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Budgeting Series: Understanding Electricity Rates in Ontario

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Introduction and housekeeping

- Welcome!
- CIET introduction
- Housekeeping items
- Participant introductions



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Introduction



Elissa Williamson, P.Eng., CEM, CMVP, Senior Consultant at Econoler

Experienced energy management professional with over 15 years of energy and carbon management project experience focused in industrial settings. Well-versed in guiding large power users through the implementation and design of demand side management initiatives.

Agenda

- Energy versus demand
- Ontario electricity sector key players and their roles
- Ontario electricity market: overview
- Rate components
- The Hourly Ontario Energy Price (HOEP)
- The Global Adjustment (GA)
- Customer classes (ie. Class A, Class B)

Not covered in this webinar, market renewal (going live in Q2 2025), rate or GA forecasts.

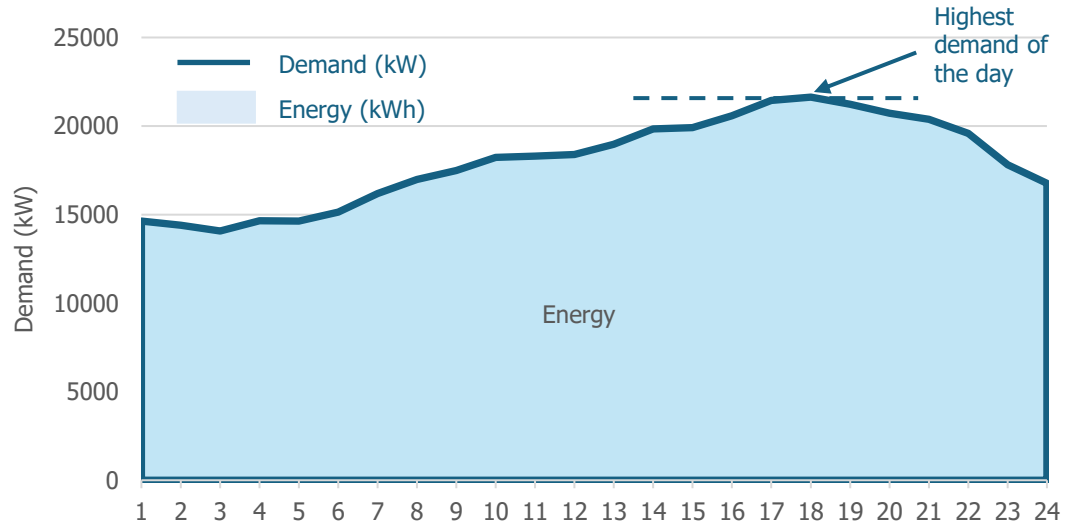
Energy versus demand

Energy

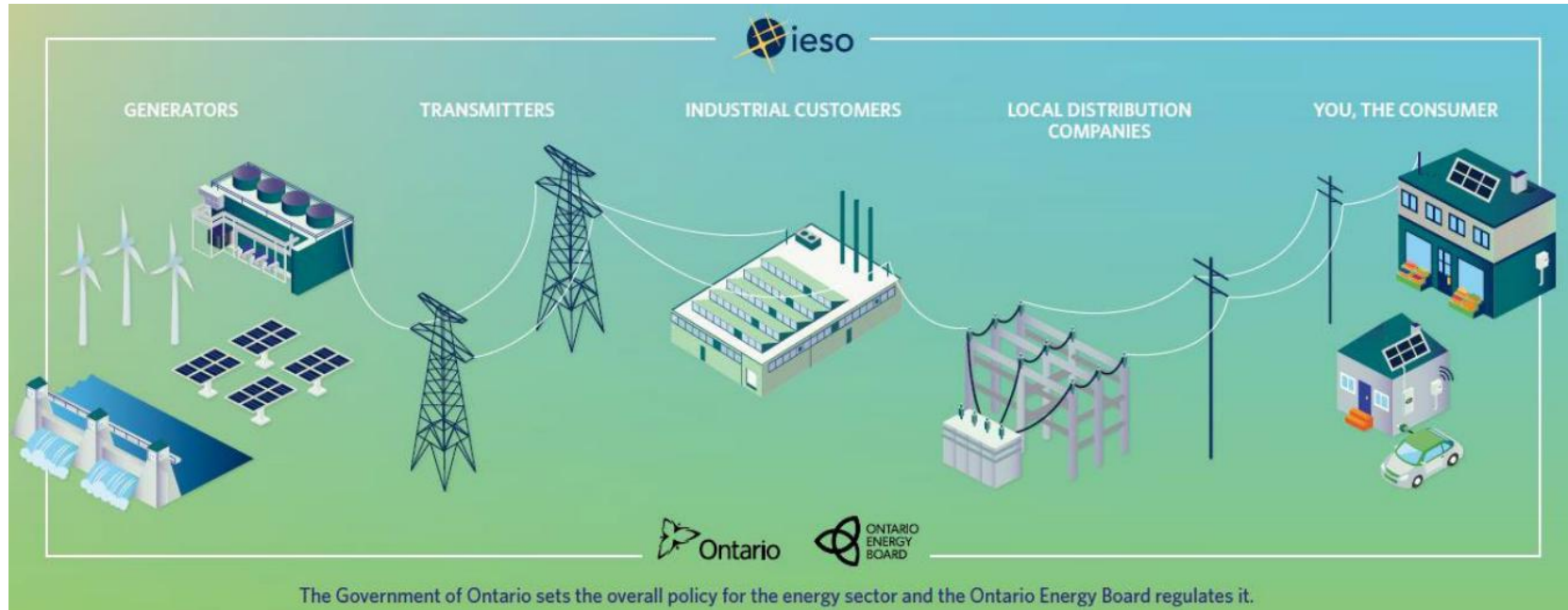
- Typically in kWh (or MWh)
- Refers to the total amount of energy used over a period of time (i.e. the customer used 12 kWh)

