

ENERGY FORUM

A Need to Be More Competitive!

August 11, 2016



AGENDA

➤ **Welcome**

- Introductions
- MPP Lou Rinaldi Regrets
- Energy “State of the Union” as we see it
- Cap & Trade

➤ **A Local Impact Story – Peter Ayres, Belden Canada Inc.**

➤ **NMA Survey Results & Case Studies**

➤ **Partner Organization Updates**

- Ontario Energy Coalition
- Ontario Chamber of Commerce
- Eastern Ontario Wardens Caucus
- Independent Electricity System Operator (IESO)

➤ **Closing Remarks - Call to Action**

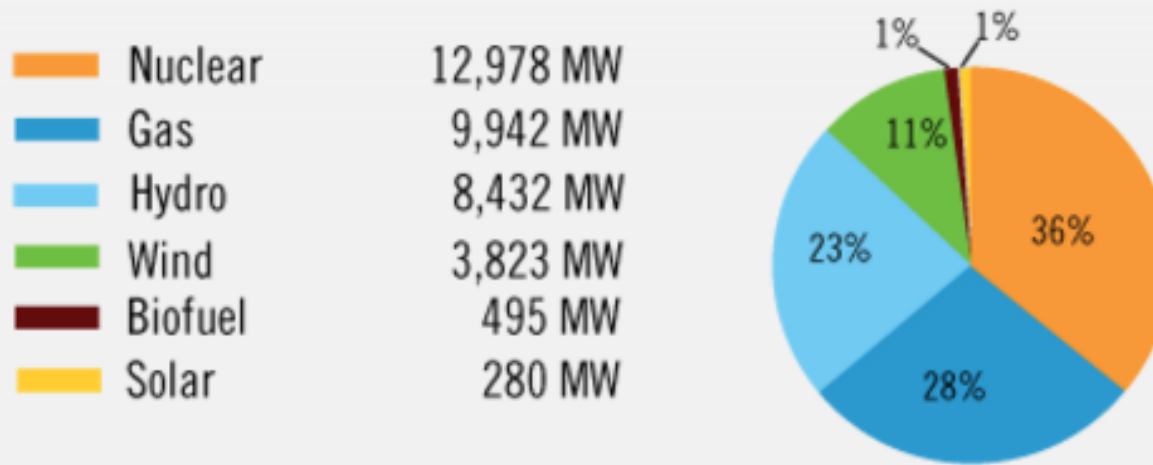
Energy “State of the Union” Overview

The News

Rising hydro rates could cause 'serious harm' to Ontario's economy, BMO chief economist says

Continued increases to the cost of electricity threaten to undermine the long-term competitiveness of Ontario's economy, warns BMO's chief economist Doug Porter. "In the last year we've seen prices for the average consumer in Ontario rise by a little bit more than 15 per cent," said Porter. This compares to an overall increase in the rate of inflation of less than 2 per cent – [Global News](#).

ONTARIO ENERGY GENERATION



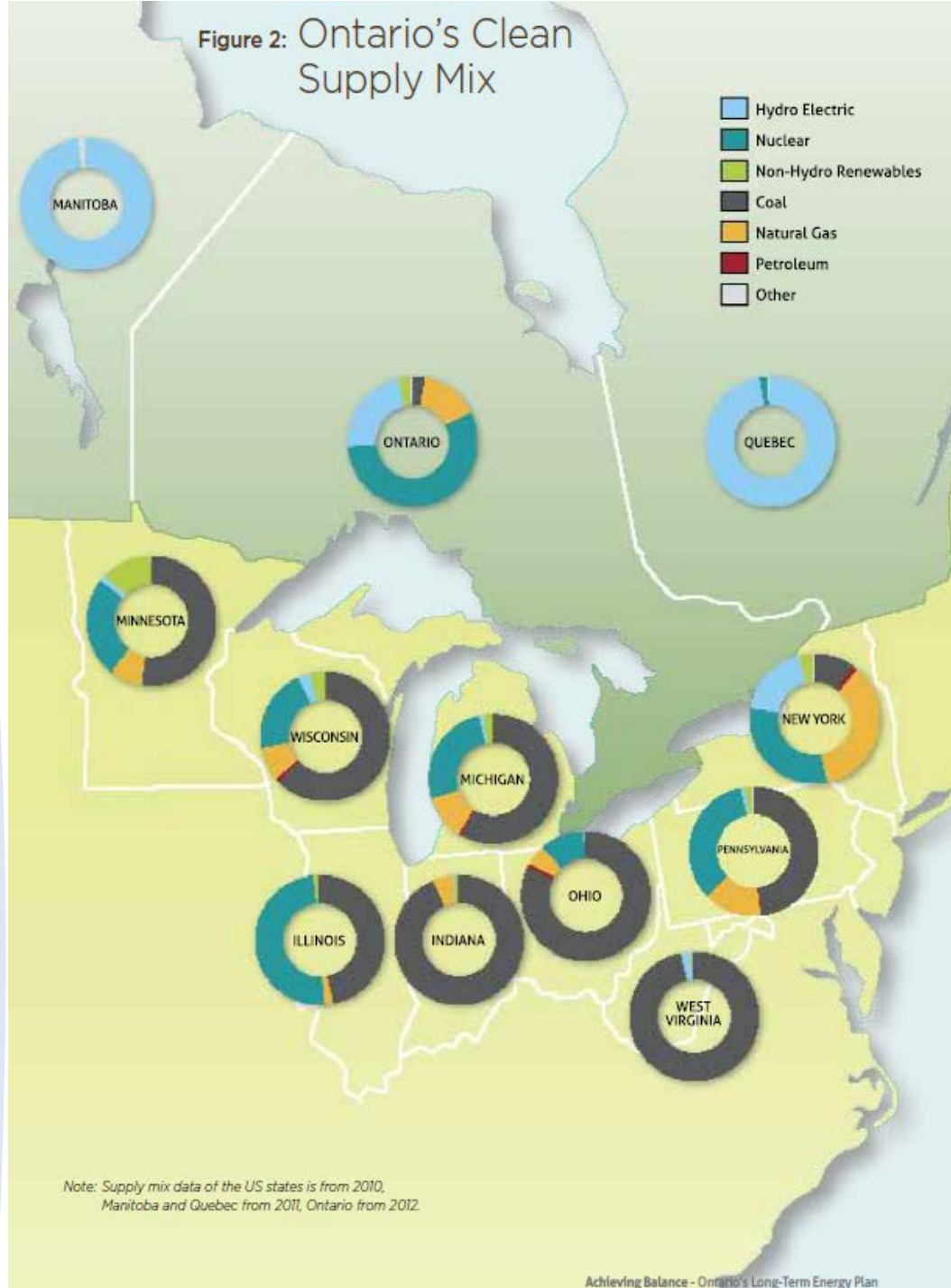
Generating resources as of June 21, 2016, updated quarterly based on the 18-Month Outlook. Note that these figures do not include generators that operate within local distribution service, except for those that participate in the IESO-administered market. Most solar facilities in Ontario are currently connected to the distribution system.

Total Contracted Generation, First Quarter 2016

Generation capacity under IESO contract in the Ontario transmission and distribution grid.

