MINISTRY OF
ENERGY

# Electricity Pricing in Ontario

Foundation Briefing

January 2018

# Context

- Electricity pricing broadly reflects the cost to generate electricity and deliver it to the consumer. This cost includes short term items such as fuel for generators and longer term costs such as the capital cost of generators.
  - 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.

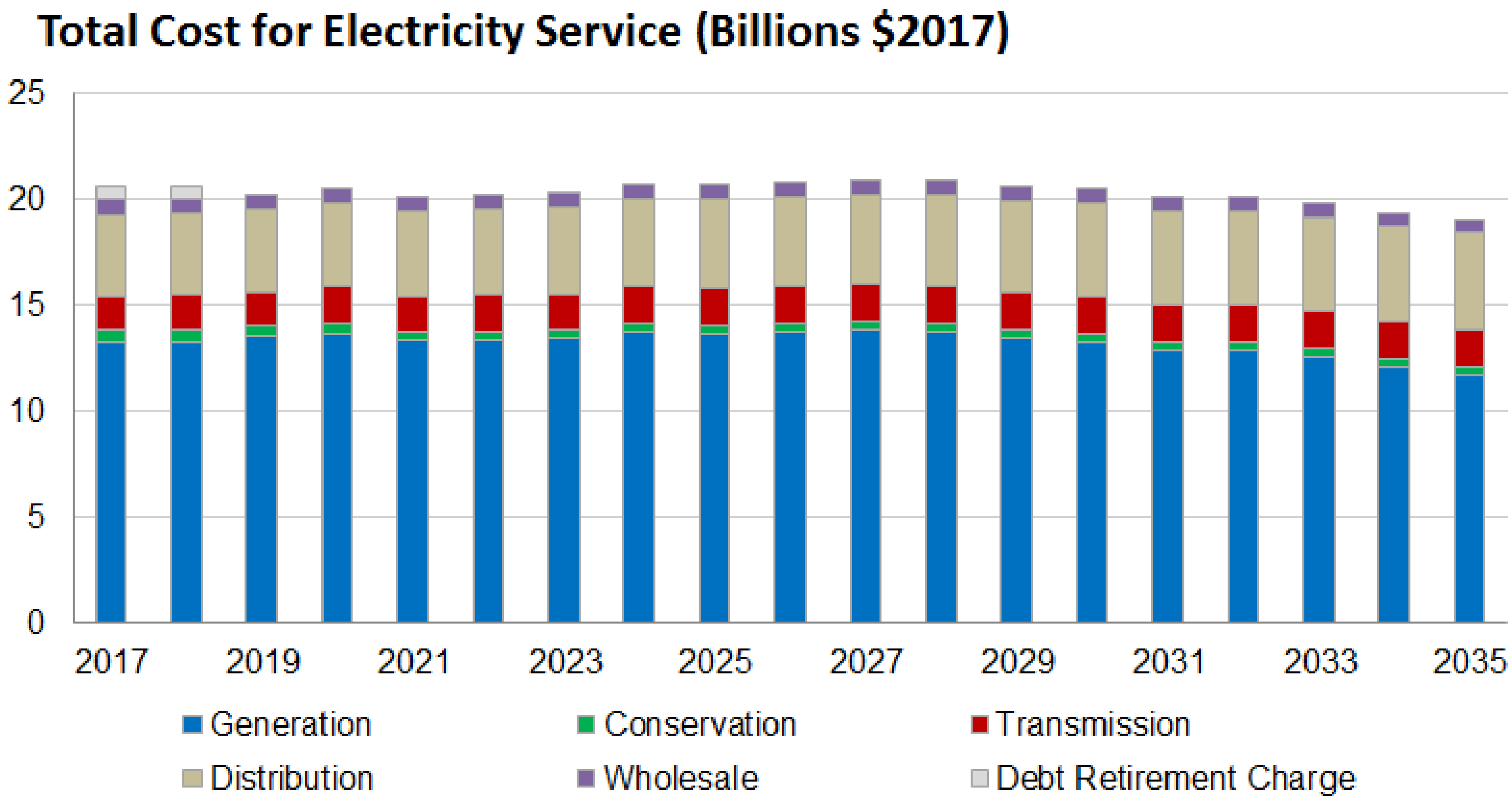
- For the past several years, the cost of electricity service has increased at a faster pace than the consumer price index as significant costs have been incurred to update generation, transmission and distribution infrastructure and meet the Province's environmental goals.
  - As of January 1, 2017, the *Ontario Rebate for Electricity Consumers Act, 2016*, provides an 8 per cent rebate equivalent to the provincial portion of the Harmonized Sales Tax (HST) to eligible consumers (i.e., residential, small business and farms).
  - As of July 1, 2017, the *Fair Hydro Act , 2017* has reduced electricity bills by 25 per cent, inclusive of the 8 per cent, for eligible consumers (i.e., residential, small business and farms)

