

## GEC Response to IGUA Interrogatory #1

### Question:

Reference: L.GEC.1 Pages 3-4.

The evidence asserts: *“New Provincial policy commitments to carbon emission reductions should render 2014 [DSM] budget guidance obsolete.”* Particular reference is made to the Ontario government’s commitment to imposing a carbon “cap-and-trade” policy for meeting GHG emission reduction requirements.

- (a) Please detail Mr. Neme’s understanding of how Ontario’s proposed “cap- and-trade” policy will be implemented, including:
  - (i) Parameters for determining which large volume gas consumers will be directly subject to the policy.
  - (ii) What emission reduction requirements will be placed on those large volume gas consumers directly subject to the policy.
  - (iii) What the costs of meeting those emission reduction requirements is likely to be for the directly affected large volume gas consumers.
  - (iv) Timing for implementation of the policy.
- (b) Please explain how the requirements and associated costs for large volume gas consumers directly affected by Ontario’s proposed “cap-and- trade” policy for fulfilling their obligations under that policy relate to/interact with requirements for those customers to contribute to, and opportunities for those customers to partake in, Union and EGD’s proposed large volume customer DSM programs for the period 2015-2020.
- (c) How can the OEB ensure that those large volume gas consumers directly affected by Ontario’s proposed “cap-and-trade” policy do not pay twice for meeting their own emission reduction requirements?

### Response:

- (a) Neither Mr. Neme nor Mr. Chernick have insider information on these issues. However, the May 2015 presentation by the Ministry for the Environment and Climate Change (see attached) provides some insight into the government’s current thinking.
  - (i) A cut-off of 25,000 tonne/year has been proposed.

Witness: Chris Neme, Paul Chernick

- (ii) The regulations are not likely to require emission reductions, but to encourage reductions by requiring the purchase of allowances for emissions above the allocation and allowing sale of allowances for emissions below the allocation. Mr. Neme and Mr. Chernick are not aware of any official proposals for sectoral caps or allowance allocations.
  - (iii) Mr. Neme and Mr. Chernick cannot say what the costs would be. The answer may be very site-specific. However, to the extent that LVCs respond by increasing investment in energy efficiency that is already cost-effective (i.e. without the cost of carbon allowances), the cost could be negative (on a net present value basis).
  - (iv) In order for the cap-and-trade policy to be effective in reducing emissions in 2020, it would need to be implemented by 2017 or 2018. The “illustrative cap” in the May 2015 presentation appears to start in 2017 or 2018. The presentation also discusses bonus allocations for early action, which would presumably be in 2016 or 2017.
- (b) See M.GEC.APPrO.4.
- (c) The cap-and-trade system is unlikely to charge the large-volume customers twice for their carbon emissions. Based on practice elsewhere, the allowance requirements for the gas utilities will almost certainly be reduced by the amount of gas delivered to large-volume customers, avoiding double-counting. The OEB should ensure that the utilities’ costs of allowances are allocated to the customers whose usage is included in the utilities’ responsibility and not to whatever large-volume customers are directly covered and are thus responsible for their own emissions.

# **Greenhouse Gas Emissions Reductions Consultation on Cap and Trade**

Ministry of the Environment and Climate Change

May 7, 2015

Confidential

# Program Design

- Ontario will be designing a program that can link to the joint Quebec/California program
  - Linking will create access to a larger pool of low-cost abatement opportunities
  - Larger market is more stable, and Ontario can realize savings from sharing implementation costs with other jurisdictions.

## Implications for Ontario

- Distribution of allowances to facilities is left to individual jurisdictions, but linking could require harmonization of some rules, including:
  - Price stability mechanisms (e.g., reserve prices for allowance auctions).
  - Trading rules to ensure transparency (e.g., reporting trades within a specified time).
  - Market rules (e.g., disclosure requirements on corporate affiliations, limits on number of allowances that a company can hold).
  - Limits on the use of offsets (e.g., 8% of compliance obligation).
  - Enforcement provisions (e.g., administrative penalties) to ensure compliance since non-compliance would weaken the program for all participating jurisdictions.

