

INDUSTRIAL ELECTRICITY PRICES

What is the current status of industrial electricity prices in Ontario and how do prices compare to other North American jurisdictions?

SUGGESTED RESPONSE:

- Our government continues to ensure a clean, modern and reliable electricity system for all Ontarians.
- Our energy system is being transformed – we are making needed investments to modernize our electricity system. We chose to replace coal-fired generation with cleaner sources of energy, which is benefiting our environment and the health of Ontarians.
- As we plan for Ontario's electricity needs for the next 20 years, conservation will be the first resource considered, wherever cost effective. Conservation is the cleanest and most cost-effective energy resources, offers customers a way to reduce their electricity bills and reduces the need to build costly new generation, distribution and transmission infrastructure.
- Indicative industrial electricity prices in Ontario are within five percent of the United States average as reported by the U.S. Energy Information Administration.
- According to 2013 LTEP, the typical industrial electricity price is projected to increase on average by 2.7% per year in the five-year period from 2017 to 2021 inclusive, and by 1.4% per year from 2017 to the end of 2032.
- The National Energy Board's *Energy Futures 2016* report projects that industrial electricity prices are expected to increase in most provinces through 2032.

RATE MITIGATION:

- Measures in place to mitigate industrial electricity prices include:
 - Industrial Conservation Initiative (ICI);
 - Industrial Electricity Incentive (IEI);
 - Northern Industrial Electricity Rate Program (NIERP);
 - Industrial Accelerator Program (IAP)
 - SaveONenergy for Business Program; and
 - Demand Response.
- As announced in March 2017, industrial electricity prices are decreasing under the Fair Hydro Plan, due to the funding of support programs (e.g., Rural or Remote Rate Protection, Ontario Electricity Support Program) from provincial revenues.

ICI Expansion

- The Industrial Conservation Initiative (ICI) allows large electricity consumers to lower their electricity costs by reducing their demand during peak hours. Reducing demand during peak hours benefits companies financially and benefits the electricity system by deferring the need for new peaking generation.
- Effective January 2017, more businesses can chose to participate in the ICI. We have lowered the threshold to 1 MW and removed sector restrictions so that more consumers can benefit.
- On March 2, 2017, we also proposed expanding ICI to include smaller manufacturers with peak demand between 500 kW and 1 MW. Final details on timelines will be available once the regulation is approved.

- Newly eligible consumers will be able to opt-in to the ICI program at their discretion.

Industrial Electricity Incentive

- 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.

Northern Industrial Electricity Rate 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.

Industrial Accelerator Program (IAP)

- 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. Participants can receive incentives that will cover up to 70% of eligible project costs.

saveONenergy for Business

- The saveONenergy for Business Program, delivered by local distribution companies, offers a variety of financial incentives to distribution-connected business and industrial customers to increase energy efficiency and save money on their bills.

Demand Response

- The IESO holds annual Demand Response auctions which provide payments to successful participants that commit to reducing their consumption when called upon to do so. Participation in the DR Auction is open to new and existing DR participants in Ontario with peak load greater than 1 MW, including industrial consumers and aggregators.

If asked about the amendment to Bill 144, Budget Measures Act 2015:

- Finance's amendment in Bill 144, Budget Measures Act 2015, sets a fixed date for removing the Debt Retirement Charge (DRC) for commercial, industrial and other non-residential electricity users on April 1, 2018, nine months earlier than previously estimated.
- Ending the DRC on a legislated fixed date provides certainty to commercial, industrial and other users to help them plan their investments more effectively.

BACKGROUND:

Large commercial and large industrial – (i.e., average monthly peak demand greater than 1 MW):

- With the expansion of ICI to 1 MW and the removal of sector restrictions, an estimated 1,300 consumers are eligible to pay GA according to their share of total Ontario demand in the highest demand hours of the year.