- The presentation provides an overview of electricity pricing in Ontario, including details on:
  1. Total System Cost Breakdown (i.e., costs for residential and industrial consumers);
  2. Generation Costs and Other System Costs; and
  3. Overview of Existing Rate Mitigation Programs (i.e., include Ontario's Fair Hydro Plan).

**Note**: The 2017 Long-Term Energy Plan (2017 LTEP) is used throughout this presentation for forecast data.

# 1. Total System Cost Breakdown

# Projected Cost of Electricity Service 2017-2035




*Source*: 2017 LTEP modules

# Typical Residential Consumer – Bill Components

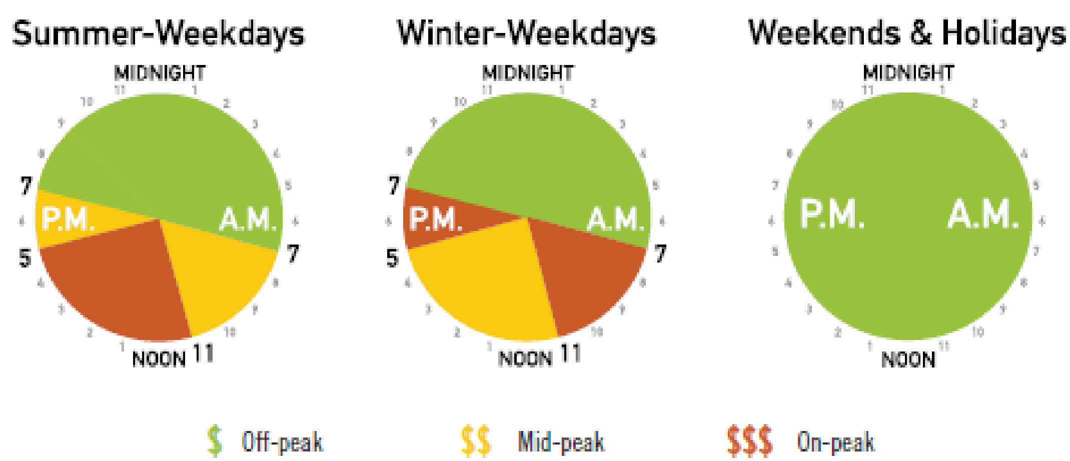
| *Component* | *Sub-components* | *Notes* | *Monthly Cost for a Typical RPP TOU Consumer in Toronto (Jan 1, 2018)* |
|---|---|---|---|
| ***Electricity*** | Hourly Ontario Energy Price (HOEP) + Global Adjustment (GA) | The Electricity line reflects the cost of generation and conservation initiatives in Ontario.<br>HOEP is the hour-by hour market clearing price that reflects the short term cost of producing power.<br>GA ensures recovery of long-term generation, conservation and demand management costs. | $62 |
| ***Delivery*** | Transmission + Distribution | Costs to build and maintain the high-voltage transmission grid and distribution lines, towers and poles. The Delivery component includes distribution system losses.<br>A portion of these charges are fixed, while others are variable and increase with the amount of electricity usage. | $52 |
| ***Regulatory*** | Independent Electricity System Operator (IESO) fees, ancillary services and losses. | The costs of administering the wholesale electricity system, transmission system losses and maintaining the reliability of the provincial grid.<br>**Note:** As part of Ontario's Fair Hydro Plan, the government moved the cost of the majority of electricity support programs to the tax base in 2017. | $3 |
| ***HST*** | n/a | Applied at a rate of 13%. | $15 |
| ***8% Rebate*** | n/a | Ontario Rebate for Electricity Consumers (OREC) is equal to the provincial portion of HST. | $9 |
| | | ***Total:*** | **$123** |