# Cap and Trade

- Key Areas of Program Design
  - Scope: Sectors and Emissions
  - Cap Stringency, Decline and Timing
  - Offsets
  - Distribution of Allowances
  - Recognition of Early Action
  - Emissions Reporting and Verification
  - Linking

# Scope: Sectors and Emissions

*What sectors should be covered by the cap and trade program?*

*What types of emissions should be covered?*

## **Sectors Covered**

- An economy-wide approach ensures the maximum environmental benefit and supports market stability
- Quebec and California started with electricity and industry and expanded to cover heating and transportation fuels in 2015
- An Ontario program is proposed to cover:
  - Large emitters (>25,000 t): industry, institutions, waste management, utilities
  - Electricity generators and importers
  - Liquid petroleum fuel distributors and importers
  - Natural gas distributors

## **Combustion Emissions**

- Emissions from burning fuel for heating or industrial furnaces

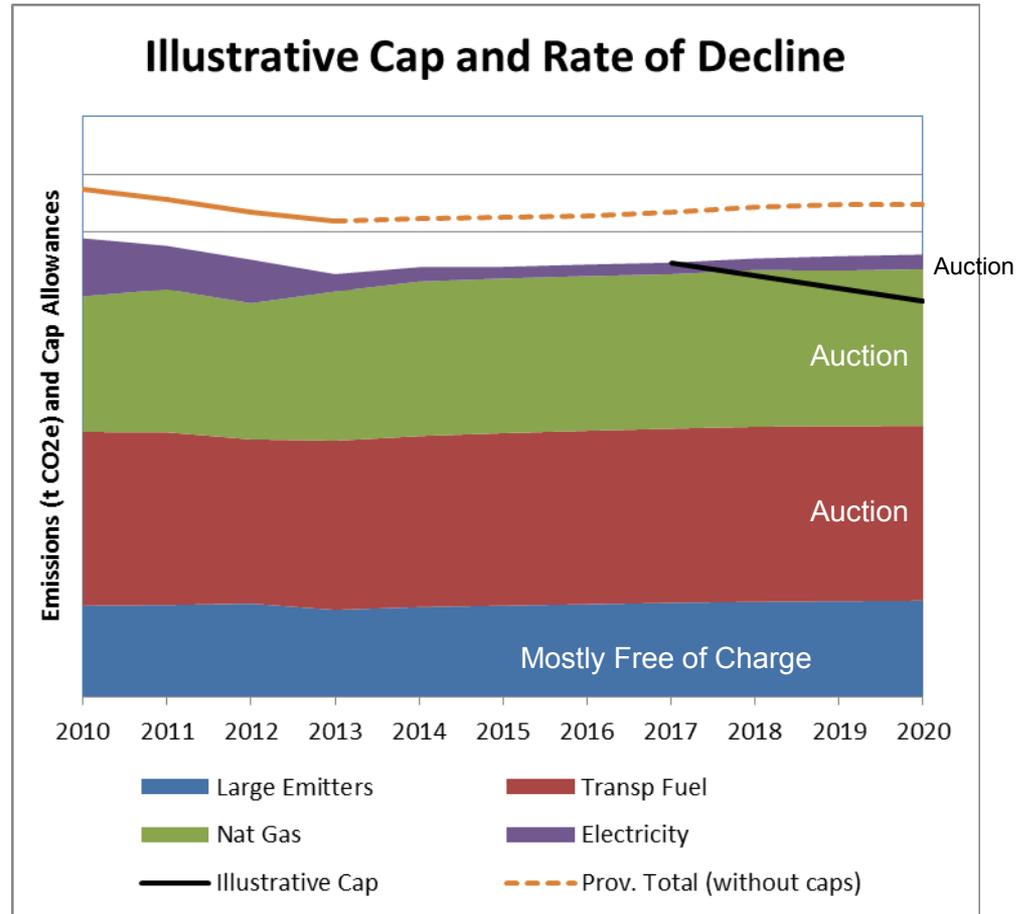
## **Process emissions**

- Emissions from chemical or physical reactions as part of production
- California and Quebec cover both combustion and process emissions.
- Alberta covers only combustion emissions.
- An Ontario program is proposed to cover both types of emissions to create and maintain an incentive to reduce emissions from all sources

