a number of actions have been taken to reduce overall electricity system costs:
 - Renegotiating the Green Energy Investment Agreement, reducing contract costs by \$3.7 billion;
 - Deferring the construction of two new nuclear reactors at Ontario Power Generation's Darlington facility, avoiding an estimated \$15 billion in new construction costs;
 - Approving Ontario Power Generation's plans to enable the ongoing operation of Pickering up to 2024, which is expected to save ratepayers as much as \$600 million;
 - Reducing Feed-In-Tariff (FIT) prices through annual price reviews, saving ratepayers at least \$1.9 billion relative to the 2013 Long-Term Energy Plan (2013 LTEP) forecast; and
 - Removing an expected \$3.3 billion in Large Renewable Procurement (LRP) costs relative to the 2013 LTEP forecast, based on the results of the first phase of the LRP.
 - Suspend the second phase of the Large Renewable Procurement (LRP II) process. This decision will maintain system reliability while saving up to \$3.8 billion in electricity system costs relative to the 2013 LTEP forecast. See appendix for more information.
- Despite these actions to reduce system costs, electricity rates continue to increase for consumers.

Rate Mitigation

- To provide further rate relief to Ontario electricity consumers, the government can use one or more of the levers outlined below:
 - **Tax-based Lever:**
 - Provide an on-bill rebate funded from the tax-base to all consumers or specific classes of consumers (i.e., the Ontario Clean Energy Benefit (OCEB) provided a rebate for eligible electricity consumers).
 - **Rate-based Lever:**
 - Shifts costs within the rate-base from one customer group to another to achieve electricity system benefits and/or policy goals.
 - **Cap and Trade Proceeds Lever:**
 - Redirect cap and trade proceeds to offset the cost of existing initiatives that help reduce greenhouse gas (GHG) emissions (i.e., the CCAP committed to offset the impact of cap and trade and to keep electricity rates affordable).

Industrial Rate Mitigation – Existing Programs

- The **Industrial Conservation Initiative** lowers costs for eligible large electricity consumers (i.e., those with monthly peak demand exceeding 3 MW) that reduce consumption during peak periods. ICI consumers reduce their electricity rates by about one-third on average.
 - Effective July 2015, Class A includes energy-intensive consumers with an average monthly peak demand between 3 and 5 MW, whose primary business is manufacturing, mining, refrigerated warehousing, greenhouses and data processing.
 - The expansion of the ICI allows consumers in specific electricity-intensive sectors to reduce their electricity costs by reducing their demand during peak hours. This initiative will also lower total system costs by deferring the need to build new peaking generation.
- The **Industrial Electricity Incentive** offers reduced electricity rates for companies starting or expanding operations in Ontario. To date, IESO has awarded 22 contracts to energy-intensive companies across the province through the program.
- Participants in the **tax-based Northern Industrial Electricity Rate Program** receive a rebate of two cents per kilowatt hour. On average, industrial electricity prices can be reduced by over 20% through the program. In 2015, Ontario announced the commitment to an ongoing NIERP beyond March 2016.
- The **Industrial Accelerator Program** assists eligible transmission-connected companies to fast track capital investment in major energy conservation projects. The program provides financial incentives to encourage investment in innovative process changes and equipment retrofits to reduce electricity consumption on the provincial system and to help companies become more competitive by positively impacting their bottom line.
- The **saveONenergy** for Business electricity conservation program offered by local distribution companies – offers distribution-connected customers financial incentives for audits, retrofits and process and systems improvements to help businesses better manage their electricity use.
- The IESO holds annual **demand response** auctions which provide availability and utilization payments to successful participants that commit to reducing their consumption when called upon to do so.