Source: OEB – Toronto Hydro rate order

# Residential and Small Business Consumers – Electricity Pricing

**Regulated Price Plan (RPP):**

- There are a total of about five million residential and small business consumers participating in the RPP. Most residential and small business consumers pay Time-of-Use (TOU) prices under the Ontario Energy Board's (OEB) ~~the~~ Regulated Price Plan (RPP).
  - RPP prices are typically adjusted every six months (in May and November) by the OEB based on projected supply cost over the next 12 months, true-up to actual costs incurred to date and OFHP~~.~~
- On July 1, 2017, the OEB adjusted RPP prices to reflect the full benefit of OFHP that lowered residential bills by 25 per cent.
- 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.



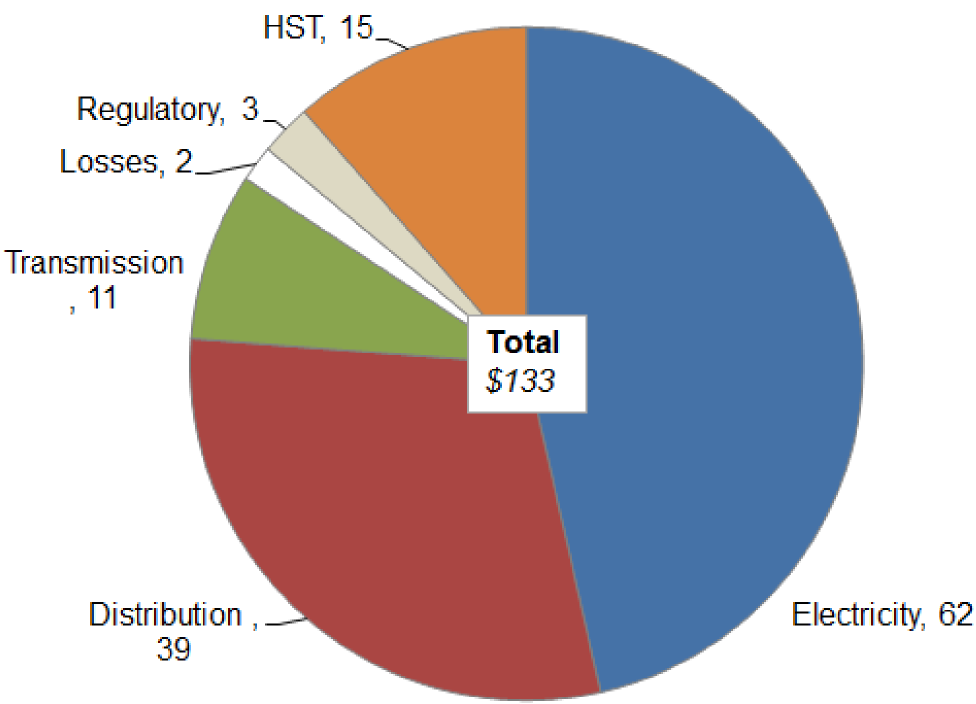

**RPP Time-of-use prices effective November 1, 2017**

| Time-of-use RPP Prices – ¢/kWh | Off-Peak | Mid-Peak | On-Peak | Average Price |
|---|---|---|---|---|
| Price (¢) | 6.5 | 9.5 | 13.2 | 8.2 |

Source: Ontario Energy Report (OER)

# Typical Residential Consumer Bill

**Typical Residential Bill**
*750 kWh-monthly consumption*




- For RPP consumers, the electricity charge accounts for about half of the bill.
- Delivery – transmission and distribution – are another 30 per cent.*
- A typical residential consumer uses about 9,000 kWh per year, or 750 kWh per month.
- The 8% OREC rebate reduces the bill by $9.30 to about $123.

