Ontario

MINISTRY OF **ENERGY**

Electricity Pricing in Ontario

June 14, 2016

CONFIDENTIAL

Outline

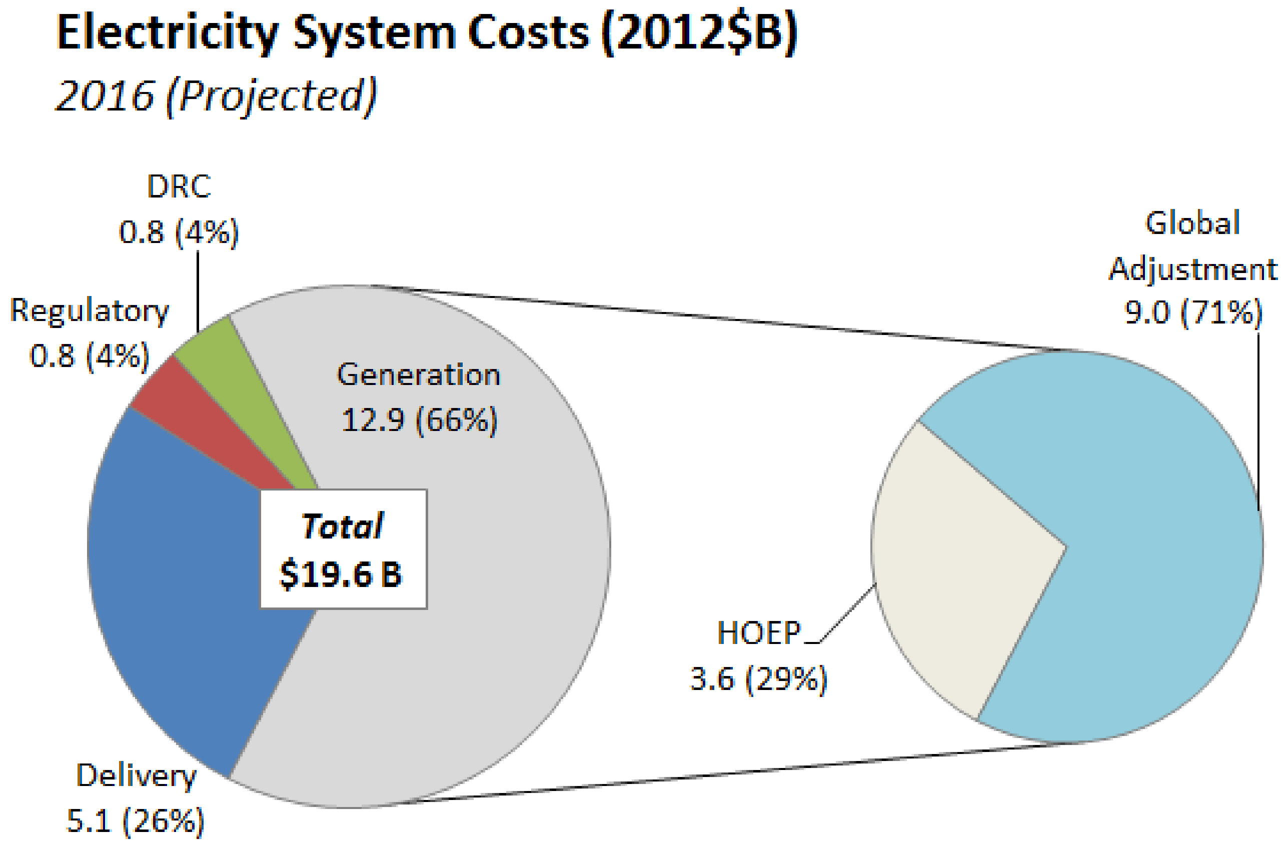
1. Overview of electricity pricing in Ontario
2. Total system cost breakdown
    I. Residential cost
    II. Industrial cost
3. Generation costs
4. Transmission, distribution, and other system costs