- 9,112 MW of Natural Gas and other Fuel Sources (34%)
- 6,300 MW of Nuclear (24%)
- 5,814 MW of Wind (22%)
- 2,490 MW of Solar (9%)
- 2,461 MW of Hydroelectric (9%)
- 495 MW of Bio-energy

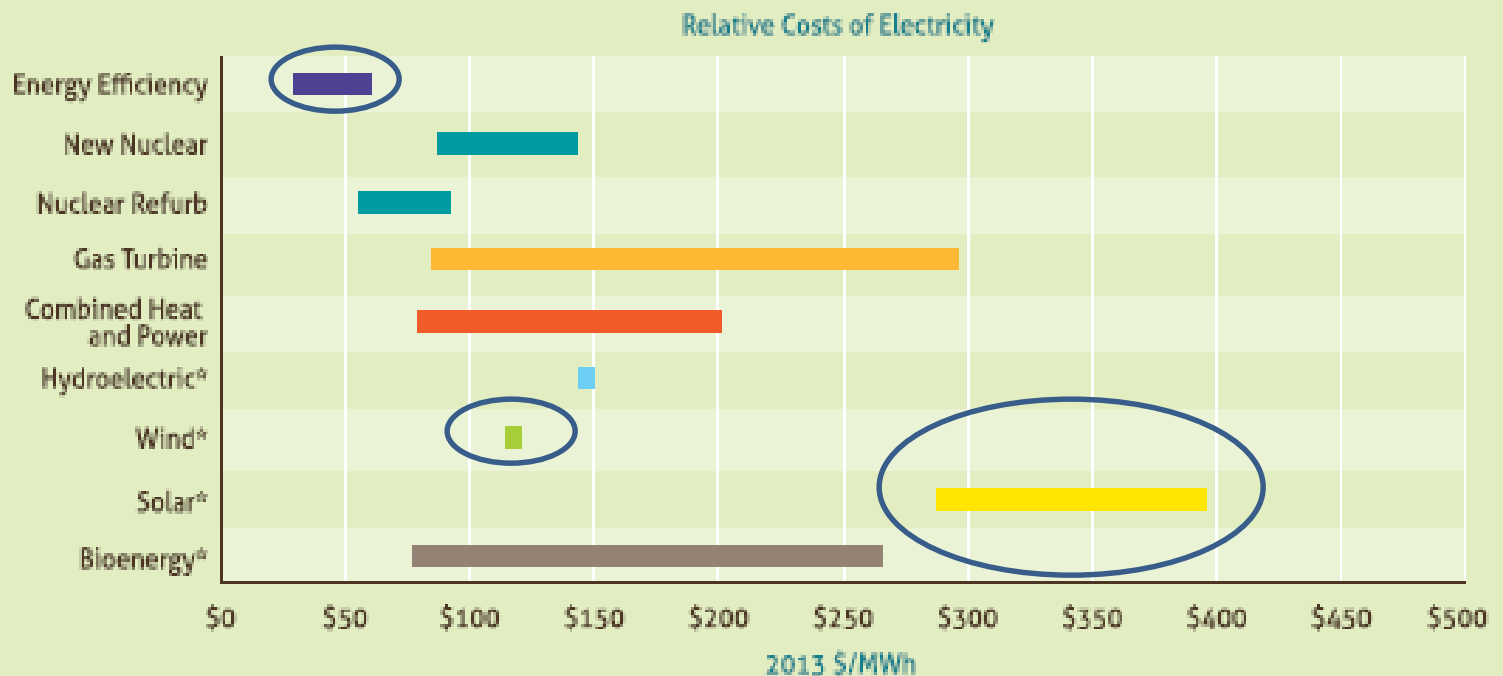
Figure 2: Ontario's Clean Supply Mix



COMPARING OUR ENERGY MIX TO OUR NEIGHBOURS

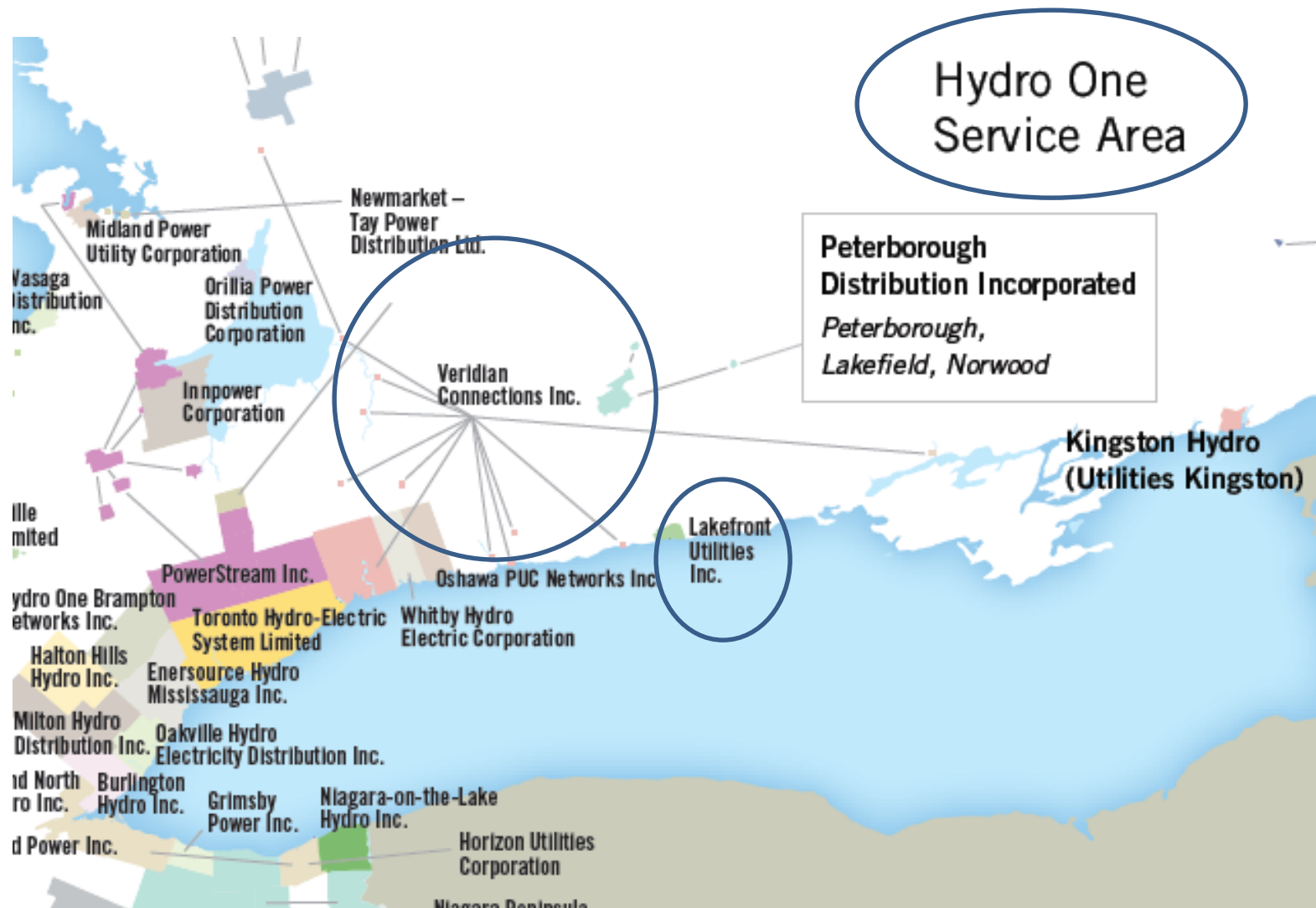
ONTARIO LTEP DIRECTION – MORE WIND AND SOLAR AND CONSERVATION

Figure 9: Generation and Conservation Cost of Options



* Updated for January 2014 Feed-in Tariff prices

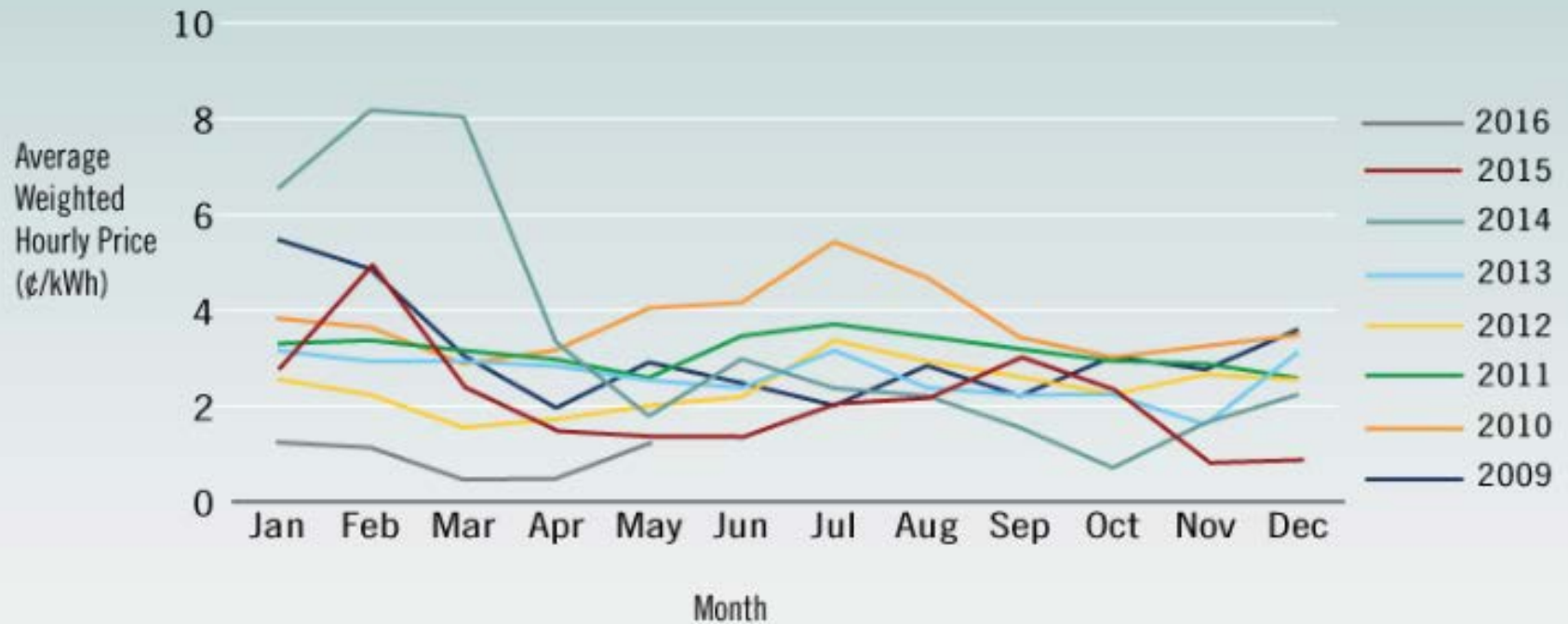
ONTARIO LDC NETWORK



ELECTRICITY PRICING TRENDS

Monthly Average Hourly Prices, By Year

Average Hourly Prices for each month since market opening on May 1, 2002. Averages are weighted by the amount of electricity used throughout the province within each hour.



Your Veridian Bill



www.veridian.on.ca
The power to make your community better.



Service Address

ESCO LIMITED
PORT HOPE
185 HOPE ST S

Amount Previously Billed

PREVIOUS BALANCE

Payment Jul 04, 2016 - Thank You

BALANCE FORWARD

Veridian Distribution Charges

Delivery Charge \$2.512/kW
Transformer Allowance
Customer Charge

Total Veridian Distribution Charges

Other Charges

SSS Admin Charge \$0.25/month
Electricity* \$0.015631/kWh
Global Adjustment* Peak Demand Factor: 0.000053090
Transmission Connection Charge \$2.1889/kW