Source: Toronto Hydro

**Note:** Based on Toronto Hydro delivery rates as of January 1, 2018. *Delivery charges vary across Ontario.

# Industrial Consumer – Bill Components

| Component | Notes | 20167 Average |
|---|---|---|
| ***Electricity*** | Industrial users pay HOEP, this is the hour-by hour market clearing price that reflects the short term cost of producing power. | $14/MWh |
| ***Global Adjustment (GA)*** | Large users pay GA based on their share of demand during the five highest demand hours of the year.<br><br>**Note:** Consumers with average monthly maximum demand greater than 1 megawatt (MW) and manufacturers between 500kW and 1 MW can opt into the Industrial Conservation Initiative (ICI). | $50/MWh* |
| ***Delivery*** | Large grid-connected industrial users pay only for the cost of transmission and avoid distribution costs. | $10/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 (DRC)*** | The IESO collects this charge from consumers on behalf of the Ontario Electricity Financial Corporation (OEFC). DRC services pays down the stranded debt and liabilities of the former Ontario Hydro. | $7/MWh |
| ***Total:*** | | ***$85/MWh***** |

Source: IESO Monthly Market Report November 2017

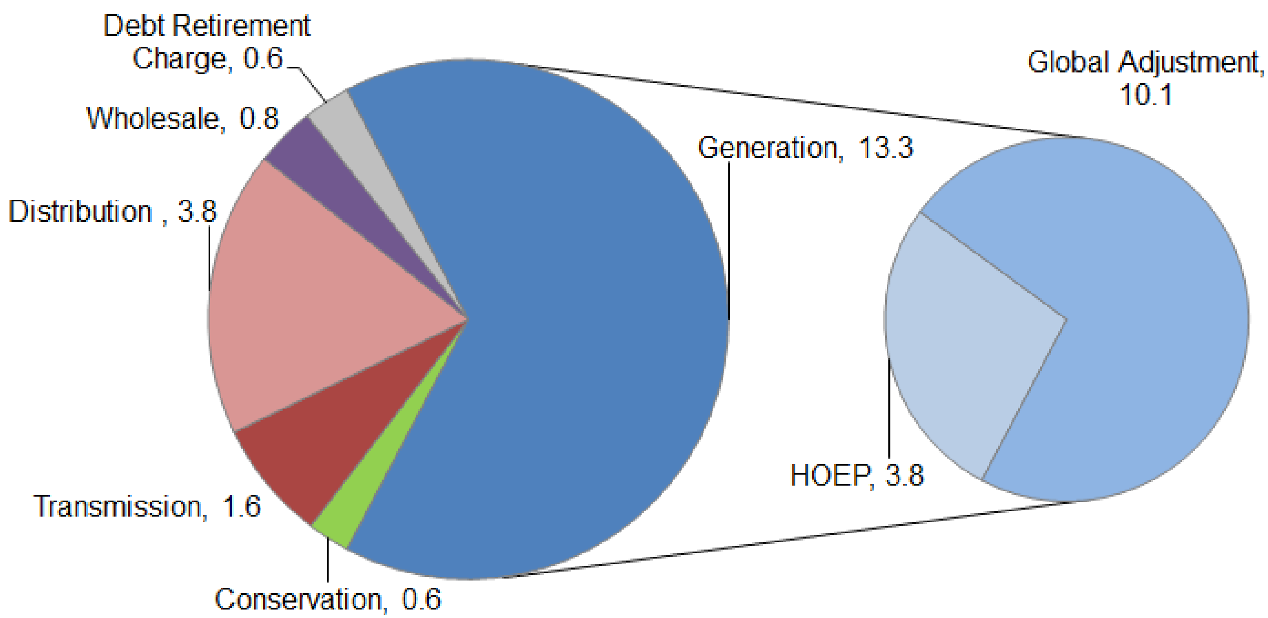
**Notes:** *Includes ICI benefit based on average for all eligible customers.**Sum of components may not add to total due to rounding

# 2. Generation Costs and Other System Costs

# Ontario's Electricity System Costs

- In 2017, generation accounted for about two-thirds of total electricity system costs. Total system costs in 2017 were $21 billion.