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 in 2016



Source: 2013 Long Term Energy Plan

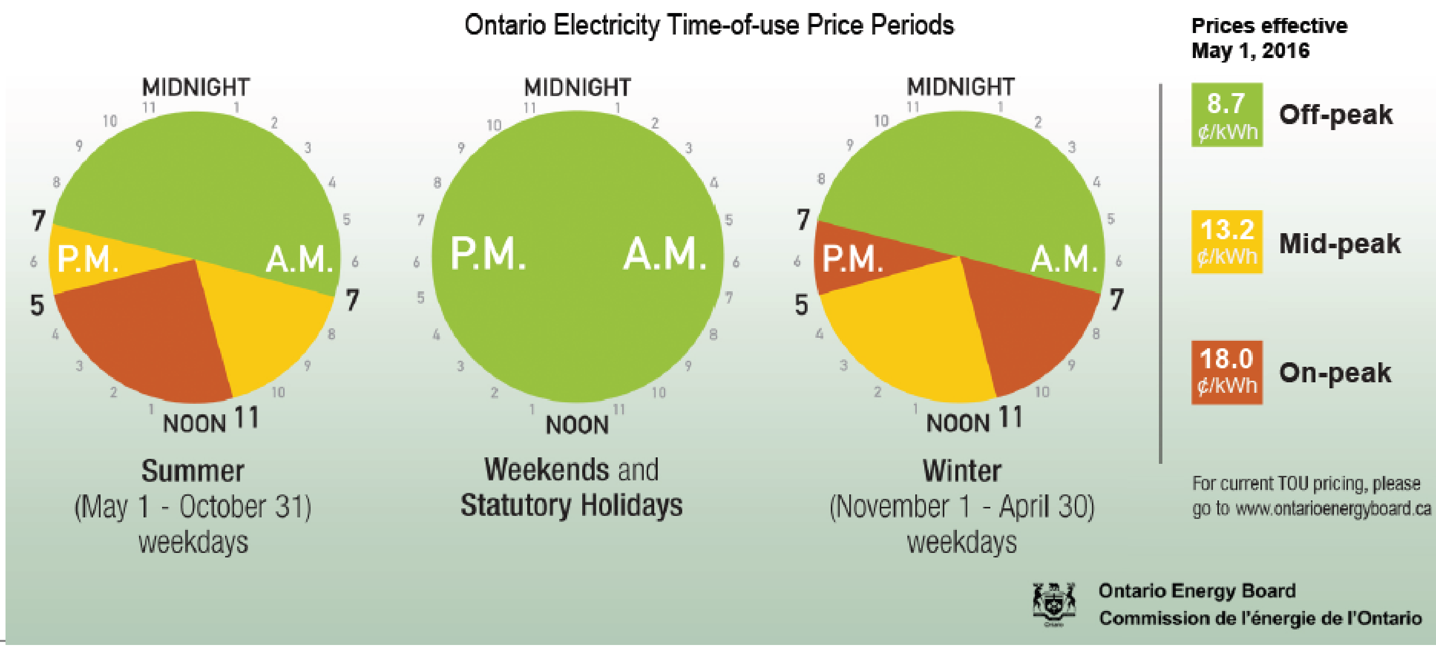
Residential Bill Components

Component	Subcomponents	Notes
Electricity	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.
Delivery	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.
Regulatory	IESO fees, rural/remote rate protection	The costs of administering the wholesale electricity system and maintaining the reliability of the provincial grid.
HST	n/a	Applied at a rate of 13%.

