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GLOBAL ADJUSTMENT

Knowing the rules to save

April 5th 2018
Webinar

Presented by Energy@Work

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Ontario's Electricity: Rising Costs + Changing Rules

Ontario “Ratepayers” must cover full “electricity” cost:

Residential and Multi-residential

Commercial & Industrial Customers Contribution: Focus of this webinar

Electricity bill has 3 main cost components:

Demand (kW and kVA)

Fixed Costs

Energy (kWh): Hourly Ontario Energy Price (\$/kWh)

&

“Global Adjustment Mechanism”

(GAM) the ‘e’ is silent

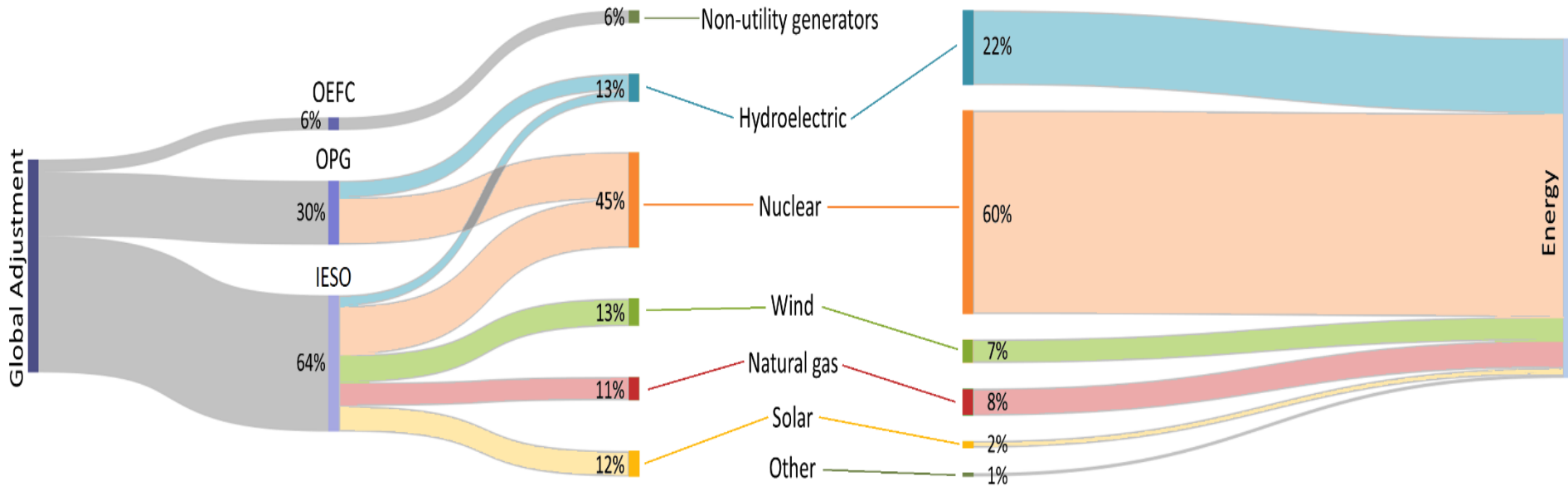


Overview

Global Adjustment Mechanism (GAM)e...

- GA cost is a monthly charge paid by *all* Ontario electricity ratepayers
- Originally a *credit* (Provincial Benefit), but has become a *charge*
- Total for Ontario has recently reached over 1 Billion dollars/month
- Beginning to exceed 50-60% of the electricity bill.
- Relief is possible by knowing the rules and **Playing the GAMe**