**2017 Electricity System Cost**
*$2017 billion*




*Source*: 2017 LTEP Modules

# Paying for Generation

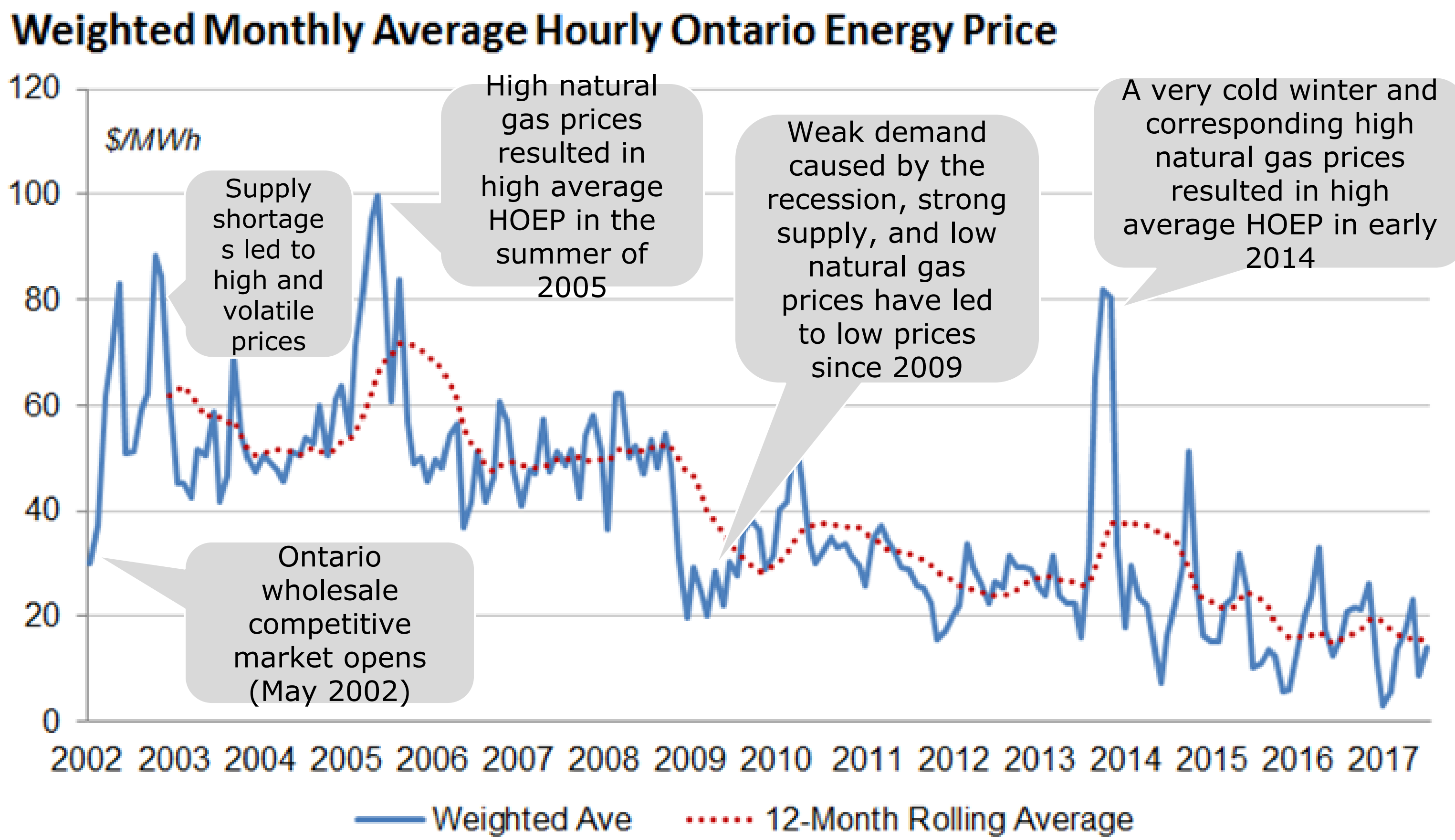
- Payments to generators are made up of two components:

  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

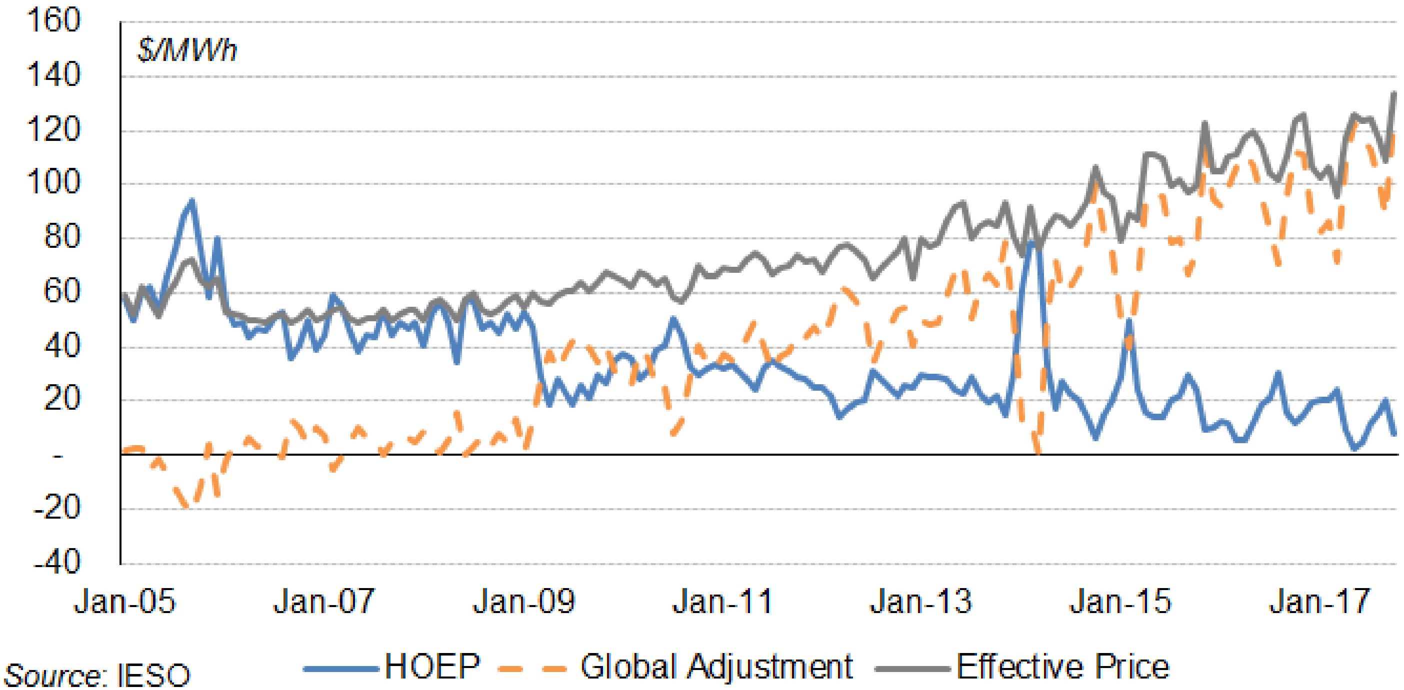



Source: IESO

# Historical Global Adjustment

- Global Adjustment (GA) experienced significant growth beginning in early 2009 as HOEP declined and Independent Electricity System Operator (IESO) contracted energy production increased.

**Commodity Cost of Electricity**
*2005-2017*



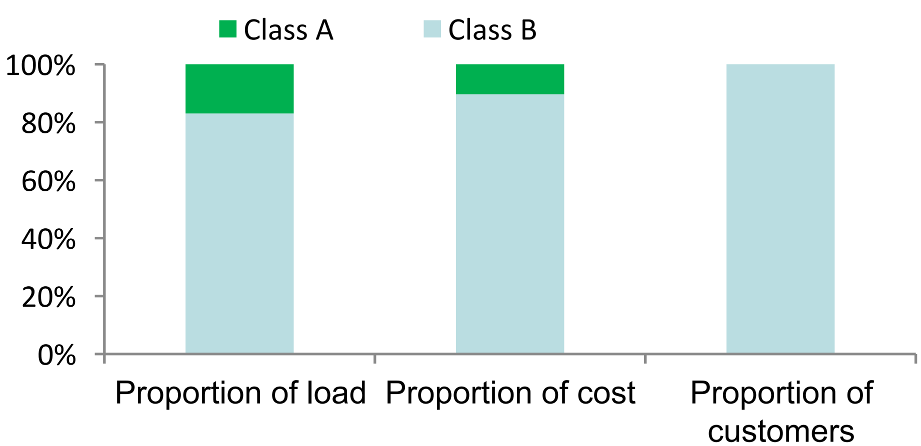

*Source:* IESO

# How Global Adjustment is Applied to Consumers

- Global Adjustment (GA) 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 (500 kW for manufacturers) | About 1,100 | 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.* |

***Note:** For these consumers, GA charges reflect GA Refinancing under OFHP.




- Class A is currently reserved for customers with monthly average peak demands greater than 1 MW and manufacturers between 500 kW and 1 MW.