Residential Rate Mitigation – Existing Programs

- The **Ontario Energy and Property Tax Credit (OPETC)** provides low- to moderate- income Ontarians, including seniors, who own or rent a home with help paying both their energy costs and property tax. Qualifying individuals can receive up to \$1,008 in tax relief annually, and seniors can receive up to \$1,148 annually.
- The **Northern Ontario Energy Credit (NOEC)** provides assistance to low- to moderate income individuals and families living in northern Ontario who can be exposed to higher energy costs due to more severe winters and heavier reliance on more expensive home heating fuels. Qualifying individuals can receive up to \$146 annually and families (including single parents) can receive up to \$224 annually.
- The **Low-Income Energy Assistance Program (LEAP)** offers emergency financial assistance as on-bill assistance up to \$600 annually, special customer service rules, and energy conservation programs to qualifying electricity and natural gas consumers.
- The **saveONenergy Home Assistance Program** was developed to help income-eligible consumers manage their energy costs by providing home energy efficiency assessments and energy savings measures at no cost. Eligible participants can receive energy efficient appliances like refrigerators and window air-conditioners. Eligible participants in electricity heated homes can also receive a programmable thermostat, weather-stripping services and insulation services.
- The **Ontario Electricity Support Program (OESP)**, developed and implemented by the Ontario Energy Board (OEB) provides an ongoing rate reduction directly on the bills of low-income electricity consumers who have applied and meet the eligibility requirements. The OESP started January 1, 2016, when the OCEB ended. The OESP provides a fixed monthly credit directly on eligible customers' bills, the amount of which will be based on a consumer's household income and household size. This allows the program to provide the greatest benefit to low-income consumers in need of assistance.
- To help ease pressure on residential ratepayers, the government **removed the cost of the Debt Retirement Charge (DRC) from residential electricity bills** as of January 1, 2016.

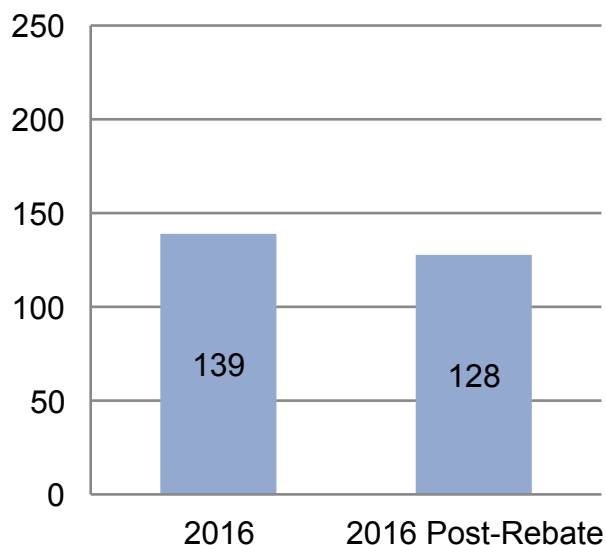
Rate Mitigation – New Initiatives

- Ontario announced a number of initiatives in September 2016.
- The government is introducing legislation that, if passed, would provide an eight per cent rebate to five million electricity consumers, including residential consumers; multi-unit residential buildings and other facilities used as residential rental units such as long-term care homes and school residences; small businesses; and farms.
- The eight per cent saving would go into effect as of January 1, 2017 and would result in savings of about \$130 per year or \$11 per month for a typical Ontario residential electricity consumer.
- The Rural or Remote Rate Protection (RRRP) program reduces electricity delivery costs for approximately 330,000 customers located in rural areas. Ontario intends to increase funding to the RRRP, which, combined with the eight per cent rebate, would result in electricity relief for eligible consumers of approximately \$45 per month or \$540 per year.
- Customers not eligible for the 8 per cent rebate will receive an on-bill benefit via the Greenhouse Gas Reduction Account (GGRA) as part of the Climate Change Action Plan (CCAP).
- Ontario is proposing to expand the Industrial Conservation Initiative (ICI) program to include customers with a monthly peak demand greater than 1 MW. In addition, sector restrictions would be removed and smaller institutional and commercial businesses would be eligible to participate. As a result of these proposals, over 1,000 new consumers are expected to be eligible for the ICI program.

New Rate Mitigation Initiatives – Illustrative Bill Impacts by Electricity Consumer Class

Typical Residential Bill

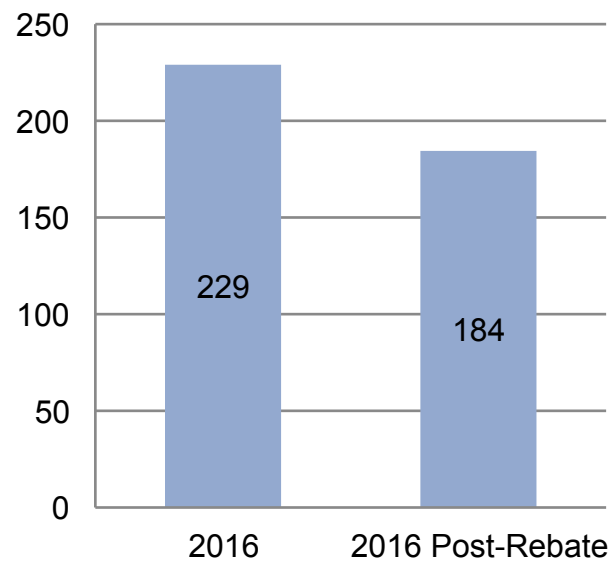
750kWh per month, 8% only



The benefit is a 8% reduction.

