

Electricity Pricing in Ontario

Draft 1
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CONFIDENTIAL DRAFT

Outline

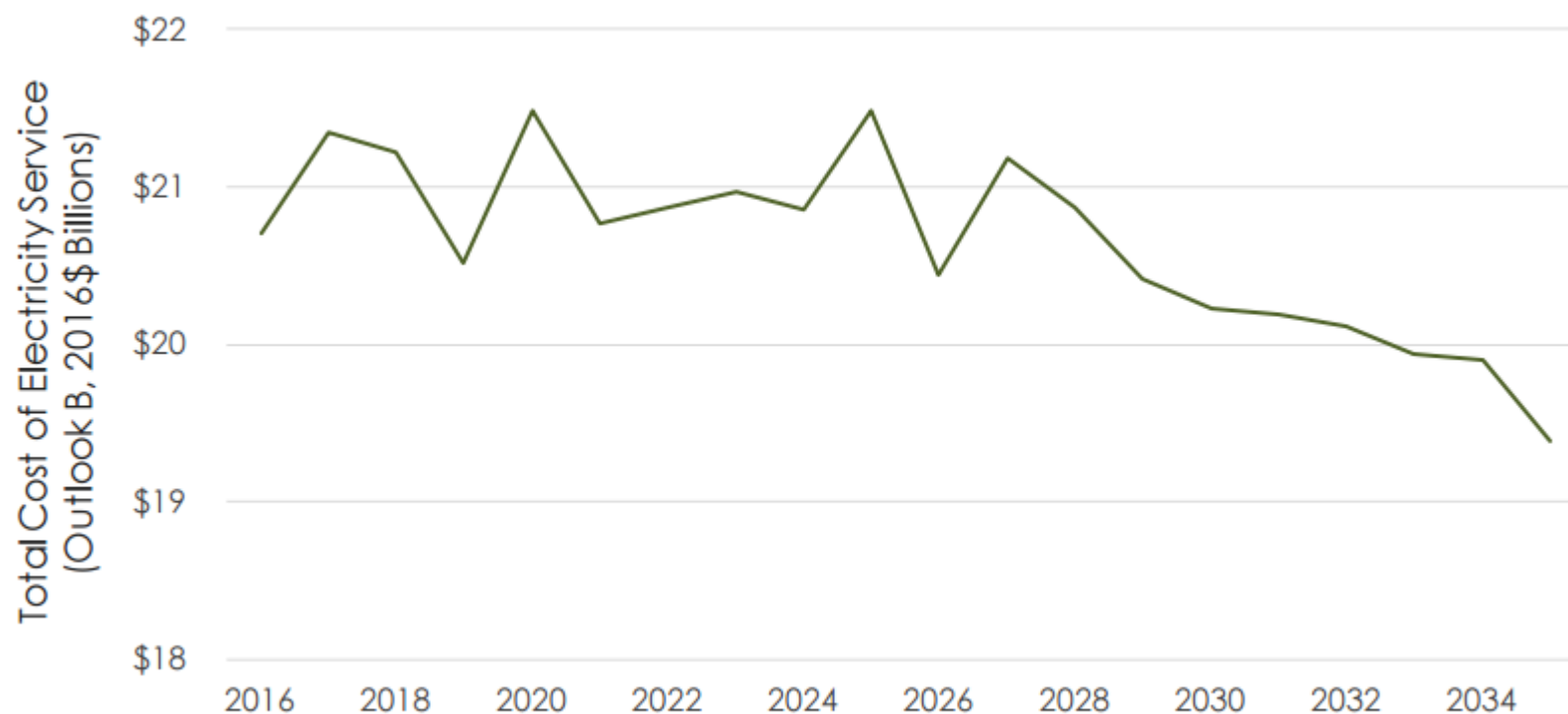
1. Overview of electricity pricing in Ontario
2. Total system cost breakdown
 - I. Residential cost
 - II. Industrial cost
3. Generation costs
4. Transmission, distribution, and other system costs

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.
- 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.