Figure 1 – Industrial Bill Components – Year-to-date May 2017

<i>Component</i>	<i>Notes</i>	<i>Year-to-date May 2017 Average</i>
Electricity	Industrial users pay HOEP, this is the hour-by hour market clearing price that reflects the short term cost of producing power.	\$15/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 are charged volumetric GA based on consumption.	\$46/MWh*
Transmission	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.	\$5/MWh
Debt Retirement Charge	IESO collects 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:		\$83/MWh

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

Note: Sum of components may not add to total due to rounding

Figure 2 – Retail Industrial Electricity Prices-- North America (Canadian cents/kWh)

2016 Industrial Electricity Prices (Canadian ¢/kWh)							
Jurisdiction	Cost	Jurisdiction	Cost	Jurisdiction	Cost	Jurisdiction	Cost
1 Manitoba	4.18	17 Kentucky	6.85	33 West Virginia	8.36	49 Florida	9.65
2 Alberta	4.41	18 Tennessee	6.90	34 Ontario	8.57	50 Maine	9.87
3 Quebec	4.90	19 Mississippi	6.95	35 Michigan	8.61	51 Nova Scotia	10.02
4 Newfoundland	4.90	20 New Mexico	7.10	36 Virginia	8.61	52 Maryland	10.12
5 Washington	5.64	21 Arizona	7.22	37 Ohio	8.65	53 Delaware	10.28
6 Oklahoma	5.67	22 New Brunswick	7.25	38 Pennsylvania	8.84	54 Vermont	12.33
7 Montana	5.72	23 South Carolina	7.39	39 Colorado	8.86	55 New Jersey	12.36
8 British Columbia	6.08	24 Oregon	7.39	40 Wyoming	8.91	56 California	13.64
9 Texas	6.17	25 Alabama	7.56	41 North Dakota	9.02	57 New Hampshire	15.81
10 Louisiana	6.18	26 New York	7.63	42 Minnesota	9.05	58 Connecticut	16.49
11 Nevada	6.37	27 North Carolina	7.67	43 PEI	9.12	59 Massachusetts	16.59
12 Iowa	6.44	28 Utah	7.67	44 Indiana	9.13	60 Rhode Island	17.20
13 Canadian Average	6.61	29 Idaho	7.81	45 Wisconsin	9.43	61 Alaska	20.61
14 Georgia	6.64	30 Missouri	7.94	46 Kansas	9.47	62 Hawaii	24.72
15 Saskatchewan	6.71	31 Illinois	8.03	47 Nebraska	9.47		
16 Arkansas	6.75	32 U.S. Average	8.18	48 South Dakota	9.47		

Note: Estimates may differ from actual costs to a consumer based on location, connection, and operational characteristics. Prices exclude taxes and participation in any applicable jurisdictional benefit programs.

The Ontario industrial price is based on April 2016 data and includes the Hourly Ontario Energy Price, Class A Global Adjustment, Debt Retirement Charge, and transmission and regulatory charges.

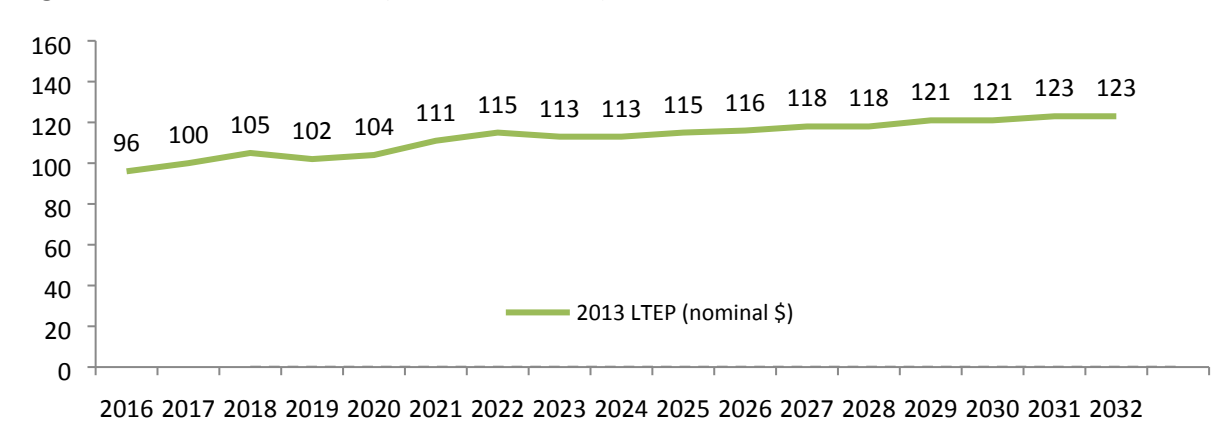
All other Canadian prices are from the Hydro Quebec Rate Comparison for rates effective April 1, 2016 for select local distribution companies servicing specific cities. Where Hydro Quebec reports prices for two cities in a province (e.g. Calgary and Edmonton), an average of the two is used, in provinces where only one city is reported (e.g. Vancouver in BC, Montreal in QC), that one price is used to represent the province for indicative comparison purposes.