Transmission Network Charge \$3.3034/kW
Debt Retirement Charge
Wholesale Market Services* \$0.006/kWh

Total Other Charges

Interest Charge on Overdue Amount

H.S.T. (Registration # 88628-2920-RT0001)

Total Due By Aug 11, 2016

Outstanding balances after the due date will be assessed an interest charge of 1.5% per month (19.56% per annum).

Account Details

Service Type Intermediate Use
Your Account Number 73312000-00
Billing Date Jul 20, 2016

Due Date Aug 11, 2016

Amount Due

Account Status Year To Date

Cost Incurred This Billing Cost Incurred To Date

Other Charges

SSS Admin Charge \$0.25/month
Electricity* \$0.015631/kWh
Global Adjustment* Peak Demand Factor:
Transmission Connection Charge \$2.1889/kW
Transmission Network Charge \$3.3034/kW
Debt Retirement Charge
Wholesale Market Services* \$0.006/kWh

Electricity Consumption

| Meter No | Billing Period | Days | kWh Used ⁽¹⁾ | For Month ⁽³⁾ | | 7 am - 7 pm Weekdays ⁽⁴⁾ | |
|------------|------------------------------|------|-------------------------|--------------------------|--------------|-------------------------------------|--------------|
| | | | | Demand ⁽²⁾ | Power Factor | Demand ⁽²⁾ | Power Factor |
| VC00250604 | May 31, 2016 to Jun 30, 2016 | 30 | | | | | - |

(1) The charges for these items are based on kWhs used adjusted for losses associated with the delivery of electricity. The adjustment factor is 1.0344