Total System Cost Breakdown

Projected Cost of Electricity Service 2016-2034



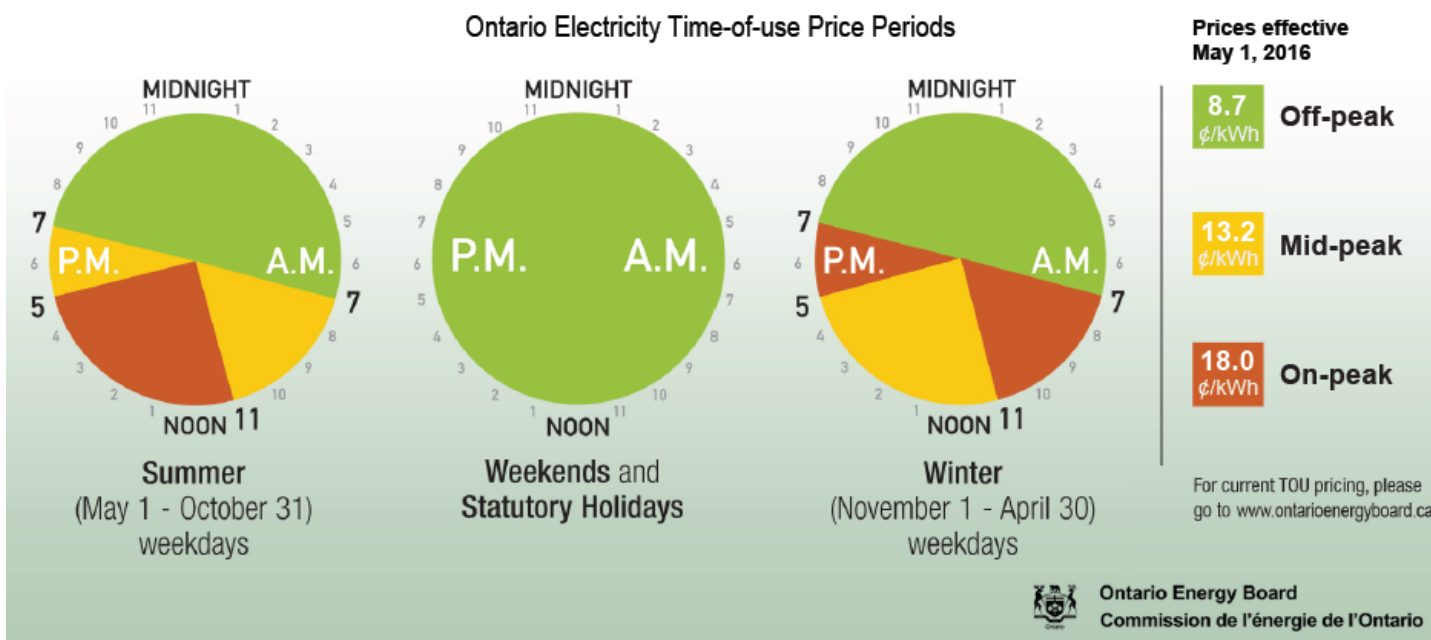
Residential Bill Components

<i>Component</i>	<i>Sub-components</i>	<i>Notes</i>	<i>Monthly Cost for a Typical RPP TOU consumer in Toronto (May 1, 2016)</i>
<i>Electricity</i>	Hourly Ontario Energy Price (HOEP) + Global Adjustment (GA)	The Electricity line reflects the cost of generation and conservation initiatives in Ontario. HOEP is the hour-by hour market clearing price that reflects the short term cost of producing power. Global Adjustment ensures recovery of long-term generation, conservation and demand management costs.	\$84
<i>Delivery</i>	Transmission + Distribution	Costs to build and maintain the high-voltage transmission grid and distribution lines, towers and poles. A portion of these charges are fixed, while others are variable and increase with the amount of electricity usage.	\$50
<i>Regulatory</i>	IESO fees, rural/remote rate protection	The costs of administering the wholesale electricity system, maintaining the reliability of the provincial grid and providing financial assistance to consumers in rural and remote areas of the province, and low income assistance.	\$5
<i>HST</i>	n/a	Applied at a rate of 13%	\$18
<i>Total:</i>			\$157

Residential and Small Business Consumer Electricity Pricing

Regulated Price Plan (RPP):