American jurisdictions reflect April 2016 data from the US Energy Information Administration's survey of approximately 500 of the largest electric utilities. The price reflects the average revenue reported by the electric utility from electricity sold to the industrial sector. The value represents an estimated average retail price, but does not necessarily reflect the price charged to an individual consumer. Prices are converted at an exchange rate of 1 USD = 1.28 CAD.

Electricity Price Projections:

- Large industrial prices (i.e., Class A consumers) are expected to remain relatively flat.
- The National Energy Board’s *Energy Futures 2016* report projects that increases in electricity prices in Ontario will be in line with Newfoundland and Alberta over the next five years.
- Smaller industrials that are unable to shift to off-peak hours and/or are distribution-connected pay more per unit than transmission-connected large industrials.

Large Industrial Price Forecast (\$nominal / MWh)



Rate Mitigation:

Industrial Conservation Initiative (ICI)

- All customers pay Global Adjustment (GA), which reflects costs associated with contracted and regulated generation and the cost of conservation and demand management programs. Costs that go into GA include:
 - Clean Energy Supply contracts (natural gas), renewable and FIT supply contracts (wind, solar etc.)
 - Regulated payments for Ontario Power Generation nuclear and hydroelectric plants.
 - Other contractual costs such as; Bruce Power contracts; conservation expenditure; Non Utility Generators under contract to the Ontario Electricity FinancialCorporation.
- Since January 2011, Global Adjustment (GA) has been allocated to two separate classes of consumers:
 - Consumers with average monthly peak demand greater than 5 MW (Class A), who pay a portion of the monthly GA total based on the percent they contribute to Ontario’s five highest demand peaks in the previous year (i.e., Base Period).

- All other consumers (i.e., Class B) will continue to be charged GA on a flat \$/kilowatt hour (kWh) basis.
- In July 2015, Class A consumer status was extended to consumers operating in select electricity-intensive sectors with average monthly peak demand greater than 3 MW. It is not available to commercial or institutional customers between 3 and 5 MW.
- In April 2015, a further amendment to O. Reg. 429/04 regarding the sharing of Class A information took effect.
 - Each Class A consumer must provide written consent to their Local Distribution Company or IESO, to share the following with ENERGY:
 - ICI consumer's company name;
 - The address and geographic location of ICI consumer's head office;
 - The address and geographic location of the consumer's load facilities participating in ICI; and
 - Written consent for IESO/LDC to provide that information to ENERGY and for ENERGY to publish that information.

ICI Expansion

- The September 2016 Throne Speech, announced the intention to lower the Industrial Conservation Initiative (ICI) threshold to 1 MW and remove sector restrictions.
- On January 1, 2017, amendments to O.Reg. 429/04 took effect that further expand the ICI program to include more than one thousand newly eligible customers with monthly peak demand greater than one megawatt, down from the current threshold of three megawatts. In addition, sector restrictions have been removed and smaller industrial, institutional and commercial businesses would be eligible to participate.
- Expanding participation in the ICI program:
 - Reduces cost pressures on the electricity system by empowering more consumers to lower their electricity demand during peak periods; and
 - Reduces electricity bills for new ICI participants who are able to reduce their electricity demand during peak demand periods.
- Newly eligible customers had the opportunity to opt-in to the ICI program and participating electricity consumers will begin seeing a benefit on their July 2017 bills.
- With more than a thousand new businesses eligible for the expanded ICI, cost impact across sectors and industries will vary.
- ICI was also expanded to include smaller manufacturers with peak demands between 500 kW and 1 MW. This expansion is subject to sector restrictions (e.g., manufacturing and greenhouses as per North American Industry Classification System (NAICS) codes 31 – 33 and 1114).