Demand

- Typically in kW (or MW)
- Refers to the amount of power consumed at a point in time of time (i.e. the industrial plant has a peak demand of 10 MW)



Ontario electricity sector key players



Source: IESO, (2022, April 19). [Meeting Ontario's Growing Electricity Needs \[PowerPoint slides\]](#).

Ontario electricity sector: roles of key players

Ministry of Energy and Electrification (MoE) - Set energy sector policy through regulations and law

Ontario Energy Board (OEB) - Regulate the Ontario energy sector (electricity and natural gas) in the public interest. This is done through:

- licencing (generation and transmission companies, utilities, energy retailers and the IESO)
- the review and setting of transmission and delivery rates
- the creation and enforcement of rules and standards and the imposition of penalties and fines
- consumer awareness and protection

Ontario electricity sector: role of key players

Independent Electricity System Operator (IESO) – “Air-traffic control of the electricity system”. Not-for-profit corporation, established in 1998 by the Electricity Act.

- Manages electricity flow: balances supply and demand, directing power across Ontario
- Connects key players: links generators, transmission networks, local utilities, and industrial users
- Plans for the future: ensures long-term electricity availability
- Oversees conservation: coordinates energy-saving efforts across the province

Ontario electricity sector: IESO control room



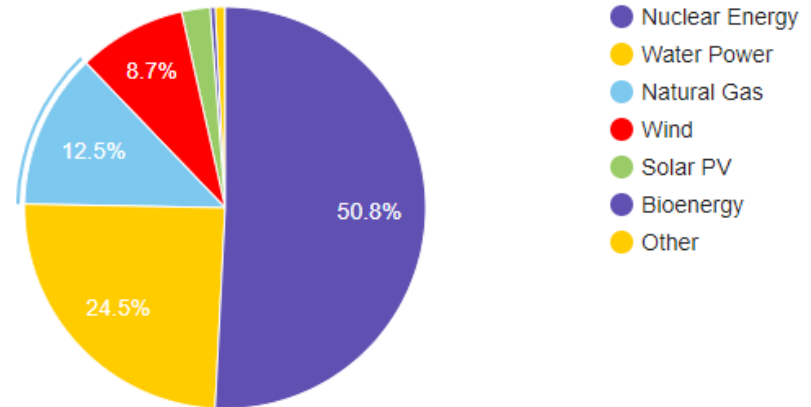
Source: [Image and Video Library \(ieso.ca\)](https://www.ieso.ca)

Ontario electricity sector roles: generators

Generators

Produce electricity. Can be public like Ontario Power Generation (provincially owned) or they can be private.

Ontario System-Wide Electricity Supply Mix: 2023 Data



Source: <https://www.oeb.ca/ontarios-energy-sector/overview-energy-sector>

Ontario electricity sector roles

Transmitters – move electricity across high voltage lines from generators to transformers where high voltage is converted to low-voltage.

Distributors – move electricity across low-voltage lines that deliver it to consumers. Also known as local distribution companies (LDCs). LDC's supply about 95% of Ontarians with electricity.

Retailers – Private companies that re-sell electricity under contract (<5% of consumers get their electricity from retailers). If you buy electricity from a retailer, you pay the price you agree to in the contract.