# Cap Stringency and Rate of Decline

*What should be the rate of decline towards 2020?*

- An economy-wide cap decline between 2-3% per year could put Ontario on track to meet its 2020 emissions target (exact figures to be confirmed)
- Caps in Quebec and California programs decline at more than 3% per year
- Other climate critical elements included in Ontario's Climate Change Strategy will also support achievement of provincial targets



# Offsets

## *What are the most important project types for Ontario?*

- Offsets are projects undertaken by entities outside of the covered sectors that either reduce emissions or remove carbon from the atmosphere.
  - Examples in Ontario include manure management and destruction of ozone-depleting substances
- Offsets can be sold to covered facilities to use for compliance purposes, in place of allowances, providing another low cost compliance option.
- Quebec and California impose limits on the amount of offsets that can be used by entities for compliance, ensuring reductions occur within their borders

# Distribution of Allowances

*How can the allocation of allowances help address potential competitiveness concerns?*

*How should allowances be distributed to fuel suppliers (gas and liquid petroleum) and electricity generators?*

*How should new emitters be treated under the program?*

- Allowances to be distributed free-of-charge and at auction
- Methods for allocating allowances will be the focus of sector-specific stakeholder consultations.
  - Allocation free of charge can help address competitiveness impacts on trade exposed emitters.
  - Auctions for sectors that are not trade exposed, including fuel distributors and electricity generators
  - A strategic reserve of allowances can also be made available for sale (at predetermined prices) to maintain price stability
  - Quebec and California both provide free allowances to large emitters through a combination of product benchmarks and energy usage methods.
- Allocations will also need to consider how growth can be accommodated, including new entrants.

# Timing and Recognition of Early Action

*Should Ontario have specific provisions for reward for early action?*

- Quebec has rules for awarding early action allowances to facilities that improved their performance prior to the start of a program (California does not).
- Benchmarking can reward early reductions as part of the allocation process
  - Facilities that have taken early action will receive more allowances, relative to their emissions, than facilities that have not.

# Emissions Reporting and Verification

- Changes to the emissions reporting regulation will be required to accommodate the creation of a cap and trade program
- Quebec and California reporting requirements have lower reporting thresholds and broader coverage:
  - 10,000 tonne threshold (25,000 tonnes for Ontario)
  - Includes additional sources - liquid petroleum and natural gas fuel suppliers, electricity importers, electricity transmissions, oil and gas pipeline (methane emissions), magnesium production
- Allocation of many allowances will be based on facilities' production
  - Third party verification for all *production* data, used to support allowance allocation
  - The scope of the current verification requirements need to encompass the verification of all production values since these are used as the basis for distribution of allowances free of charge

# Proposed Key Timelines

## **Spring/Summer 2015:**

- Consultations on program design, focussing on allowance allocations methods and common understanding of any competitiveness implications

## **Fall 2015:**

- Regulatory proposal posted on the Environmental Registry for comments

## **Summer 2016:**

- Final regulation posted on the Environmental Registry

## GEC Response to IGUA Interrogatory #2

### Question:

Reference: Exhibit L.GEC.1, Page 5.

The evidence states: *“There is also no empirical evidence – from Ontario or any other jurisdiction – to suggest that large customers pursue all cost effective efficiency measures absent efficiency programs.”*

- (a) Please detail Mr. Neme’s direct experience regarding evaluation of investment decisions (in energy efficiency or otherwise) by large volume industrial gas consumers.
- (b) Please define the term *“cost effective”* as used in the referenced statement.
- (c) What factors does Mr. Neme believe a large volume industrial gas consumer should consider in determining whether an energy efficiency investment can/should be made?