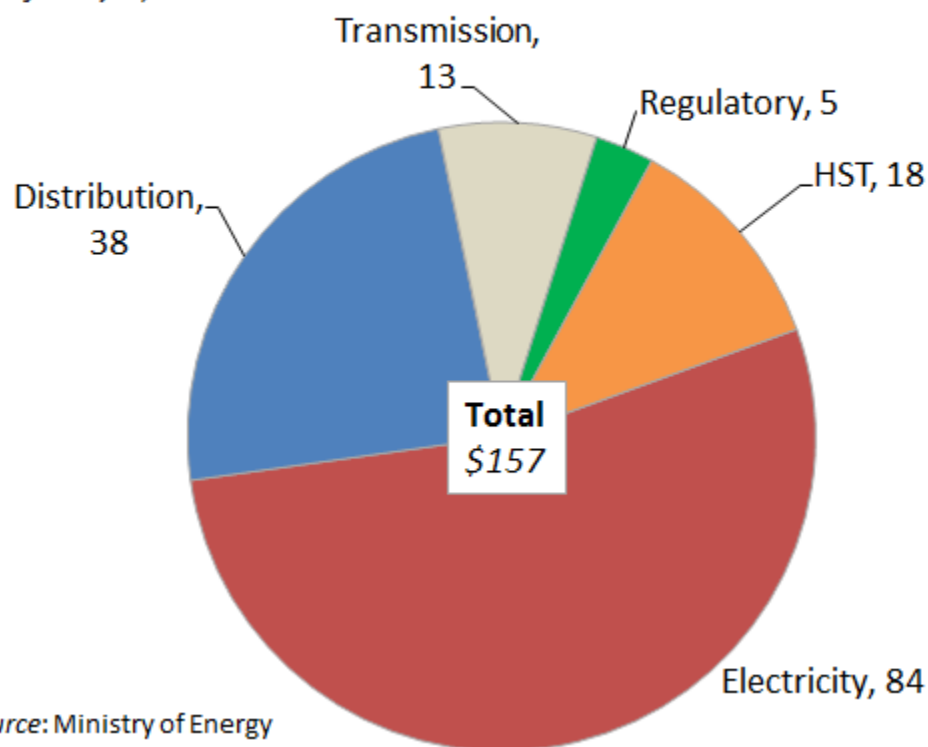
- There are a total of about 4.8 million residential and small business consumers participating in the RPP. About 4.5 million residential and small business consumers pay Time-of-Use (TOU) prices under the RPP. RPP prices are adjusted every six months (in May and November) by the Ontario Energy Board based on projected supply cost over the next 12 months and true-up to actual costs incurred to date.
- TOU prices are intended to provide an incentive to consumers to shift consumption away from high demand periods when the cost to meet province-wide demand is higher.



Typical Residential Bill

Typical Residential Monthly Bills (\$)

As of May 1, 2016



Source: Ministry of Energy

Note: Based on Toronto Hydro delivery rates.

*Delivery charges vary across Ontario.

- For RPP consumers, the electricity charge accounts for about half of the bill.
- Delivery – transmission and distribution – are another 30%.*
- A typical residential consumer uses about 9,000 kWh per year, or 750 kWh per month.

Industrial Bill Components

Component	Notes	2015 Average
Electricity	Industrial users pay HOEP, this is the hour-by hour market clearing price that reflects the short term cost of producing power.	\$22/MWh
Global Adjustment	Large industrial users (over 3 MW** average monthly peak demand) pay GA based on their share of demand during the five highest demand hours of the year. All other industrials pay GA as a flat rate, based on their monthly consumption.	\$42/MWh*
Delivery	Includes transmission and distribution charges where applicable. Grid-connected industrial users pay only for the cost of transmission and avoid distribution costs.	\$12/MWh
Wholesale Market Service Charges	The costs of administering the wholesale electricity system and maintaining the reliability of the provincial grid.	\$4/MWh
Debt Retirement Charge	Electricity distributors collect this charge from consumers on behalf of the Ontario Electricity Financial Corporation. DRC services pays down the stranded debt and liabilities of the former Ontario Hydro.	\$7/MWh
Total:		\$87/MWh***

*Includes Industrial Conservation Initiative benefit based on average for all eligible customers