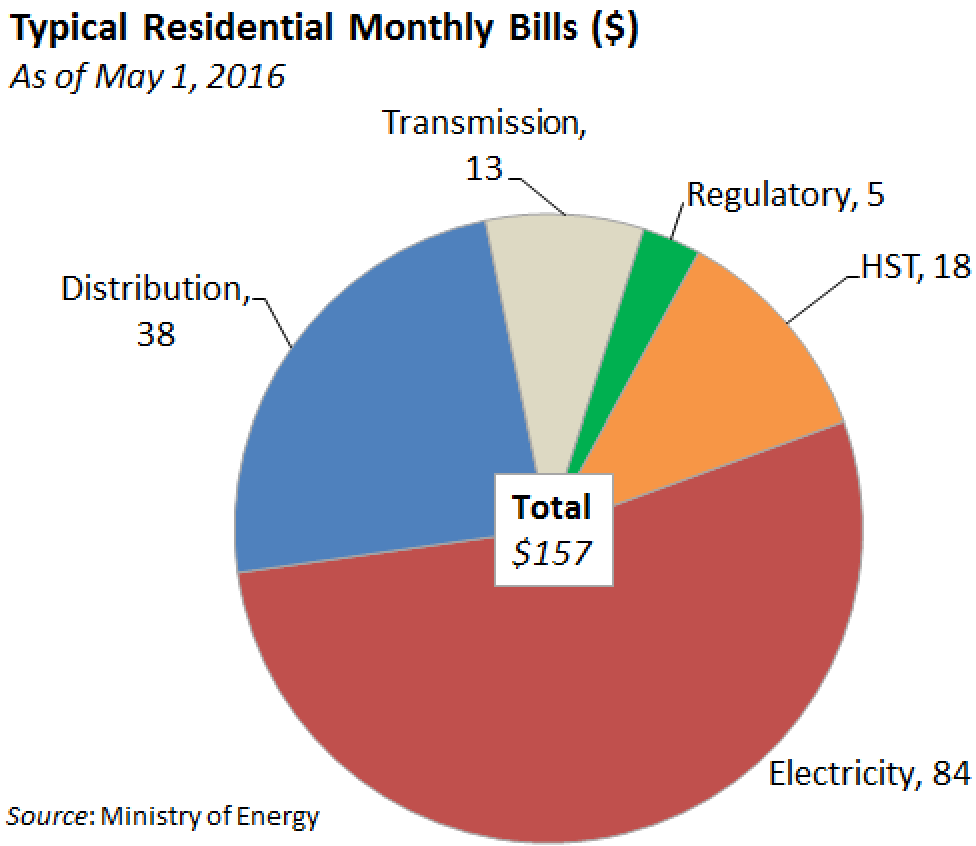
Residential and Small Business Consumer Electricity Pricing

Regulated Price Plan (RPP):

- There are a total of about 4.8 million residential and small business consumers participating in the RPP. About 4.6 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 the 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



- 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****

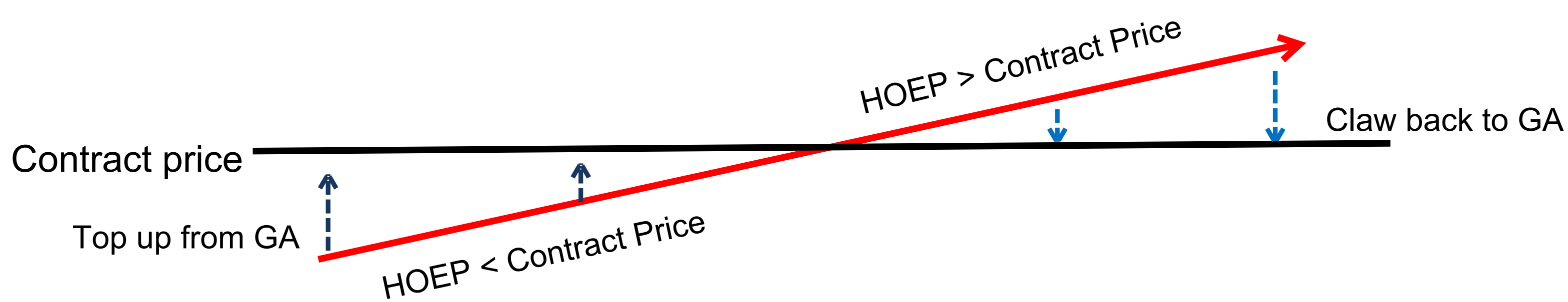
**Includes Industrial Conservation Initiative benefit based on average for all eligible customers*
***Eligibility expanded to 3 MW for certain industries, effective 2015*