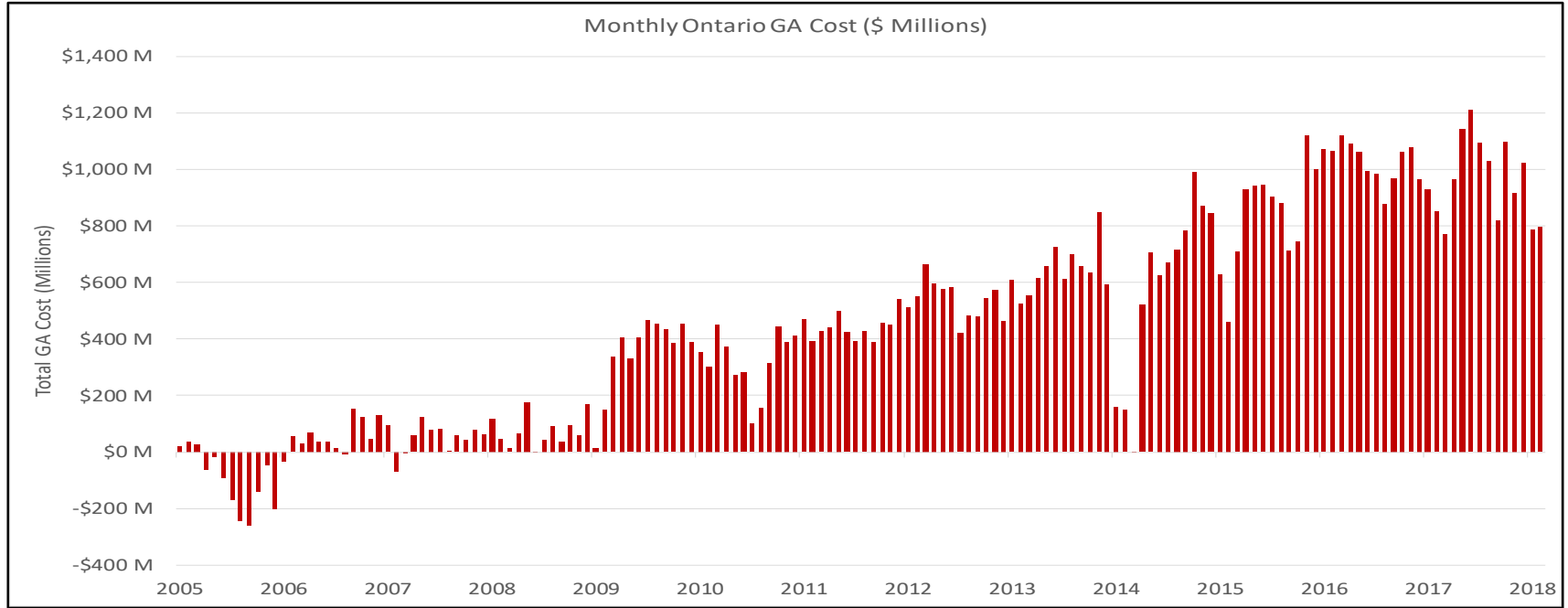
GAM Cost Breakdown: Mostly Generation



Reference:

<https://onlineacademiccommunity.uvic.ca/2060project/2016/01/13/understanding-ontarios-global-adjustment>

How big is GAM? **BIG** Once a credit, now a cost



\$75,000,00 per month (Average) in 2008 and increase to

\$791,500,000 in 2018 = **10.5 X higher in 10 Years**

Understand & Prepare to Win The **GAME**

All customers must pay Global Adjustment – It's a matter of *how*.

2 Options: **Class A** or **Class B**

Annual decision: June 15th Each Year, therefore:

Decision #1: Evaluate A Vs B, decide by **June 15th**

Decision #2: Develop **GAME Response Strategy**
for next period, **May 1st– April 30th**



Customer Perspective of GAM:

GAME or GAMble

Does not need to be a gamble if the right plan is in place,
BUT to play the GAME and win, there are rules that must be
obeyed.

GAME Players

Set the
Rules

Ministry of Energy

Keeps
Score

IESO

Determines
Eligibility

LDC

GA Class A letter required to be sent by May 31

Players

Ontario Ratepayers

Must make 'A or B' decision by June 15th



Decision 1: Class A or B?

Step #1: Check Eligibility (Commercial > 1 MW, Industrial > 500 kW)

Step #2: Estimate + Evaluate A Vs B Costs, Review Past & Forecast Future

Step #3: Decide + MUST Contact LDC Account Manager by June 15th

Class A: Eligibility Based on average annual demand (kW)

Class B: Default & a Fixed \$/kWh Rate set each Month

Customers Eligible for Class A

- All customers with an average annual demand of over **1 MW**
- Manufacturing, Industrial & Greenhouse customers over **500 kW**

Note there are additional rules to consider, e.g.:

Previously Class A but under 1 MW due to CDM - Might still be eligible

“Existing Class A customers who participated in...demand management programs ...and dropped below the peak demand threshold ... may be eligible to continue participating in the initiative.”