Industrial Electricity Incentive (IEI) Program:

- IEI assists in the management of demand by encouraging increased production and expansion.
- Qualified participants in identified energy-intensive sectors receive reduced electricity rates for incremental consumption over a specified term.
- IEI was originally offered in three streams through a competitive IESO procurement process. There are a total of 22 successful participants: 7 in Stream 2 and 15 in Stream 3.
- IEI Stream 3 contracts were awarded in 2015:

- Offered contracts up to the lesser of 10 years or an end date of December 2024;
- Required a net increase of 15% or 5,000 MWh (whichever is greater) over the facility baseline;
- Extended eligibility to other non-industrial electricity-intensive sectors, such as greenhouses, data processing and refrigerated warehousing; and
- Extended the requirement to bring incremental load online from two years to three years from contract signing.

Northern Industrial Electricity Rate Program (NIERP)

- The original three-year NIERP was introduced as part of the 2010 Ontario Budget.
- On December 14, 2012, the Ontario government announced its intention to extend NIERP for three years. The extended program administered by the Ministry of Northern Development and Mines (MNDM) was set to expire on March 31, 2016.
- On April 7, 2015, the Ontario government announced its intention to make NIERP permanent for qualifying large northern industrial consumers.
- Ontario has committed to a permanent NIERP beyond March 2016, with continued investment of up to \$120 million per year. **Note:** MNDM was approved to implement an ongoing program, with an initial duration of five years ending March 2022.

Industrial Accelerator Program (IAP)

- IAP assists eligible transmission-connected customers to fast-track capital investment of up to \$10 million for major energy-efficiency projects, equipment retrofits, process changes and new construction.
- IAP also offers financial incentives for behind the meter (BMG) customer generation with the intent of reducing electricity consumption from the grid.
 - Under IAP, generation projects must not exceed 20 MW.
 - BMG projects can include combined heat and power, and waste energy recovery.
- The IESO expects that the program will achieve 1.7 TWh in savings between 2015 and 2020.

saveONenergy for Business

- The saveONenergy for Business Program offers a variety of financial incentives to distribution-connected industrial customers to increase energy efficiency and save money on their bills.
- The RETROFIT program provides incentives up to 50% of project costs to upgrade old or inefficient equipment.
- The PROCESS and SYSTEM program provides incentives to industrial consumers of up to 70% of project capital costs for system and process improvements.
- The Embedded Energy Manager program pays up to 80% of the cost for industrial consumers to hire an energy manager to identify and achieve savings.
- The AUDIT FUNDING program provides up to 50% of the cost of an energy audit to identify opportunities for energy efficiency upgrades and eligible incentives.
- Air Liquide's Hamilton air separation plant, the largest in Canada, participated in the saveONenergy for Business program and was able to reduce 6.4 million kWh and \$500,000 annually through compressor upgrades.

- Through an assessment of its facilities and their equipment, the company initiated a customized project in which a surplus compressor was rebuilt to expand the capacity of one plant and reduce demand on two others.
- Air Liquide received a \$120,000 saveONenergy incentive towards the costs of the project. Total project cost was \$1.2 million.

Demand Response (DR)

- DR provides payments to businesses and industry to shift consumption at times when the electricity system is stressed.
- The IESO has transitioned DR from a program approach to a market approach.
 - Annual DR auctions replace the practice of multi-year contracting for DR. Under the former OPA, DR resources were procured through the DR3 program for typically 5 year contract periods.
 - The IESO held its first DR auction in December 2015, procuring ~390 MW were procured for the summer commitment period (May 2016 to October 2016) and ~400 MW for the winter commitment period (November 2016 to April 2017).
- In addition to the DR auction process, IESO is also undertaking pilot programs to test new capabilities for DR in the energy market and its ability to meet system needs.
- DR reduces peak demand and, as a result, system costs.
 - As demand rises, more expensive generation is typically needed.
 - When consumers reduce their electricity use during peak periods, the marginal cost of more expensive generation can be avoided.