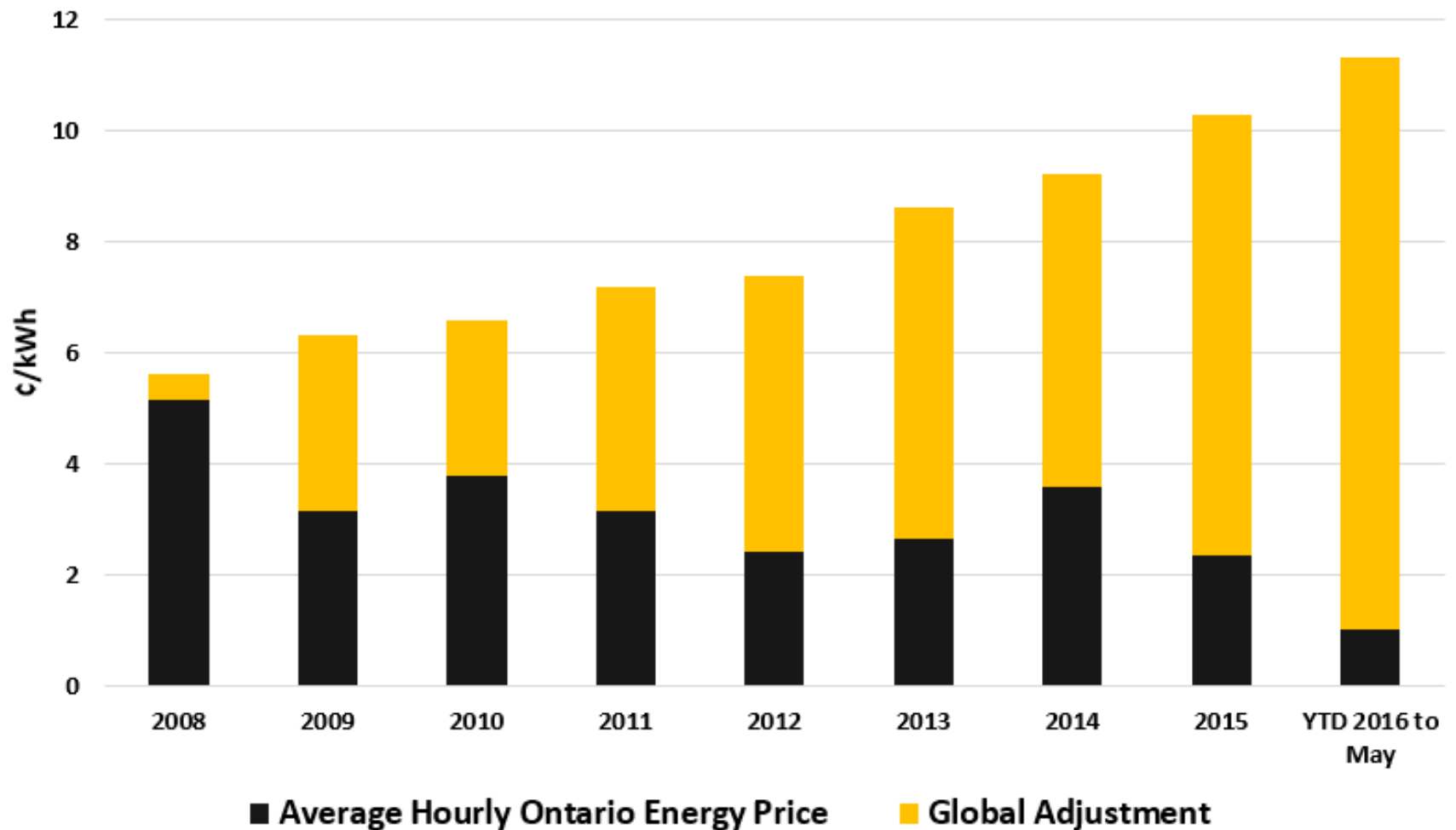
(2) Billing Demand is the higher of peak kW or 90% of the peak kVA demand.

(3) Monthly billing demand is used to assess distribution and retail transmission connection charges.

(4) 7a.m. to 7 p.m. weekday billing demand is used to assess retail transmission network charges.

GLOBAL ADJUSTMENT

Electricity Pricing Trends



GLOBAL ADJUSTMENT

Global Adjustment

Consumers who pay the Hourly Ontario Energy Price (HOEP), or have signed a retail contract, will see their electricity bills also include a line for the Global Adjustment. This charge accounts for the differences between the market price and the rates paid to regulated and contracted generators and for conservation and demand management programs.

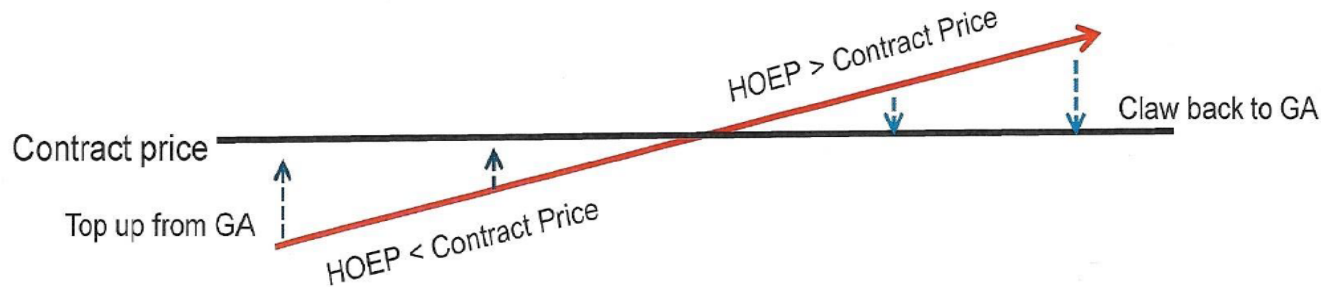
The GA is calculated based on the difference between the Hourly Ontario Electricity Price (HOEP) and:

- Regulated rates to Ontario Power Generation nuclear and baseload hydroelectric generating stations
- Contracts with the Ontario Power Authority such as new gas-fired facilities, renewable facilities, and nuclear refurbishments
- Contracted rates administered by the Ontario Electricity Financial Corporation paid to existing generators.

It also includes the cost of delivering conservation programs in the province and the payments made to participants under contracts with the OPA for demand response programs.

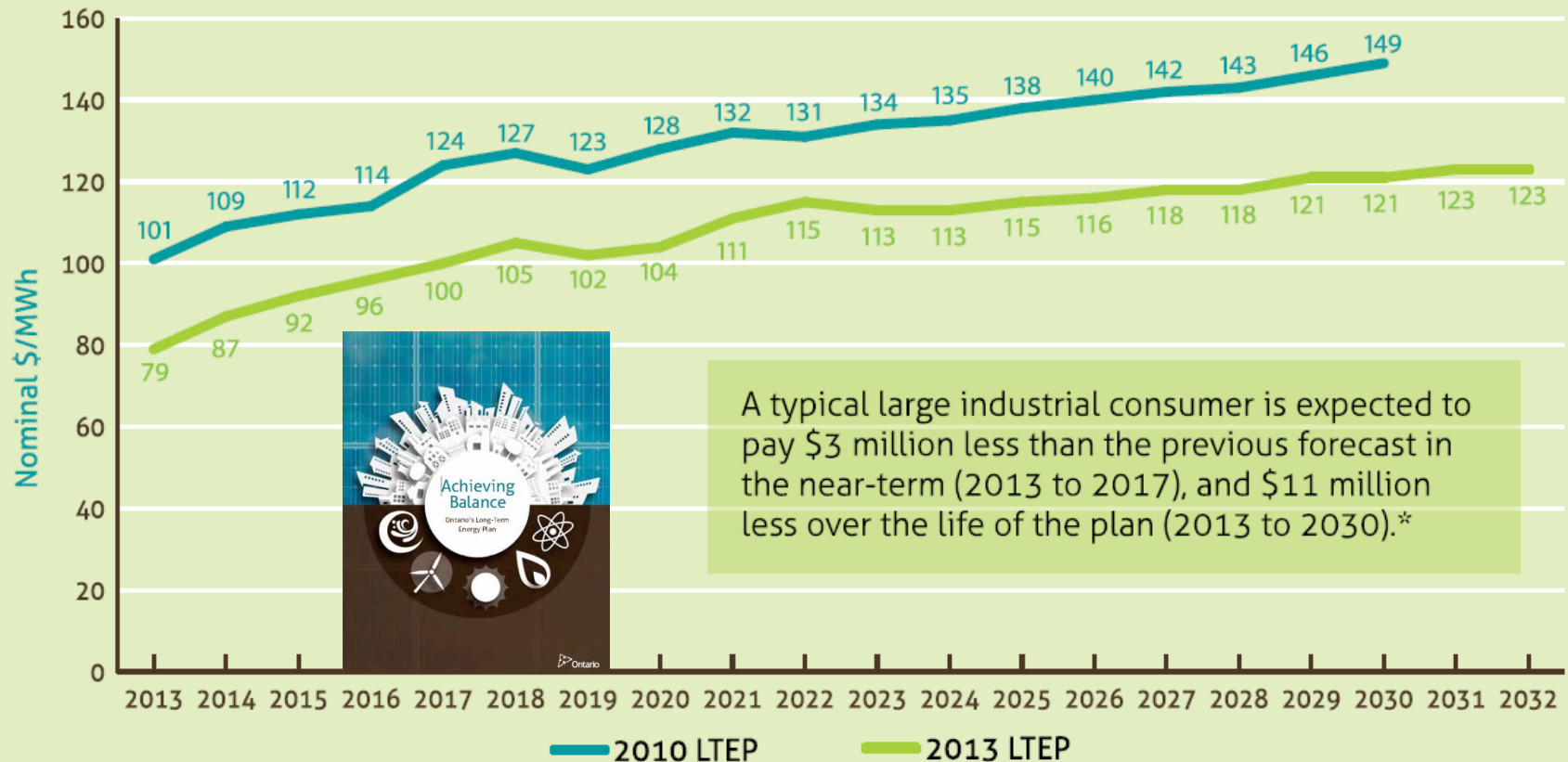
Paying for Generation

- 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 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.