Ontario electricity market overview

Typical day in the market

1. **Suppliers/Generators** – submit offers/bids to provide electricity
2. **IESO** – Accepts offers until demand is met, starting with the lowest-priced options. This process leads to the setting of the Hourly Ontario Electricity Price (HOEP), which is one part of the commodity price of electricity
3. **LDCs** – Resell and distribute electricity to customers

The IESO then receives settlement payment from large customers/LDCs and transfers these payments to generators.

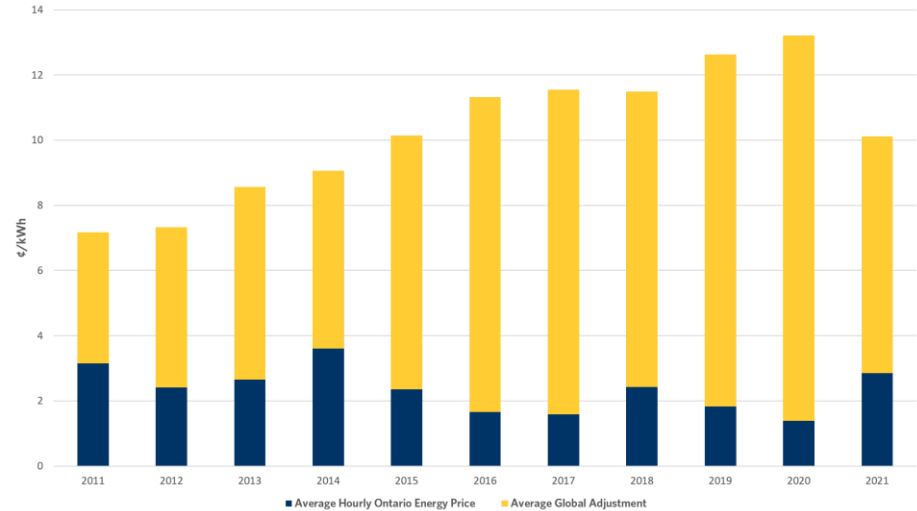
Rate components

Energy (kWh) – Commodity charges including HOEP and Class B Global Adjustment

Demand (kW) – Global Adjustment

Service – customer charges, uplift, administration

Transmission/Delivery– Network Charge, Connection Charge and the Line and Transformation Charge



Makeup of GA and HOEP for historical rates
Source: <https://ieso.ca/Learn/Electricity-Pricing-Explained/Global-Adjustment>

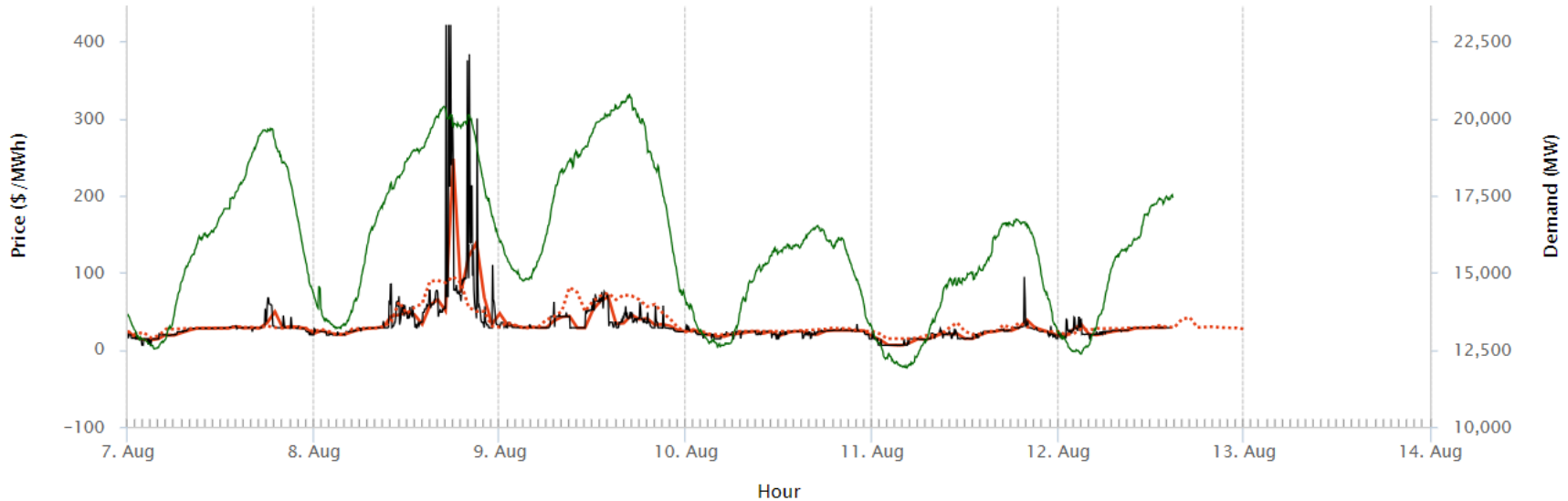
The Hourly Ontario Energy Price (HOEP) explained