Generation Costs

Paying for Generation

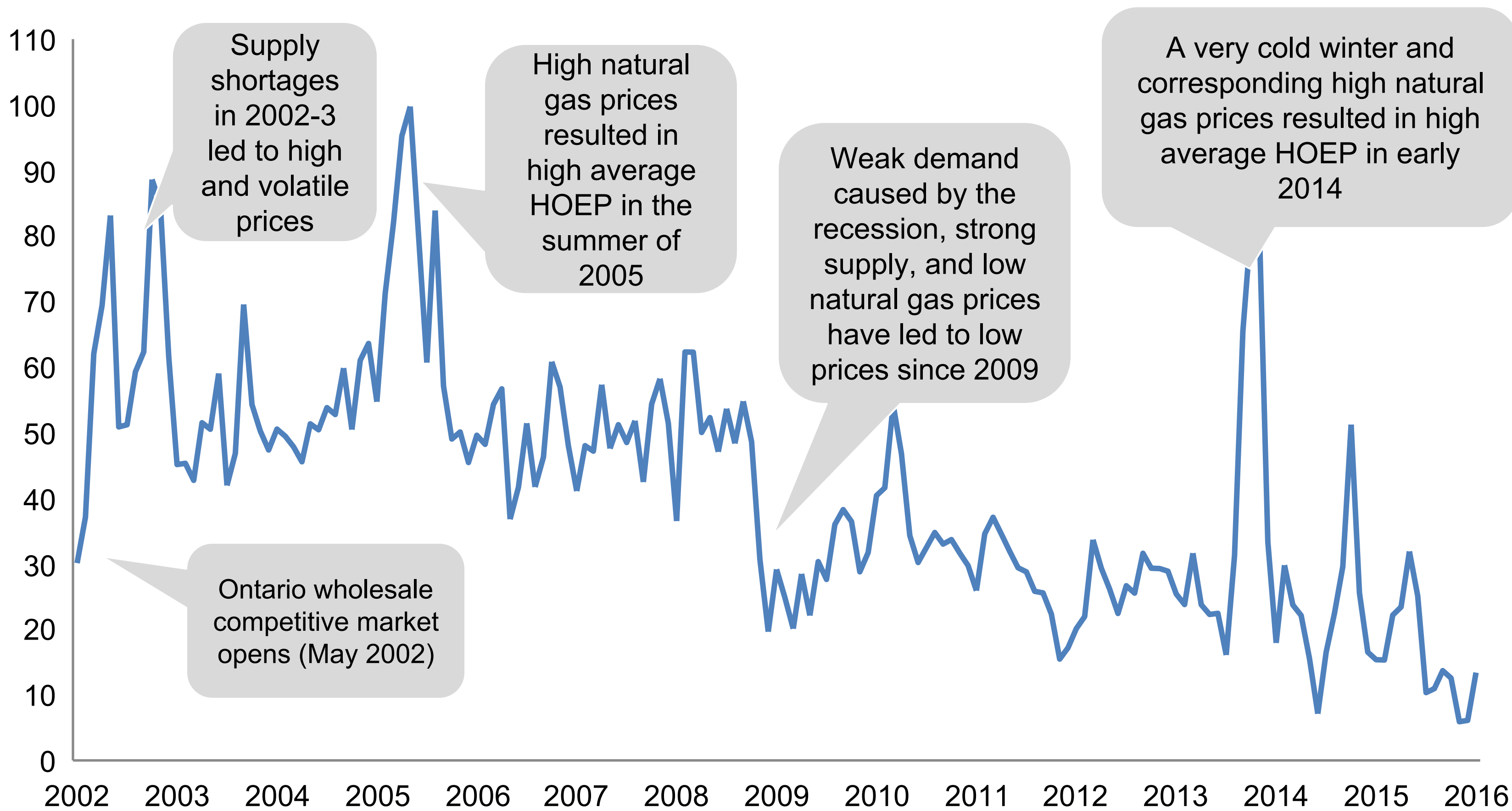
- Payments to generators are made up of two components:
  1. Hourly Ontario Energy Price (HOEP)
     - All generators receive HOEP for the electricity they supply. HOEP is determined by supply and demand conditions in the wholesale market. It generally reflects the marginal cost of electricity generation 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, 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