Decision 1: “Guesstimating Class A Vs B Costs

Class B: Rate set each month (\$/kWh) , based on GA costs, (Default Class)

- > Estimate cost by looking at the last 12 months of GA costs.
- > Valid only if rates and consumption remain similar.

Class A: Peak demand factor (PDF) x Monthly Ontario GA Cost

PDF = $\frac{\text{Building Demand}}{\text{Ontario Demand}}$ during the top 5 Ontario demand peaks.

- > Estimate by determining actual PDF and applying to predicted GA costs.

Calculating Peak Demand Factor (PDF) Requires the Coincidental Ontario Peaks (COPs) Hour

COPs = Ontario's Peak Demand

COP Date	Time EST	Ontario Demand (AQEW)
Sept 25 th 2017	5 PM	21,171 MW
Sept 26 th 2017	5 PM	21,039 MW
June 12 th 2017	5 PM	20,702 MW
Jan 5 th 2018	6 PM	20,238 MW
July 19 th 2017	6 PM	20,123 MW
Total		103,273 MW

$$\begin{aligned} \text{PDF} &= \frac{\text{Building Demand}}{\text{Ontario Demand}} \\ &= \frac{X \text{ MW}}{103,273 \text{ MW}} \end{aligned}$$

= 0.0000XXXX

the building's unique PDF used to calculate Class A GA costs

Case Study: Class B, 24% Savings

Class B is favorable: Based on adjusted interval data from Real Time Monitoring

Average Peak Demand	1,798 kW (Qualifies for Class A)
Demand during COP	1,829 – 1,962 kW
Average monthly kWh	623,000 – 997,000 kWh
Calculated PDF	0.0000831746
Estimated Class B Costs	\$827,000
Estimated Class A Costs	\$1,026,00
Estimated Savings	\$198,000 (24% savings as Class B)

} kW high in relation to kWh
=
High PDF
=
Class B Favorable

The property's high demand during COPs means Class A costs are high. Class B is therefore better. The right tools, talent and tenacity may change this for 2019, but need impact the demand profile during the 'next' 5 COP hours, 2018-19.

Case Study: Class A, 35% Savings

Class A is favorable: Based on adjusted interval data from Real Time Monitoring

Average Peak Demand	3,082 kW
Demand during COP	1,862 - 2,186 kW
Average monthly kWh	1,411,000 - 1,622,000 kWh
PDF	0.00009114
Estimated Class B Costs	\$1,735,000
Estimated Class A Costs	\$1,124,000
Estimated Savings	\$610,000 (35% savings over Class B)

} Low kW during
COP in relation
to kWh
=
Class A

This building had NO demand reduction strategy; However Class A remained favorable!

Case Study: Class A, 10% Savings

Class A is favorable: Based on adjusted interval data from Real Time Monitoring..

Average Peak Demand	1,735 kW
Demand during COP	1,575 – 1,852 kW
Average monthly kWh	644,000 - 765,000 kWh
PDF	0.00006167
Class B Costs	\$818,209
Class A Costs	\$738,644
Savings	\$79,566 (10% savings over Class B)

Be cautious of savings <10%

Although Class A is favorable, it is only 10% difference after a basic analysis. There are many factors & scenarios that should also **be assessed before deciding A vs B.**

Case Study: Flat Profile (Class A Selected)

Commercial office, multi mix tenants + large data center
= High baseload + High demand = Flat profile = Volatile savings



> Highly volatile, i.e. One month = \$178,000 more, but another month = \$153,000 saved

Overall savings of \$3+ Million = direct benefit to tenants!

> Demonstrating the volatility of GA i.e. need to track results!



Case Study: Boosting Peak Demand

Customers are allowed to artificially “**boost**” demand to meet minimum monthly kW threshold & ensure Class A eligibility, i.e. load bank, chiller, other loads

Ok to do this? Yes!

If your Average Monthly Peak Demand (on your bill) is below 1,000 / 500 kW:

Step 1) Class A vs. B analysis to see if Class A is favorable.

Step 2) If it is, boost your demand for 1 hour a month to reach the threshold.

Help is Available – What to ask for:

1. Executive Summary: Clearly laid out
 - Specific **decision** and supporting **rationale**
2. Global Adjustment **Overview** of Market
3. 2017-18 **Cost Projections A Vs B**
4. **Scenario Review** – “what if?”
 - Operational changes
5. **Specific Recommendation** on 2018-19 GA Strategy
 - Decision A or B and Why!
 - Project Team Responsibilities
 - GA Training to minimize GA Costs

Global
Adjustment
Report:

2017-2018

Technical Director

Cc Property
Manager

Energy@Work
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Know The Risks: What Impacts Class A vs B?