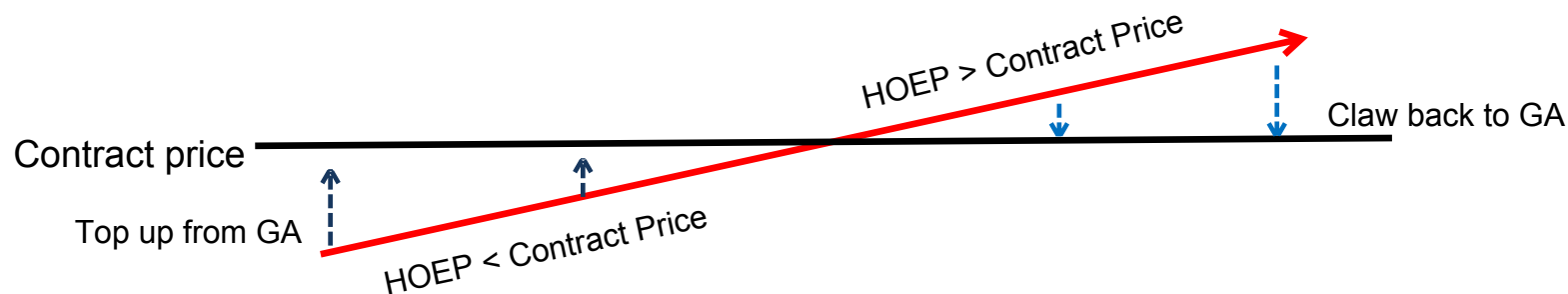
**Eligibility expanded to 3 MW for certain industries, effective 2015