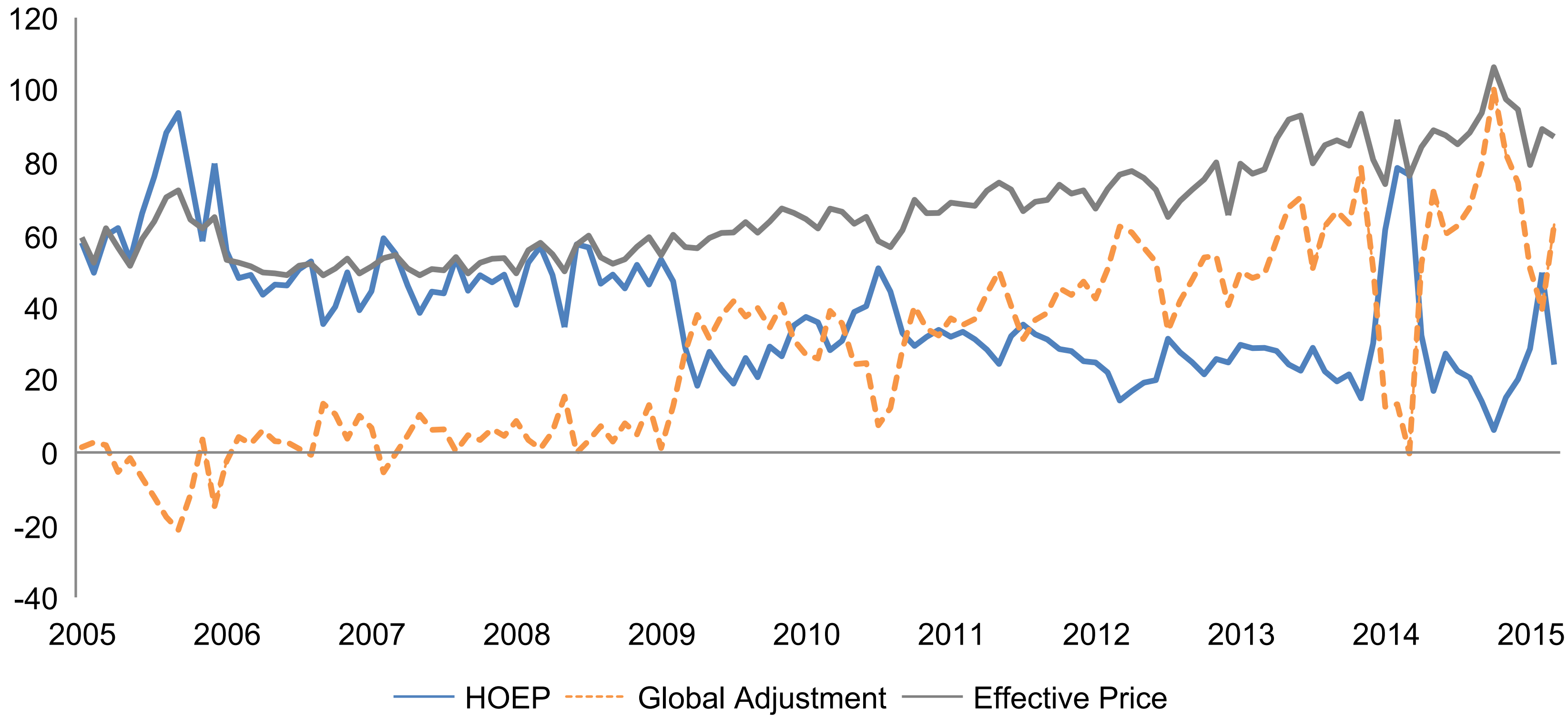
Weighted Monthly Average Hourly Ontario Energy Price ($/MWh)



Source: IESO
Note: Each year starts in May

Historical Global Adjustment

Commodity Cost of Electricity ($/MWh)



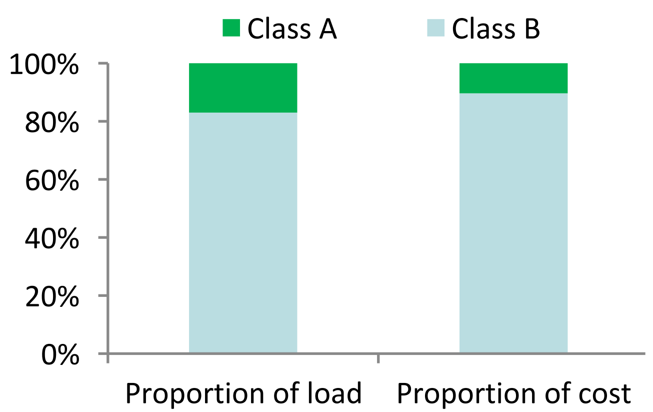
- Global adjustment experienced significant growth beginning in early 2009 as HOEP declined and IESO-contracted energy production increased.

Source: IESO

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 3 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.



- 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.*

* 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.
- On December 31, 2015, to help ease pressure on residential ratepayers, the government removed the cost of the DRC from residential electricity bills.