Rural (R2) Residential Bill

1,000kWh per month, 8% and RRRP Update

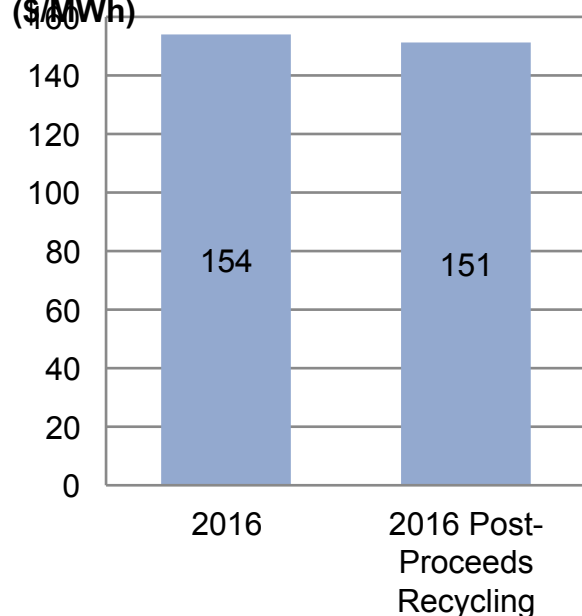


The benefit is a 20% reduction.

Note: The above benefits do not include the cost of ICI expansion and the RRRP update (total impact of \$1.74/MWh).

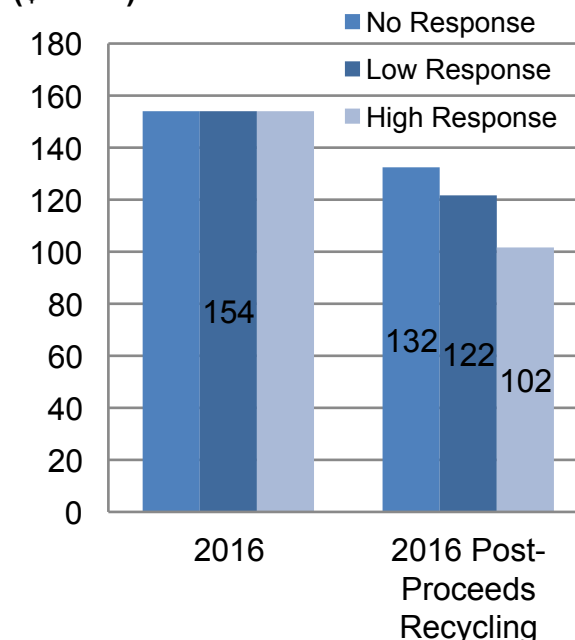
New Rate Mitigation Initiatives – Illustrative Bill Impacts by Electricity Consumer Class (cont'd)

Typical Class B (Commercial) Price (\$/MWh)



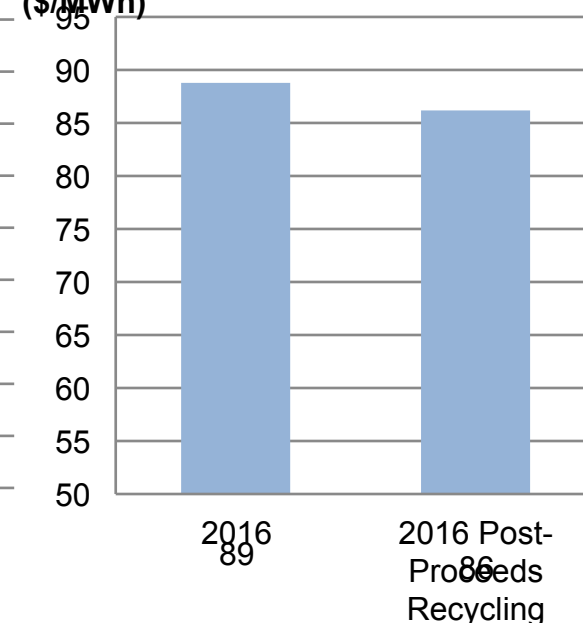
Class B: The benefit is a 2% reduction.