***Sum of components do not add to total due to rounding

Generation Costs

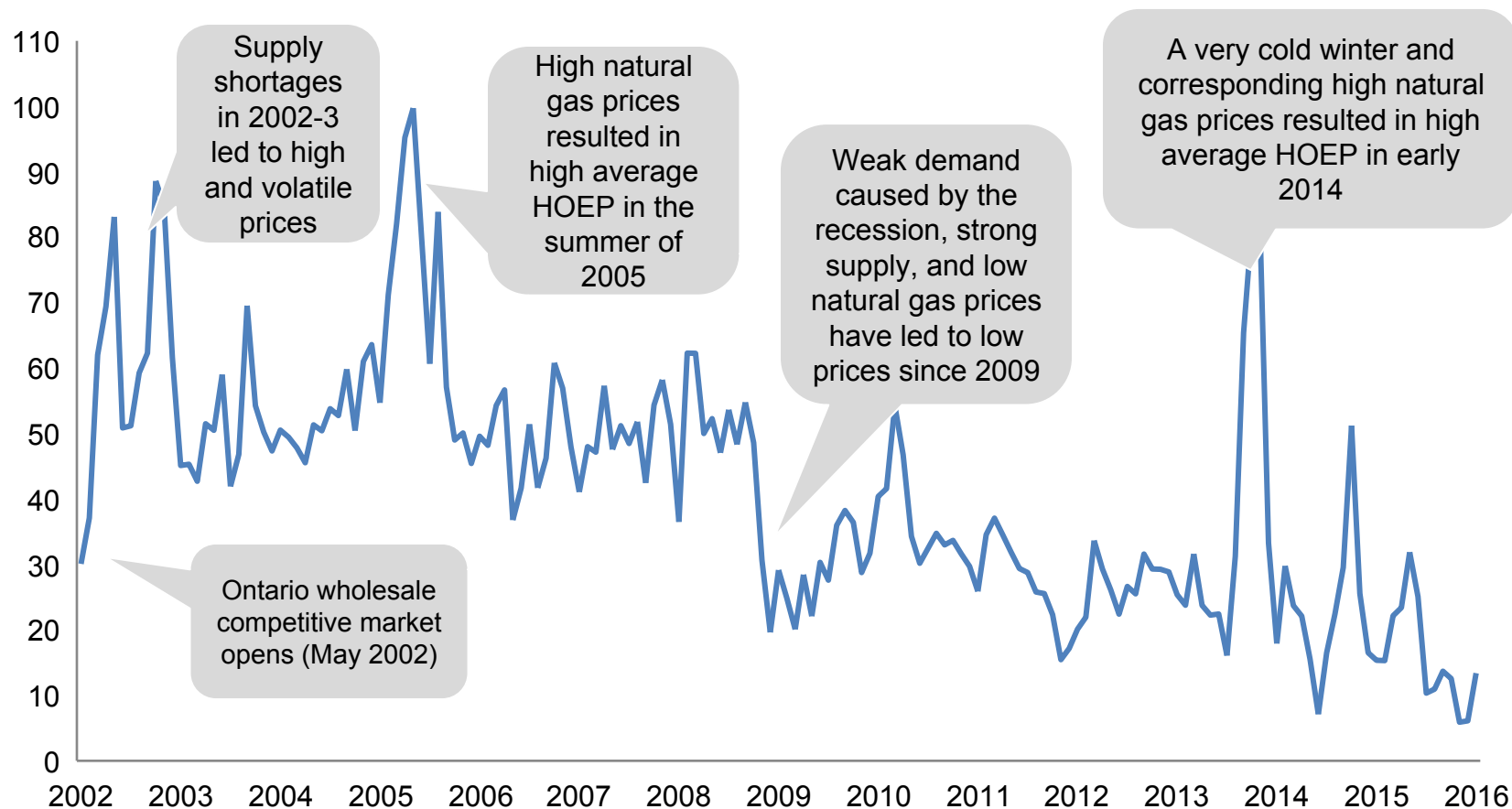
Paying for Generation

- Payments to generators are made up of two components:
 1. Hourly Ontario Energy Price (HOEP)
 - All generators receive HOEP for the electricity they supply. HOEP is determined by supply and demand conditions in the wholesale market. It generally reflects the marginal cost of electricity generation in the province.
 2. Global Adjustment (GA)
 - Contracted/regulated generators receive additional payments to make up the difference between the revenue generated through the wholesale market and their expected contracted/regulated revenue. This difference is recovered from/returned to the Global Adjustment (GA).
 - Virtually all generators in Ontario receive a contracted or regulated rate.
 - Conservation costs and funds such as the Aboriginal, Municipal and Community Fund **are** also paid for from GA.
- HOEP and GA are inversely related; as the market price increases, the GA payments decrease. HOEP is influenced by supply, demand and fuel costs.