Excerpt from Ontario Long-term Energy Plan

Figure 8: Industrial Electricity Price Forecast



* A typical large industrial customer has a demand of 5 MW and a 75% capacity factor.

Cost of Power for Industry vs. Competitive Regions

Average wholesale delivered price of power for industry in Canada
Nominal CDN\$/MWh

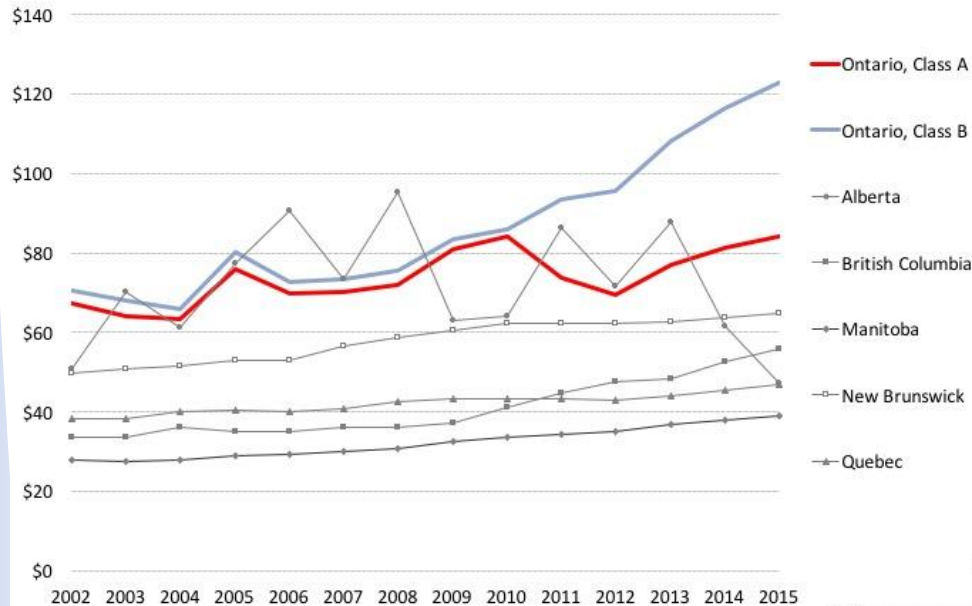
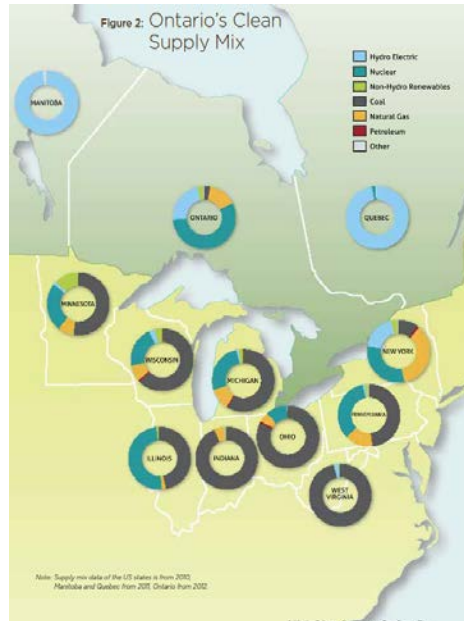
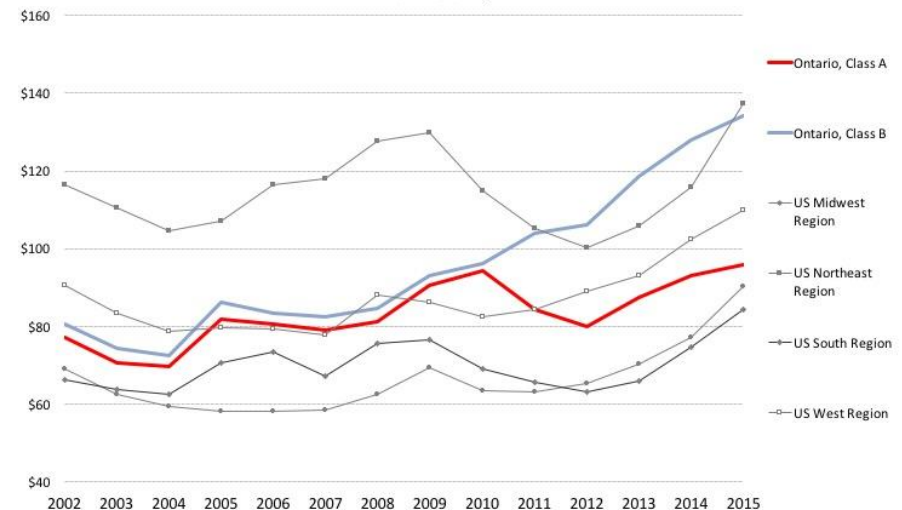


Figure 2: Ontario's Clean Supply Mix



Average retail (LDC) delivered price of power for industry in Ontario vs. US markets
Nominal CDN\$/MWh



ONTARIO CAP & TRADE

Time is Running Out for Small & Medium Business to Save

Ontario's Cap and Trade regulation went into force July 1st.

The program will officially launch on January 1st, 2017.

This can have an enormous impact on the energy-based operating costs of your business.

For example, facilities eligible to voluntarily participate in the cap and trade program could save up to \$450,000 per year.

ONTARIO CAP & TRADE

Why should you care?

There is an alternate option for mid-sized facilities emitting between 10,000 and 25,000 tCO₂e/year (approximately equivalent to consuming 5 million to 12.5 million m³ of natural gas).
Opt-in to the cap and trade program to become a Voluntary Participant.

Voluntary Participants are eligible to receive free allowances similar to large emitters. This could represent significant cost savings for many facilities (\$150,000 to \$450,000 per year) – but only if fast-approaching reporting, application and verification deadlines are met.

Free Allowance Application Deadline: September 1, 2016

Source: ICF Canada

Copies of a Cap & Trade Overview provided by ICF Canada are available.