Typical New Class A Price (\$/MWh)



New Class A: The benefit is a reduction of 14% to 34%.

Typical Class A (Industrial) Price (\$/MWh)



Existing Class A: The benefit is a 3% reduction.

Notes: The above benefits do not include the cost of ICI expansion and the RRRP update (total impact of \$1.74/MWh). Proceeds recycling is net of the cost of carbon and represents an estimated average of the proceeds required over the first compliance period (2017-2020).

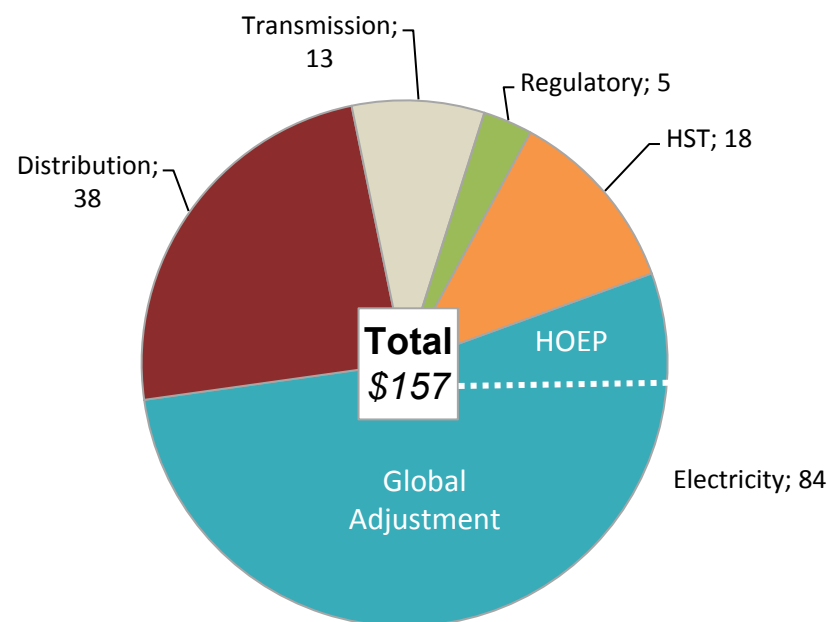
Appendix

Residential Electricity Prices

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

Typical Residential Monthly Bills (\$)

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



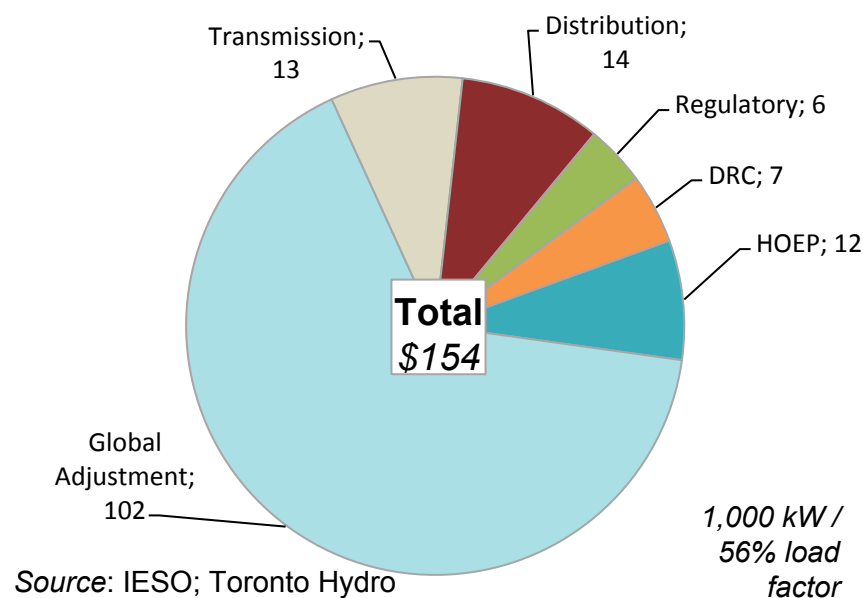
Source: OEB, Toronto Hydro

Commercial Electricity Prices

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

Typical Commercial Price (\$/MWh)

YTD June 2016 (Non-RPP Class B)