1. Changes to GA Costs and Rates

We expect to see the total monthly GA cost to remain at today's levels

There is a trend to switch to Class A and Class A savings becoming a cost to Class B

2. Changes to building profile and energy use

Class B: 1) Energy (kWh) reductions are a direct savings

2) Demand (kW) reductions during the 5 hours impacts next year's decision

Class A: Demand (kW) reductions during the 5 hours reduces next year's cost

3. GAM Rule Changes

We expect to see future rule changes, but impossible to predict

2018-19, we are expecting current rules to apply, but need to be vigilant

Recommended Timeline

Receive GA Recommendation Report	May 25 th
Presentation of Report	May 30 th
Confirm LDC Letter Received & Correct PDF	June 1 st
Seek Internal Approval (Signing Authority)	Friday, June 8 th
Reply to Utility with Class A or B decision	Thurs, June 14 th (Before June 15th)
Base Period Strategy: Decision #2	May 1 st , 2018 – June 30 th , 2019

**Important to leave ample time for Executive approval
of GA by June 15th
– challenging to explain &
- **decision is locked for 12 months!****

Decision #2: Develop Your **Class A** GA Strategy

Now that you made Decision #1, Think **proactively** about next year

Class A Strategy – Reduce your demand during the COP hours

- Target: ~ 20 days to ensure 5 COP hours are captured
- Peaks shift ~ develop a 3 hour window (recommended)
- Engage operations ~ innovative ideas occur that are unique to the building

Small changes add up to large savings

- **100 kW** off **1** COP peak = **\$10,000 in savings**
- **100 kW** off all **5** peaks = **\$40,000-\$50,000 in savings**

HOWEVER, the reverse is true:

- 100 kW addition on a COP = **\$10,000 Cost**

Differences appears in the following Adjustment Period

Class B GA Strategy: Again, Think Proactively

Class B Strategy:

Reduce use (kWh) all year!

- Immediate: Target kWh reduction and use CDM Programs

CAUTION:

CDM has had a history of disappearing following an election



Consider moving to Class A:

Is it possible to become Class A?

E.g. if monthly average demand is 950 kW –

is it practical to increase to > 1,000 kW?

- must evaluate A Vs B,
- potential option to consider



Class B to Class A Example – 7 kW difference

- Boost the demand to > 1,000 kW

Playing the GAME!

IE, the property can raise the monthly average demand 7 kW it will become eligible to participate as a Class A customer in 2018-19 adjustment period.

Still must evaluate if Class A is an advantage, but at least it is an option.

Since Class B must make up difference each month from Class A Savings, there is a distinct possibility that becoming Class A eligible is a favorable strategy

Base Period		MV 90 kW	Bill kW
2016	May	1,024	1,049
	June	1,114	1,130
	July	1,130	1,147
	August	1,084	1,116
	September	1,105	1,138
	October	889	914
	November	937	946
	December	780	804
2017	January	824	849
	February	881	900
	March	884	904
	April	1,001	1,021
Average		971	993

Below the 1,000 kW Demand - Class B



Recap: Key Steps

Step #1: Check Eligibility

- Commercial > 1 MW
- Industrial > 500 kW

Decision #1: Evaluate A Vs B & decide by June 15th

Decision #2: GA Response strategy - May 1st, 2018 – June 30th, 2019



Frequently Asked Questions

“What are the right GA tools?”

Real time monitoring (ability to check demand profile), motivated team, knowledge & experience

“Will the rules change again?”

Likely yes, dynamic market (Changed 5 to 3 to 1 and now .5 MW)

“Is the MOE’s estimated 34% savings from switching from Class B to A guaranteed?”

NO, savings vary by customer

“Do tenants care about GA?”

Getting very concerned with rising costs & asking: “What was your choice, reason and plan?”

“Who is checking that these costs are fair?”

Great question! We asked this in our response to Ontario's Long Term Energy Plan

“Can anyone switch A/B or B/A during the year?”

No: In extreme cases, such as fire, plant shut down, act of war – but has not happened.



Thank You!

Was this Webinar useful?

Please let us know

Requests@Energy-Efficiency.com

We are very interested in your comments
and are happy answer questions

Presentation available at:

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