A Local Story

Belden Canada Inc.,
Peter Ayres, Plant Manager

NMA

Energy Cost & Economic Impact Survey Results

Energy Survey Results

- 33% of Member Manufacturers responded
 - ✓ *Higher response rate than anticipated based on timing of survey during prime shut down and vacation period.*

Collectively,

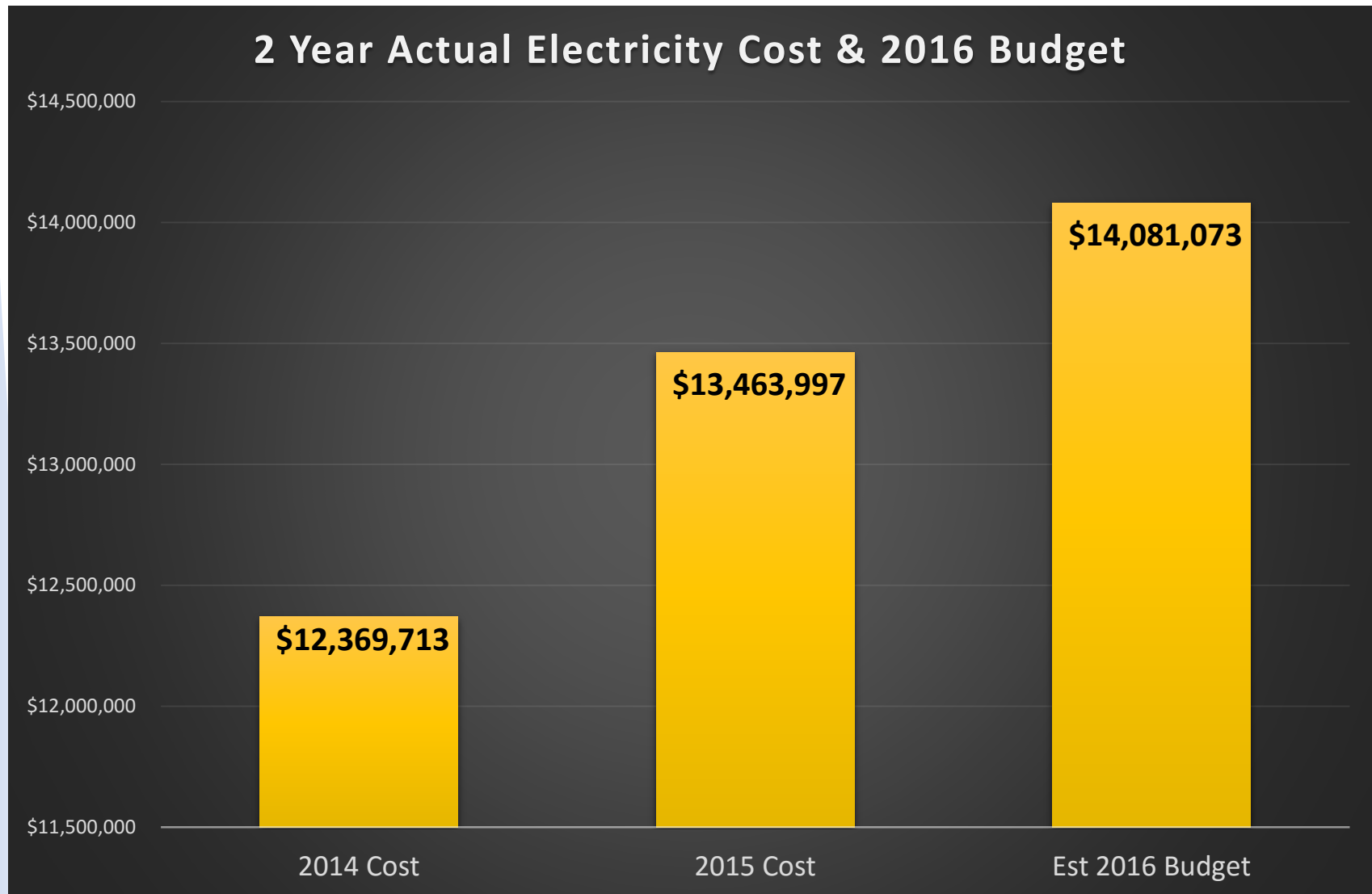
- Employ over **1440** individuals locally
- Annual **payroll** exceeding **\$99 Million**
- Pay in excess of \$2.1 Million in Municipal taxes

Energy Survey Results

- 70% compete within North America primarily US, including 25% US based sister plants.
- In addition to US, 30% also compete China, Europe, South America and Australia.
- Over 90% reported their primary source of power is electricity, and 75% use Natural Gas as a secondary source.
- Over 80% of respondents are large electricity consumers using more than 250,000 kilowatt hours (kWh) per year and mainly Class B (*with a peak demand over 50KW and under 5 MW*).

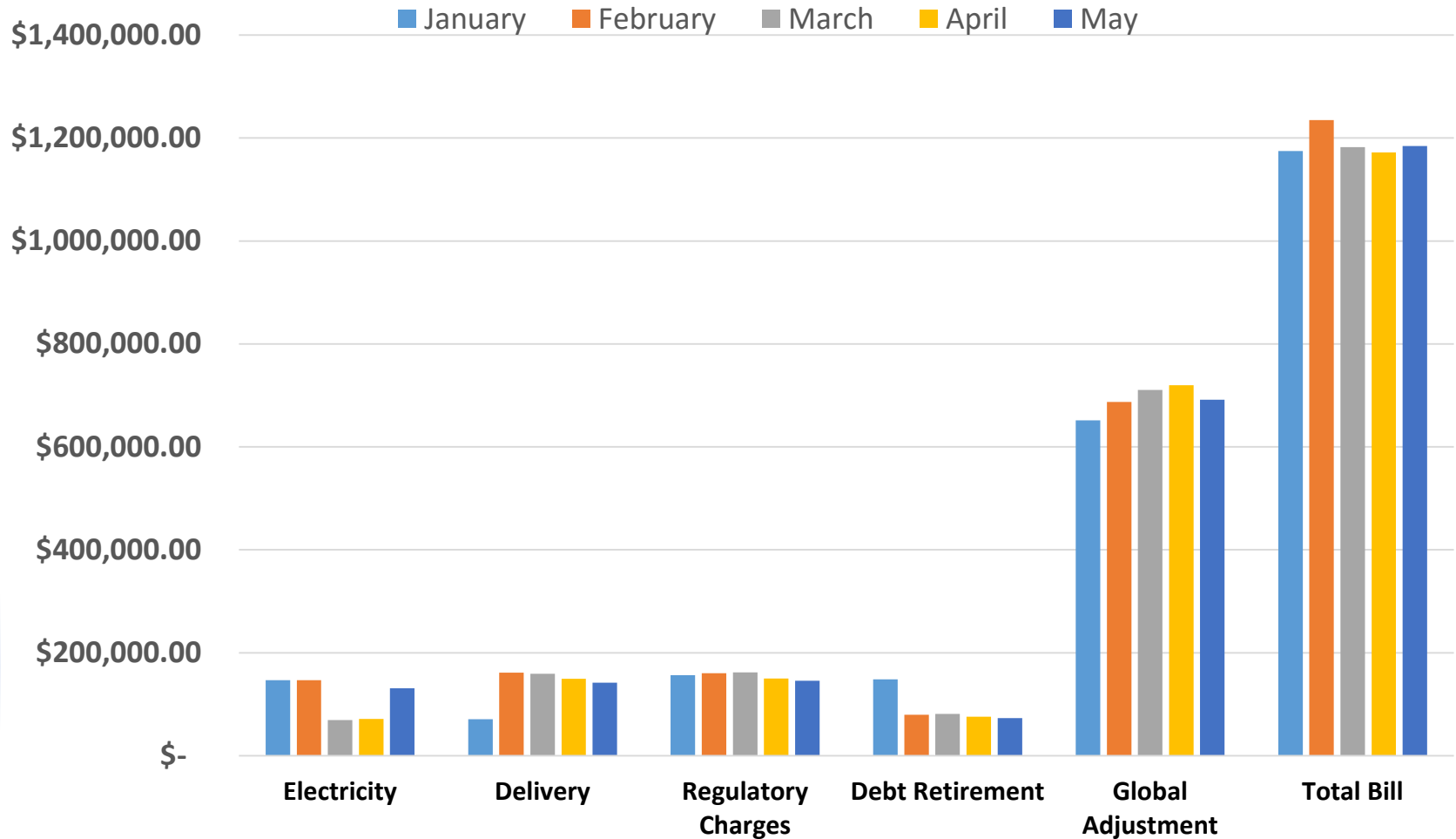
50% do not foresee any changes in their primary source of energy, and 10% noted a change will be necessary to remain a viable business.