What is it? The hourly wholesale cost to acquire electricity

Who pays the HOEP? All rate payers

- For residential or small businesses (Class B), the HOEP is included in the time-of-use or tiered rates (set by the OEB)
- For medium and large businesses (those with a monthly peak demand of 50 kW) the HOEP is a separate line item

The Hourly Ontario Energy Price (HOEP)



HOEP in red, 5min market clearing price (MCP) in black, projected HOEP in dotted red and Ontario demand in green. Source: <https://ieso.ca/Power-Data>

The HOEP (continued)

Factors that may influence the HOEP

- Cost of natural gas. This is because the price for natural-gas powered generators is directly impacted by the cost of fuel they are burning
- Maintenance outages for low-cost resources can also impact the HOEP (i.e. Bruce and Darlington refurbishments) as it can mean more expensive resources will be required in order to meet demand
- Weather (i.e. less wind or solar can mean more higher-cost resources are required).

The Global Adjustment (GA) components

Like HOEP, all customers pay the GA.

GA components include the cost of:

- Constructing new electricity infrastructure and maintaining /refurbishment of existing generation
- The difference between market revenue and the contractual revenue defined under generation contracts
- The cost to deliver conservation programs

2024	Jan	Feb	Mar	Apr	May	Jun	Jul
GA-OEFC-NUG (M\$)	2.81	2.68	2.93	3.37	4.39	2.94	
GA-OPG (M\$)	204.23	254.72	221.84	205.25	229.73	278.14	
GA-OPA (M\$)	307.65	386.36	575.20	444.01	465.56	502.82	
Total GA (M\$)	514.69	643.76	799.97	652.63	699.68	783.90	

Source: <https://ieso.ca/Sector-Participants/Settlements/Global-Adjustment-Components-and-Costs>

The Global Adjustment (GA)

Distribution of GA

The total GA for the month is then split into the Class A total and the Class B total, which then gets distributed to customers according to their rate class.

Source: <https://ieso.ca/Sector-Participants/Settlements/Global-Adjustment-Components-and-Costs>

2024	Jan	Feb	Mar	Apr	May	Jun	Jul
Class A Total (M\$)	86.4	108.0	133.4	109.6	117.4	131.4	
Class A Total (TWh)	3.808	3.631	3.687	3.536	3.583	3.549	
Class B (all remaining customers) Total (M\$)	428.3	535.7	666.6	543.1	582.3	652.5	
Class B (all remaining customers) Total (TWh)	9.281	8.080	8.134	7.337	7.503	8.355	

Customer classes (Class A)

Class A

- Customers that have an average annual peak demand of >500kW (large power users)
- Industrial Conservation Initiative (ICI) participants
- Separate line items for energy (HOEP) and demand charges (GA):
 - Pay the HOEP as a separate line item on their invoice
 - Pay their share of the GA through their Peak Demand Factor (PDF) which is their percentage contribution of energy withdrawn from the grid during the top five peak hours

Opt-in process for Class A

- Notice of customer eligibility sent by IESO/LDC by May 31
- Deadline to opt-in must be provided by June 15

Customer classes (Class B)

Class B

Can fall under one of two categories

- Wholesale metered or retail contract customers or
- Small business and residential
 - Tiered
 - Time of use (TOU)

Customer classes (Class B) (part 2)

Class B – wholesale metered or retail contract customers

- Pay their share of the GA based on their energy usage (unlike Class A customers who pay based on their demand)

	Sample Month	(¢/kWh)
Hourly Ontario Energy Price weighted average		1.39
		+
Global Adjustment actual		11.94
		=
Your Bottom Line		13.33

Source: <https://ieso.ca/Power-Data/Price-Overview/Global-Adjustment>

Customer classes (Class B) (part 3)

