Winning in Ontario's Electricity Market

Strategies for Combatting Global Adjustment and Earning Revenue from Ontario Energy Programs

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Mitigating Global Adjustment Costs

- Companies need to take a comprehensive look at this opportunity to reduce their electricity costs

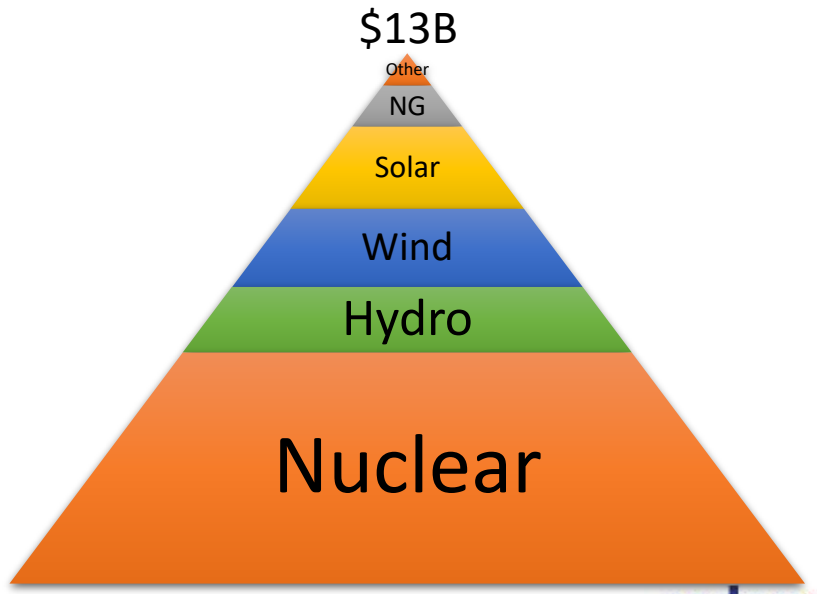
  - Understanding GA
  - Understanding and Determination of Customer Classes
  - Evaluating the Opportunity
  - Forging a Plan
  - Reacting in Real Time
  - Additional Opportunities

Global Adjustment Primer

Why does Ontario have a Global Adjustment (GA) cost?

- Hourly price is set by the market (Efficient Dispatch)
- Contracted generators need to be kept “whole”

Consumers <500 kW
Pay for GA as part of
their hourly rate



Customer Classes

- Consumers Greater than 5 MW Demand are by default Class A Consumers.
- Consumers between 1MW and 5MW are Class B consumers but can opt into Class A by **June 15** each year for the adjustment period starting July 1
- Consumers between 500 kW and 1 MW with certain NAICs codes can opt into Class A (manufacturing and greenhouses)

What is the Value of GA?

- Class A Consumers pay their share of the GA based on their load during the 5 highest peak hours of the year. (Demand based allocator)
  - ~$525,000/MWyr (6.0 cents/kWh on a 100% annual load factor)
- Class B Consumers pay the remainder of the GA pot each month based on their total energy consumption in the month (Energy Based allocator)
  - ~ 10.0 cents/kWh in 2017
- The difference for going to Class A is at least 2.0 cents/kWh

So, I'm Class A. Now what?

- Gather plant information
  - Historical data
  - Energy Management Information System
- Determine department/equipment costs to operate
  - IESO website to determine GA value
- Interview the department heads
  - What can be curtailed? How long without losing sales? Cycle? Safety First!
  - Can we build inventory?
  - Will staff work overtime? Evenings? weekends?
- Estimate the savings opportunity
- Develop Targets
  - Aggressive?, Conservative?
  - Formulate a safe curtailment plan

Understanding the Opportunity

Equipment	Load (kW)	GA Cost	% Curtailable	Curtailable Load (kW)	Savings
Load A	240	$ 126,000	0	0	$ -
Load B	190	$ 99,750	50	95	$ 49,875
Load C	165	$ 86,625	50	82.5	$ 43,313
Load D	150	$ 78,750	100	150	$ 78,750
Load E	80	$ 42,000	0	0	$ -
Balance of Plant	240	$ 126,000	25	60	$ 31,500
Total	**1065**	**$ 559,125**		**387.5**	**$ 203,438**

Ok, so there is an opportunity. Now What?

- Determine what Market/Facility information is required to make informed curtailment decisions
  - Energy Management System in place?
    - Capital requirements
  - Train People – should be dedicated individual
    - What is our threshold?
    - Monitor Websites – IESO, Weather Network, etc
    - Take Curtailment Action
    - Monitor Facility Reduction in real time
  - 3rd Party Service/Software
    - Cloud based
    - Rely on outside help to determine when to take action
    - Monitor reductions in real time
    - Generate Reports to indicate success

Real Time Visibility

Additional Opportunities to reduce Demand

- Distributed Generation
- Behind the meter solutions
- Typically 3rd party ownership to reduce risk (capital, implementation and operational)
- Shared Savings
- Battery
  - 3-4 hours of backup Battery
  - Risk of missing CP's as Ontario load gets flatter and flatter
- Gas Generation
  - No limit on # of hours
  - Lower risk of missing CP hours
  - 2MW genset can deliver an additional $260k/year GA savings to the customer

Additional Opportunities to Reduce Costs

Demand Response

- Up to an additional $50,000/MWyr is available for participation in Ontario's Demand Response Program
- Summer/Winter Programs
- Loads can participate directly with the IESO in the DR Auction
  - Prudential Risk
  - Performance Risk
  - Management Risk (metering, registration)
- 95% of loads participate through Aggregators
  - Reduced risk
  - Metering Feedback
- Class B Consumers can participate through Aggregators

Additional Opportunities

- Peak Demand Trimming (Network and Connection Charges)
- Load Shifting – On/Off Peak
- Dispatchable Load – Operating Reserve Opportunity
- Energy Efficiency – IESO/LDC programs

Conclusions

- The vast majority of facilities have opportunities to reduce costs
- Installing an Energy Management Information System is critical and will have a quick payback
- Help is available from your LDC; 3rd parties; Capital, Advice, Services
- Doing a comprehensive analysis will likely flush out some additional unexpected savings