Energy Survey Results



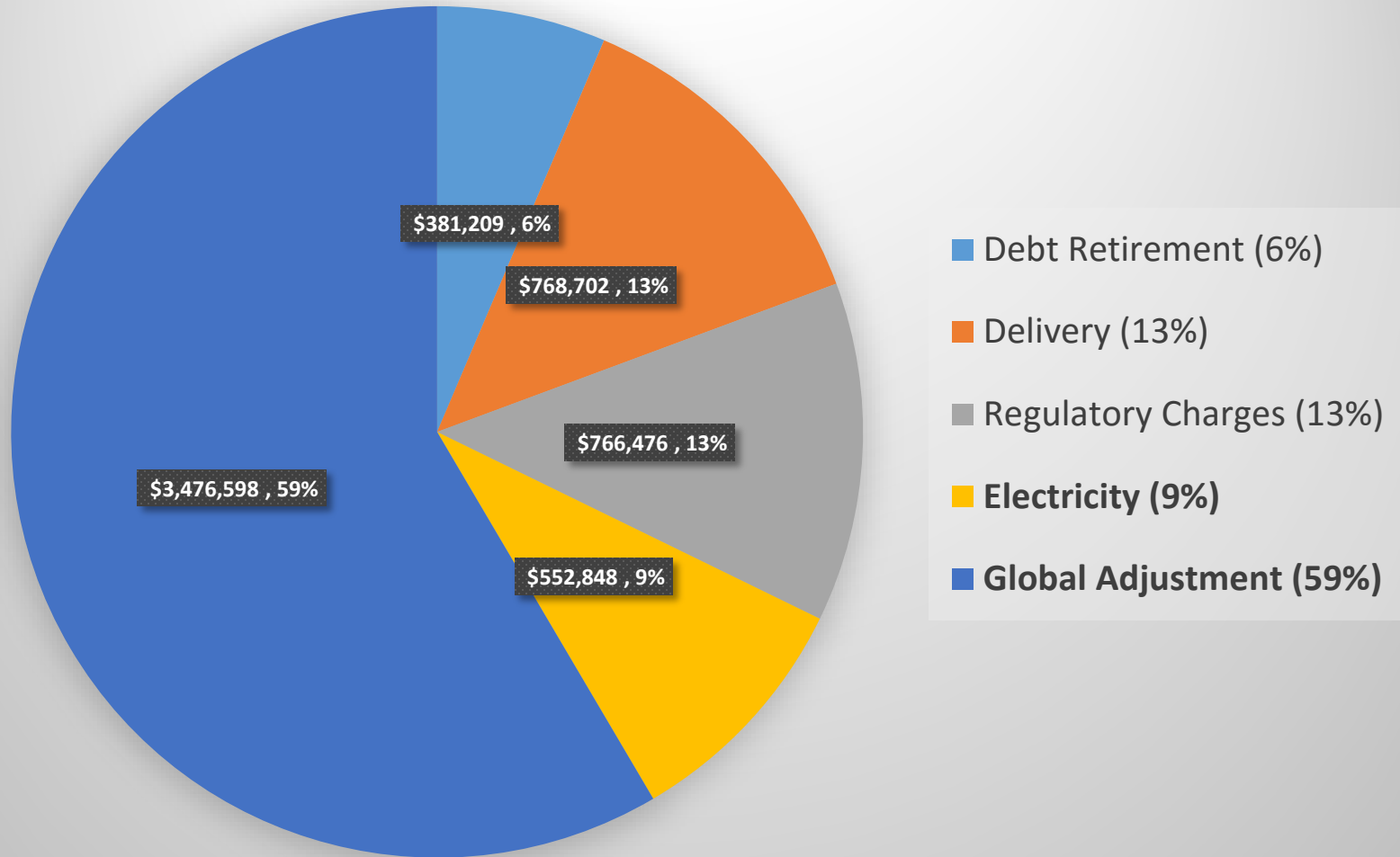
Energy Survey Results

2016 Electricity Billing to May



Energy Survey Results

2016 to January to May - \$5,945,833 Total Billing



Energy Survey Results

Participation in Conservation Programs

- 50% of respondents participated in a conservation program within the last 3 years.
- Of that, 50% consumed less electricity as a result; however only 2 respondents realized a reduction in their electricity costs, one 5% reduction and one 10%.
- As a result of energy conservation efforts 90% realized an increase in the Global Adjustment charge on their bill that may have impacted their anticipated conservation savings.

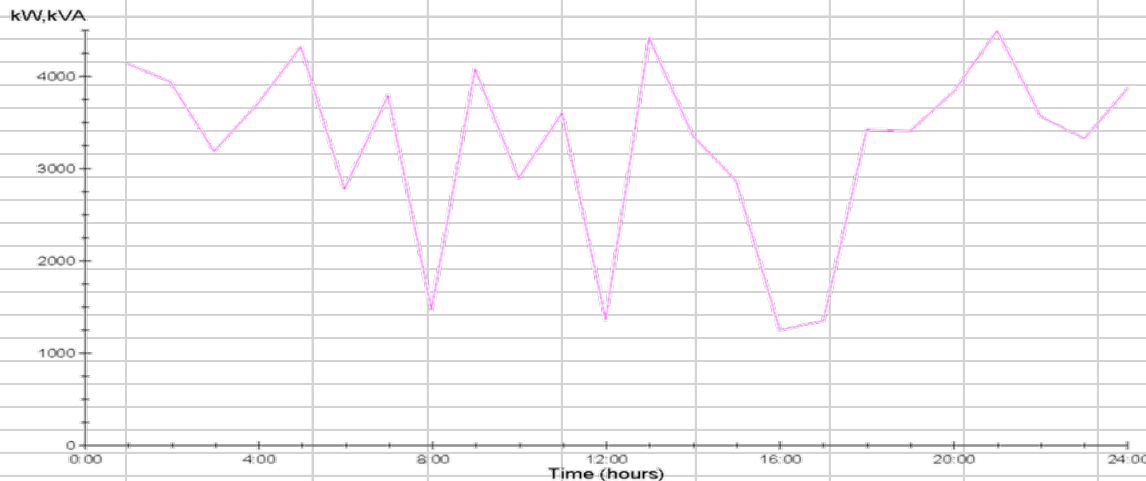
Energy Survey Results

General Comment themes:

- Global Adjustment represents 40-59% of electricity bill.
- Global Adjustment is an unknown budget expense – you just don't know what your bill will be!
- Difficult to explain Global Adjustment to US Corporate.
- Difficult to compete with US based competitors and sister plants.
- Significant conservation projects reduced overall consumption however, an increase in Global Adjustment charges masked savings.
- Investigating alternative combined heat & power options i.e. *Natural Gas Cogen on-site to reduce energy costs.*