# 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 2017 to 2035 period, wholesale market costs are expected to average approximately $677 million ($2017) per year. On a typical residential bill, this represents an average monthly charge of approximately $3/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.

# 3. Overview of Existing Rate Mitigation Programs

# Residential Rate Mitigation – Existing Programs

- Effective January 1, 2017, the government introduced an **8% rebate,** an amount equivalent to the provincial HST. The rebate will save the average household approximately $11 per month, or $130 per year.

- 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 $1,023 in tax relief for 2017, and seniors can receive up to $1,165.

- 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 $148 for 2017 and families (including single parents) can receive up to $227.

- 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 **Save On Energy 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 wind or air-conditioners. Eligible participants in electricity heated homes can also receive a programmable thermostat, weather-stripping services and insulation services.  In August 2017 the government directed IESO to centrally design, fund and deliver an enhanced Home Assistance Program. The enhanced program is expected to be launched in early 2018.

# Residential Rate Mitigation – Existing Programs (cont'd)

- **Save on Energy for Home** programs provide incentives and rebates for a variety of measures to help households become more energy efficient (e.g. Heating and Cooling Initiative, Instant Discounts).

- 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.

- 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.

- Programs offered through the **Green Ontario Fund**, such as GreenON Installations and GreenON Rebates, help households increase the efficiency of their homes and manage their energy costs.

# Industrial Rate Mitigation – Existing Programs

- The **Industrial Conservation Initiative (ICI)** lowers costs for eligible large electricity consumers (i.e., those with monthly peak demand exceeding 1 MW, and manufacturers between 500 kW and 1 MW) that reduce consumption during peak periods. ICI consumers can reduce their electricity bills by up to one-third. The program benefits companies financially and reduces system costs by deferring the need for new peaking generation.

- The **Industrial Electricity Incentive (IEI)**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 (NIERP)** 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 (IAP)** 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. Distribution-connected sites of transmission-connected customers can also elect to participate in IAP.

- 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 manage their electricity use.

- The IESO holds annual **demand response** auctions which provide availability payments to successful participants that commit to reducing their consumption when called upon to do so.

# Fair Hydro Plan – Rate Mitigation Measures

- As of January 1, 2017, the *Ontario Rebate for Electricity Consumers Act, 2016*, provides an 8 per cent rebate equivalent to the provincial portion of the Harmonized Sales Tax (HST) to eligible consumers (i.e., residential, small business and farms).

- As of July 1, 2017, the *Fair Hydro Act , 2017* has reduced electricity bills by 25 per cent, inclusive of the 8 per cent, for eligible consumers (i.e., residential, small business and farms). The initiative includes a number of measures:
  - **GA Refinancing:** The government passed legislation that refinances a portion of the GA, spreading the cost of electricity investments over a longer period for RPP eligible consumers.
  - **Broadening RRRP:** RRRP is intended to mitigate the higher distribution charges paid by Ontarians living in lower density areas. Broadening the program provides Distribution Rate Protection for the customers of the Local Distribution Companies (LDCs) with some of the highest distribution charges in the province, allowing a total of 800,000 residential consumers to benefit from the program.
  - **Expanding OESP:** OESP provides relief directly on the bills of low income consumers who have applied and meet the eligibility criteria. Changes increase OESP credits by 50 per cent and allow more Ontarians to benefit from the program.
  - **Introducing a new Affordability Fund:** As part of OFHP, the government has establish an Affordability Fund that provides energy efficiency measures to Ontarians who are not eligible for low-income conservation programs, and who to improve the energy efficiency of their homes.
  - **Introducing a First Nations On-Reserve Delivery Credit:** OFHP eliminates the delivery charge for all on-reserve First Nations residential customers. The First Nations Delivery Credit is funded through the tax base to avoid added regulatory charges on the electricity bills of all Ontario ratepayers.
  - **Expanding ICI:** OFHP expanded ICI to include manufacturers between 500kW and 1MW, in addition to the large consumers over 1 MW who are already eligible.
  - **Bending the Cost Curve:** OFHP includes improving sector efficiency and modernizing Ontario's electricity market, working in collaboration with the Independent Electricity System Operator (IESO) and the Ontario Energy Board (OEB).