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

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

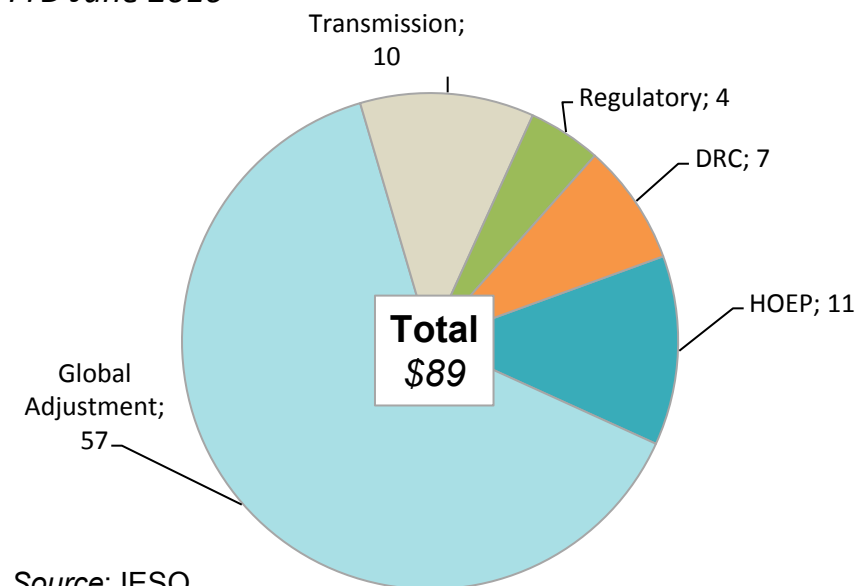
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Industrial Electricity Prices

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

Typical Large Industrial Price (\$/MWh)

YTD June 2016



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

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

Large Renewable Procurement NTD: Moved to appendix.

- Launched in 2014, the competitive Large Renewable Procurement (LRP) process replaced the Large Feed-in Tariff program for future renewable energy projects generally larger than 500 kilowatts.
- The LRP process was designed to strike a balance between early community engagement and achieving value for ratepayers. Developers were required to take local needs and considerations into account before contracts were offered.
- LRP involved a two-stage process:
 1. An initial Request for Qualifications (RFQ) to qualify applicants
 2. Followed by a Request for Proposals (RFP) to evaluate proposed projects.
- The LRP I RFQ was open for submissions from July 14, 2014 until September 4, 2014, resulting in 42 qualified applicants. The LRP I RFP submission window was open from March 10, 2015 to September 1, 2015, with a total of 103 proposals submitted.
- On March 10, 2016, the IESO offered 16 contracts, representing 454.9 MW of renewable energy capacity, to successful LRP I proponents.
 - Of the 16 LRP I. projects that received contracts, more than 80% include participation from one or more Indigenous communities, including 5 projects with more than 50 percent Indigenous participation.
- The LRP I results include:
 - 5 wind contracts (299.5 MW), with a weighted average price of 8.59 cents/kWh
 - 7 solar contracts (139.885 MW), with a weighted average price of 15.67 cents/kWh
 - 4 hydroelectric contracts (15.5 MW), with a weighted average price of 17.59 cents/kWh.
- All 16 LRP I contracts have been executed.
 - 75% of LRP I projects have support from local municipalities.
 - More than 60% of projects have support from abutting landowners.
 - 15 Indigenous communities are participating in LRP I projects

LRP II Suspension

NTD: Moved to appendix.

- On September 27, 2016, the Minister directed the Independent Electricity System Operator (IESO) to suspend the second phase of the Large Renewable Procurement (LRP II) process.
- The IESO provided the Ontario Planning Outlook (OPO) to the Ministry on September 1, 2016, which advised that Ontario will benefit from a robust supply of electricity, from one of the cleanest and most reliable grids in North America, over the coming decade to meet projected energy demand.
- Given this strong energy position, a large amount of additional power is not needed at this time. It was therefore decided to suspend LRP II, along with the Energy-from-Waste (EFW) Standard Offer Program, halting procurement of over 1,000 MW of new renewable and EFW projects.
- Ontario will honour the renewable contracts that have been signed, including those signed under LRP I.
- This decision will maintain system reliability while saving up to \$3.8 billion in electricity system costs relative to the 2013 LTEP forecast, saving the typical residential electricity consumer an average of approximately \$2.45 per month on their electricity bill.