Sector Energy Cost Case Studies

Sector Energy Cost Case Studies

| | | | | | | | | | | | | | |
|--|----------------------|----------------------|--|-------|--|---|-------|-------------------------------|---|-------|---------------------------------|--|---------|
| Industry Sector | Foundry | | Manning & Shift Schedule | | 8 hours shifts with staggered start times | | | Foundry Operational Days/Week | | | Finishing Operational Days/Week | | |
| NAICS Code | 331514 | | | | | | | 2013 | 2014 | 2015 | 2013 | 2014 | |
| Locale | Eastern Ontario | | | | Days: 7 am -3 pm Afternoons: 3 pm - 11 pm | | | 3 | 2 | 2 | 3 | 2.5 | |
| Exporting | % Product for Canada | % Product for Export | Manpower Total (hourly unionized & salaried) | | Bulk is: | | | | | | | | |
| | 15 | 85 | | | Midnights: 11 pm - 7 am | | | | | | | | |
| | | | | | 2013 | 2014 | 2015 | | | | | | |
| | | | | | 138 | 122 | 100 | | | | | | |
| Electricity Consumption (kWh) | | | Annual Peak Electricity Load (KW) | | | Electricity Costs as a % of Total Costs | | | Natural Gas Costs as a % of Total Costs | | | Natural Gas Consumption | |
| 2013 | 2014 | 2015 | 2013 | 2014 | 2015 | 2013 | 2014 | 2015 | 2013 | 2014 | 2015 | 2013 | 2014 |
| 17,125,648 | 14,711,488 | 14,344,502 | 5,232 | 4,821 | 5,035 | 6.00% | 5.60% | 5.70% | 1.90% | 2.70% | 2.90% | 107,995 | 113,201 |
| Consumption Pattern (typical day's profile): | | | | | | | | | | | | Participation in: | |
|  | | | | | | | | | | | | OPA Programs | |
| | | | | | | | | | | | | <input type="checkbox"/> Industrial Electricity Incentive | |
| | | | | | | | | | | | | <input checked="" type="checkbox"/> Industrial Conservation Initiative | |
| | | | | | | | | | | | | <input type="checkbox"/> Industrial Accelerator Program | |
| | | | | | | | | | | | | <input type="checkbox"/> Northern Industrial Electricity Rate | |
| | | | | | | | | | | | | <input type="checkbox"/> Fit or Microfit | |
| | | | | | | | | | | | | saveONenergy Programs | |
| | | | | | | | | | | | | <input type="checkbox"/> Demand Response DR3 | |
| | | | | | | | | | | | | <input type="checkbox"/> Small Business Lighting Retrofit Program | |
| | | | | | | | | | | | | <input type="checkbox"/> Unitary AC Incentive | |
| | | | | | | | | | | | | <input checked="" type="checkbox"/> Compressed Air Incentive | |
| | | | | | | | | | | | | <input checked="" type="checkbox"/> Lighting Incentive | |
| | | | | | | | | | | | | <input checked="" type="checkbox"/> VFD Incentive | |
| | | | | | | | | | | | | <input type="checkbox"/> Motors Incentive | |
| | | | | | | | | | | | | <input type="checkbox"/> Peaksaver PLUS | |
| | | | | | | | | | | | | <input checked="" type="checkbox"/> Audit Funding | |
| | | | | | | | | | | | | <input type="checkbox"/> Existing Building Commissioning | |
| | | | | | | | | | | | | <input type="checkbox"/> High Performance Construction | |
| | | | | | | | | | | | | <input type="checkbox"/> Process & Systems Program | |
| Qualified for ICE program for 2014 | | | | | | | | | | | | | |

Ontario Energy Coalition Update

(Your letterhead)

June XX, 2016

Mayor and Members of Council
Community Name
Address

Dear Mayor (*insert Name*) and Council,

Re: Ontario's Global Adjustment & Uncompetitive Industrial Power Rates

I am writing to request that the (*Community Name*) Council pass a motion and write a letter to the Honourable Kathleen Wynne, Premier of Ontario, expressing your Council's concern over the global adjustment portion of the power rates and its increasing negative impact on the ability of our manufacturers to compete with similar manufacturers in North America. The retention of businesses in Northumberland County is an important priority for our community. The motion should request that the Ontario government decrease the global adjustment, develop an industrial power rate and improve the province's competitive position in North America.

Industry is incurring enough challenges to remain competitive against our U.S.A. competitors (*Note if your competition includes sister plants in the U.S.A.*). Our most recent bill, reflects a \$XXX global surcharge on a hydro consumption of only \$XXX almost double the cost of our actual usage. Year to date, we have been billed \$XXX and of that \$XXX is the global surcharge – XX % of our actual hydro consumption.

There is no funding allotted for this global adjustment within our budget and as a result we are eliminating other priorities within our plant to offset this expense, making us less productive, less competitive and eventually less relevant and no longer viable. This puts our facility and XXX jobs we provide locally at risk.

As you know, (*Company Name*) has been a part of the (*Community Name*) community for (XX) years. We employ (XX) people, many of whom live here while we estimate another (XX) people work in businesses that are either direct customers or suppliers to our firm. We export (XX%) of our production to the United States and must compete with companies that have much cheaper power rates. In addition to being a local tax payer, our company supports the following community activities: (*list fund-raisers, ball teams, local beautification efforts, sports complexes, etc.*)

We are not suggesting that you pose solutions to the electricity pricing problem that faces Ontario manufacturers. However, you may wish to note that solutions should not negatively affect residential power customers. I have attached for your information a submission from the Coalition of Ontario Manufacturers for Competitive Industrial Power Rates made to the Standing Committee on Finance and Economic Affairs. It is interesting to note the comparisons of power rates contained in the submission.

Although I am requesting your support from a local manufacturers perspective, I am sure energy costs and Global Adjustment charges are also impacting Municipal facilities and your operating budgets.

I thank you in advance for your support of our request and for your continued support of the local manufacturing sector.

Yours sincerely,

Name and title

Ontario Chamber of Commerce Update

Karl Baldauf,
President, Policy & Government Relations

Eastern Ontario Wardens' Caucus Update

Maddison Ellis,
County of Hastings

IESO Programs & Update

Closing Remarks

- Ontario became an industrial powerhouse in part based on affordable and reliable energy



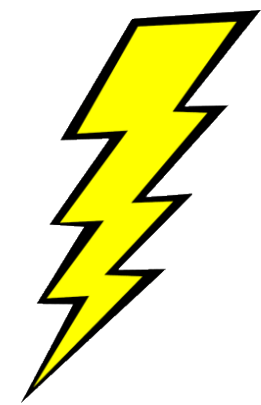
- For Ontario to remain competitive, we need our electricity rates to stay competitive

*"When I was young, I was scared of the dark.
Now when I see my electricity bill I am scared of the lights."*

CALL TO ACTION

- Inform your MPP & municipal leaders of your Energy story
 - Draft form letters are available from the NMA
- Use saveONenergy, demand response, 5CP & conserve energy
- Support the Coalition of Ontario Manufacturers for Competitive Industrial Power Rates
- Provide your information (anonymously) as an industry energy case study





THANK YOU!

Together we can make a difference!



Northumberland Manufacturers' Association

bradley.robertson@escocorp.com

judy.selvig@thenma.ca

charlene.smith@thenma.ca