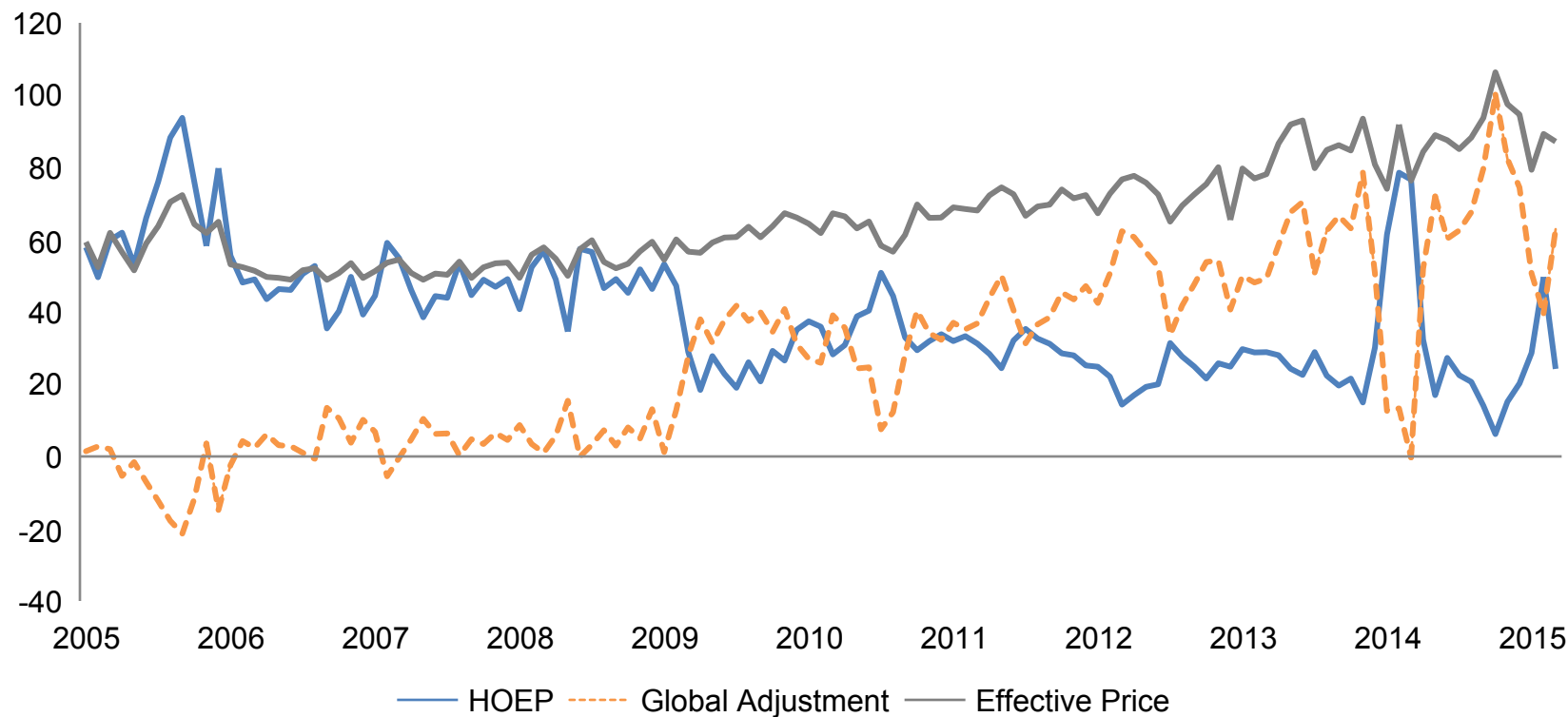
Historical Market Prices

Weighted Monthly Average Hourly Ontario Energy Price (\$/MWh)



Historical Global Adjustment

Commodity Cost of Electricity (\$/MWh)



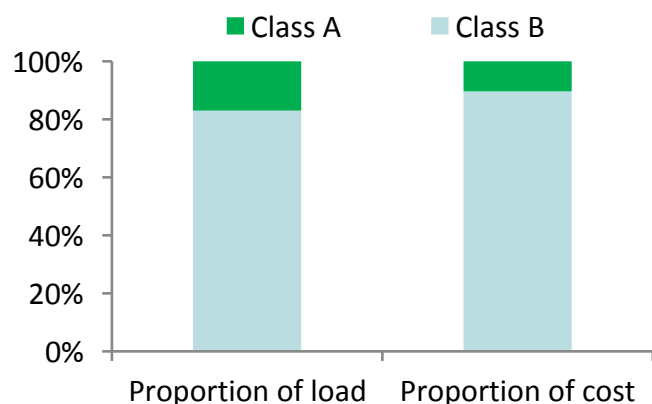
- Global adjustment experienced significant growth beginning in early 2009 as HOEP declined and IESO-contracted energy production increased.

How Global Adjustment is Applied to Consumers

- Global adjustment costs are charged differently depending on the size of the consumer.
- In January 2011, the province introduced the Industrial Conservation Initiative (ICI), establishing two classes of consumers: Class A and Class B.

Customer Type	Size	Current Consumers	GA Treatment
Class A	Monthly peak demand exceeding 1 MW	Nearly 300*	Charged GA on the basis of their contribution to system peak demand during the highest 5 system demand hours of the year.
Class B	All other consumers	About 5 million	Charged GA as a flat rate applied to their consumption.

*Following the September 15, 2016 announcement of the proposed ICI expansion, government forecasts over 1,000 additional businesses will be eligible to participate as Class A consumers.



- Class A is currently reserved for customers with monthly average peak demands greater than 3 MW.
- With the 2014 expansion of ICI, in July 2015, Class A includes consumers with monthly average peak demands greater than 3 MW in certain industries.**
- On September 15, 2016, the government proposed to reduce the Class A threshold to 1 MW, down from the current threshold of 3 MW. Sector restrictions would also be removed and smaller institutional and commercial businesses would be eligible to participate.

**3-5 MW consumers in the manufacturing, mining, refrigerated warehousing, data processing and greenhouse sectors

Other System Costs

Wholesale Market Costs

- Customers cover the cost of operating and administering the electricity system in the form of regulatory charges on the electricity bill.
- The wholesale market service charge covers the cost of operating the wholesale electricity market and maintaining the reliability of the power grid, including administration costs of the Independent Electricity System Operator (IESO), as well as costs associated with connecting renewable generation.
- Over the 2015 to 2032 period, wholesale market costs are expected to average approximately \$880 million (\$2015) per year. On a typical residential bill, this represents an average monthly charge of approximately \$5/month.

The Debt Retirement Charge (DRC)

- The DRC is a consumption based charge of 0.7 cents/kWh, as set by the Ministry of Finance. All DRC revenue goes to the Ontario Electricity Financial Corporation (OEFC) to service and pay down the residual stranded debt and liabilities of the former Ontario Hydro.
- To help ease pressure on residential ratepayers, the government removed the cost of the DRC from residential electricity bills as of January 1, 2016. This will save a typical residential electricity ratepayer that uses 750 kWh per month about \$65 per year.
- Bill 144, the Budget Measures Act 2015, sets a fixed date for removing the DRC from commercial, industrial and other non-residential electricity users on April 1, 2018, nine months earlier than previously estimated.

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 25 per cent 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 **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, the Ontario government 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 windor 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

- 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 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.