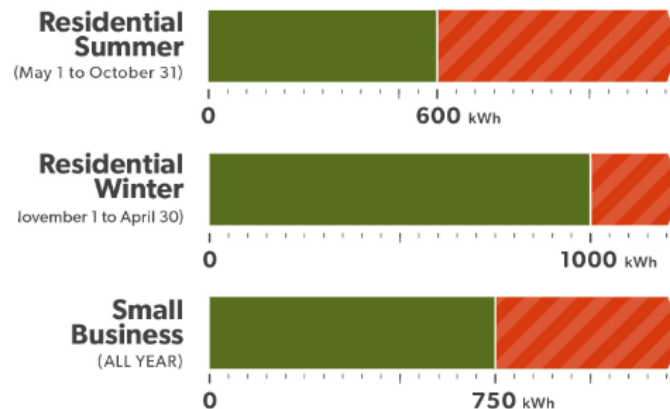
Class B – Small business and residential

- All rates include the HOEP and GA
- Rates are set by the OEB
- Provide stable pricing

Class B – tiered rate

Tiered

- Provides two rates based on the total amount of electricity used
- Flexibility to use electricity at any time of day



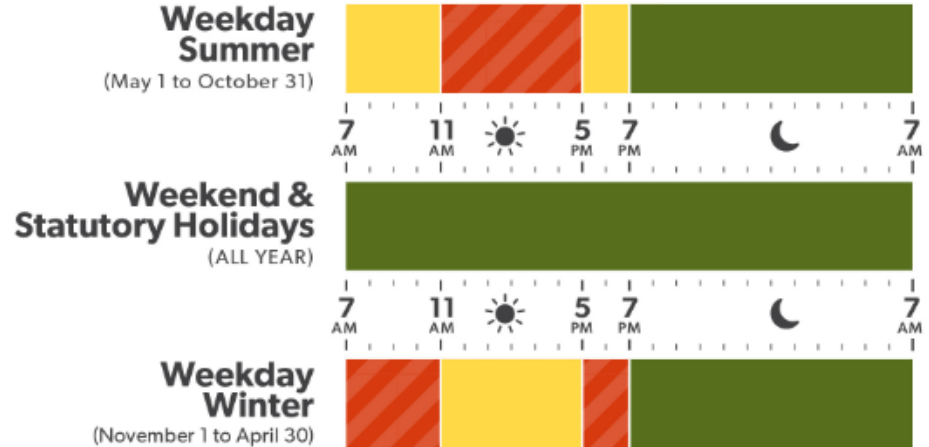
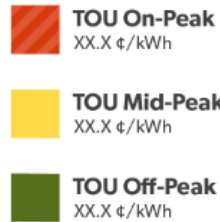
Ontario RPP tiered rates. Source:
<https://www.oeb.ca/consumer-information-and-protection/electricity-rates/choosing-your-electricity-price-plan>

Class B – time of use rate types

Time of use (TOU)

Provides three price periods

- off-peak usage being the lowest rate,
- followed by mid-peak then
- on-peak with winter and summer having different peak times.



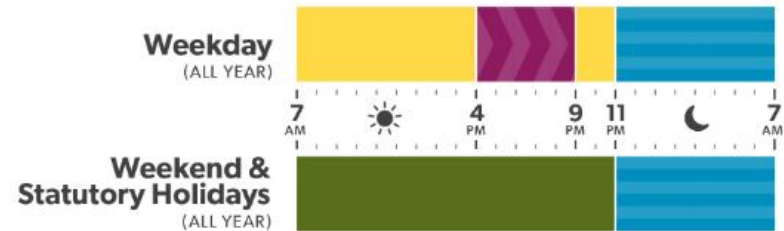
Ontario RPP TOU rates. Source: <https://www.oeb.ca/consumer-information-and-protection/electricity-rates/choosing-your-electricity-price-plan>

Class B – time of use rate types (continued)

Ultra-Low Overnight (ULO)

Provides four price periods based on when consumers use power with

- ultra-low overnight being the lowest rate, followed by
- weekend off-peak, mid-peak and on-peak being the highest.



Ontario RPP TOU rates. Source: <https://www.oeb.ca/consumer-information-and-protection/electricity-rates/choosing-your-electricity-price-plan>

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Appendices

IESO Instructor-Led Courses are available for those looking to improve their understanding of the market and settlements [Instructor-Led Courses \(ieso.ca\)](https://www.ieso.ca).

Introduction to Ontario's Physical Markets – Audience: Those new to Ontario's competitive wholesale electricity market

Settlements/Commercial Reconciliation – Audience: Those who work with settlement statements and invoices

Appendices (continued)

IESO Market Renewal Program (MRP) resources and training material [Market Renewal \(ieso.ca\)](https://www.ieso.ca)