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

➢ Closing Remarks - Call to Action
Energy
“State of the Union”
Overview
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.
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
COMPARING OUR ENERGY MIX TO OUR NEIGHBOURS
Figure 9: Generation and Conservation Cost of Options

Energy Efficiency
New Nuclear
Nuclear Refurb
Gas Turbine
Combined Heat and Power
Hydroelectric*
Wind*
Solar*
Bioenergy*

* Updated for January 2014 Feed-in Tariff prices

2013 $/MWh

Relative Costs of Electricity
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.
## GLOBAL ADJUSTMENT

<table>
<thead>
<tr>
<th>Service Address</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>ESCO LIMITED</td>
<td>PORT HOPE</td>
</tr>
<tr>
<td>185 HOPE ST S</td>
<td></td>
</tr>
</tbody>
</table>

### Amount Previously Billed
- **Previous Balance:** 
- **Payment:** Jul 04, 2016 - Thank You

### 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:** 0.0000530/0
- **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-R70001):**

### Total Due By Aug 11, 2016

### Electricity Consumption

<table>
<thead>
<tr>
<th>Meter No</th>
<th>Billing Period</th>
<th>Days</th>
<th>kWh Used (1)</th>
<th>For Month (1)</th>
<th>7 am - 7 pm Weekdays (4)</th>
</tr>
</thead>
<tbody>
<tr>
<td>VC00250604</td>
<td>May 31, 2016 to Jun 30, 2016</td>
<td>30</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(1) The charges for these items are based on kWs 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.

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**NMA**

**NORTHUMBERLAND MANUFACTURERS ASSOCIATION**
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.
Figure 8: Industrial Electricity Price Forecast

A typical large industrial consumer is expected to pay $3 million less than the previous forecast in the near-term (2013 to 2017), and $11 million less over the life of the plan (2013 to 2030).*

* 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

- Ontario, Class A
- Ontario, Class B
- Alberta
- British Columbia
- Manitoba
- New Brunswick
- Quebec

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

- Ontario, Class A
- Ontario, Class B
- US Midwest Region
- US Northeast Region
- US South Region
- US West Region

Figure 2: Ontario's Clean Supply Mix

Northumberland Manufacturers Association (NMA)
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

2 Year Actual Electricity Cost & 2016 Budget

- 2014 Cost: $12,369,713
- 2015 Cost: $13,463,997
- Est 2016 Budget: $14,081,073
Energy Survey Results

2016 Electricity Billing to May

- January
- February
- March
- April
- May

- Electricity
- Delivery
- Regulatory Charges
- Debt Retirement
- Global Adjustment
- Total Bill
Energy Survey Results

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

- Debt Retirement (6%)
- Delivery (13%)
- Regulatory Charges (13%)
- Electricity (9%)
- Global Adjustment (59%)
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

<table>
<thead>
<tr>
<th>8 hours shifts with staggered start times</th>
<th>Foundry Operational Days/Week</th>
<th>Finishing Operational Days/Week</th>
</tr>
</thead>
<tbody>
<tr>
<td>Days: 7 am - 3 pm</td>
<td>2013 3 2 2 3 2.5</td>
<td>2013 3 2 2 3 2.5</td>
</tr>
<tr>
<td>Afternoons: 3 pm - 11 pm</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Locale: Eastern Ontario</th>
<th>Natural Gas Costs as a % of Total Costs</th>
<th>Natural Gas Consumption</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exporting: % Product for Canada</td>
<td>15 85</td>
<td>107,995 113,201</td>
</tr>
<tr>
<td></td>
<td>17,125,648 14,711,488 14,344,502</td>
<td>5,232 4,821 5,035</td>
</tr>
<tr>
<td></td>
<td>6.00% 5.60% 5.70%</td>
<td>1.90% 2.70% 2.90%</td>
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</table>

**Electricity Consumption (kWh)**

<table>
<thead>
<tr>
<th>Days: 7 am - 3 pm</th>
<th>Afternoons: 3 pm - 11 pm</th>
<th>Midnights: 11 pm - 7 am</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electricity Costs as a % of Total Costs</td>
<td>2013 2014 2015</td>
<td>2013 2014 2015</td>
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<tr>
<td>6.00% 5.60% 5.70%</td>
<td>1.90% 2.70% 2.90%</td>
<td>107,995 113,201</td>
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**Manpower Total (hourly unionized & salaried)**

<table>
<thead>
<tr>
<th>Electricity Consumption (kWh)</th>
<th>Annual Peak Electricity Load (KW)</th>
<th>Electricity Costs as a % of Total Costs</th>
<th>Natural Gas Costs as a % of Total Costs</th>
</tr>
</thead>
<tbody>
<tr>
<td>17,125,648 14,711,488 14,344,502</td>
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<td>6.00% 5.60% 5.70%</td>
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</tr>
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**Consumption Pattern (typical day’s profile):**

- **Days: 7 am - 3 pm**
- **Afternoons: 3 pm - 11 pm**
- **Midnights: 11 pm - 7 am**

**Participation in:**

- OPA Programs
- Industrial Electricity Incentive
- Industrial Conservation Initiative
- Industrial Accelerator Program
- Northern Industrial Electricity Rate
- Fit or Microfit

**saveONenergy Programs**

- Demand Response DR3
- Small Business Lighting Retrofit Program
- Unitary AC Incentive
- Compressed Air Incentive
- Lighting Incentive
- VFD Incentive
- Motors Incentive
- Peaksaver PLUS
- Audit Funding
- Existing Building Commissioning
- High Performance Construction
- Process & Systems Program

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Download the Sector Energy Case Studies at [thenma.ca](http://thenma.ca)
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 $XXXX 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 (XXX) 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 manufacturer 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

NMA
NORTHUMBERLAND MANUFACTURERS ASSOCIATION
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
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judy.selvig@thenma.ca
charlene.smith@thenma.ca