### Response:

- (a) Mr. Neme has extensive experience – more than 20 years in more than 25 different states, several Canadian provinces and several countries in Europe – with reviewing the designs and evaluating the impacts of hundreds (if not thousands) of energy efficiency programs, including programs targeted to large volume industrial customers. That experience is summarized in his CV.
- (b) The term *“cost-effective”* as used in the referenced statement is defined as used under the Total Resource Cost (TRC) test.
- (c) All business customers, including large volume customers, should make investment decisions that are consistent with their business objectives. In many cases, those business objectives may not be entirely inconsistent with decisions that would be made from the utility system or societal perspective. For example, some business customers require much higher rates of return on internal investments than utilities do on their investments. That misalignment is one of the *“market barriers”* that DSM is intended to address. Another example would be a case in which a business customer’s priorities for investment of staff time preclude assessment of efficiency opportunities that could save money. Again, that is the kind of market barrier that DSM programs are designed to overcome.

Witness: Chris Neme

### **GEC Response to IGUA Interrogatory #3**

#### **Question:**

Reference: Exhibit L.GEC.1, Page 5.

The evidence suggests an opt out provision “*for those customers that can truly demonstrate that they have already comprehensively addressed all cost-effective efficiency opportunities*”, and refers to similar mechanisms used in other jurisdictions.

The evidence suggests, by way of example, applying a 10 year payback test to determining whether “*all cost-effective efficiency opportunities*” have been addressed.

- (a) Please detail the factors that led Mr. Neme to suggest 10 years as an appropriate payback period.
- (b) Please detail Mr. Neme’s experience in “business case” type financial analysis for internal investments (in energy efficiency or otherwise) by large volume industrial gas consumers. In so doing please discuss the range of payback periods used in such analyses and explain what factors are typically determined in choosing the payback period appropriate for particular types of investments.
- (c) In responding to these questions, please specifically address considerations relevant to the opportunity cost of capital required for such internal investments, and how the financial implications of those opportunity costs are typically dealt with in the relevant business case analyses.

#### **Response:**

- (a) It is a simple approach that would be easy to explain and administer and is used in a similar way in a couple of other jurisdictions. It also may well be a lower standard than assessing cost-effectiveness through the TRC (i.e. fewer projects may meet the standard than would meet the TRC cost-effectiveness standard).
- (b) See response to M.GEC.IGUA.2.
- (c) The question highlights one important role of utility-sponsored energy-efficiency programs for large customers. A business unit may have a limited allocation of capital from the parent company and may thus need to compare the benefits of energy-efficiency investments with the benefits of other investments (e.g., to increase output or improve quality or safety). The utility DSM can overcome that capital-allocation constraint, allowing the customer to pursue both energy-efficiency and other investments.

Witness: Chris Neme

### **GEC Response to IGUA Interrogatory #4**

#### **Question:**

Reference: Exhibit L.GEC.1, Page 31.

The evidence cites two recent studies (see footnotes 69 and 71) in support of the proposition that “free ridership” rates for commercial and industrial customers are significantly less than 100%, indicating that much of the claimed savings related to the ratepayer funded programs studied would not have occurred without the ratepayer funded programs.

- (a) Do the studies break down the subject customers by customer type (e.g. small commercial, large commercial, small industrial, large industrial)?
- (b) If so, please provided the definitions used in the studies for each such customer type, and provide the reported free ridership rates for each such customer type.
- (c) If not, please provide the range of customer types covered in the aggregated “free ridership” rates cited in GEC’s evidence.

#### **Response:**

- (a) The first study referenced – that 2013 Navigant jurisdictional review (footnote 69) – does break down results for different regions, fuel types, and program types. The results vary a little based on some of those parameters, but not a lot. For example, free rider rates may be a hair higher for prescriptive C&I rebates than for Custom C&I programs. I focused on the Custom program results. The study also attempted to separately assess results for commercial vs. industrial and some other market segments (see Figure 10, p. 25). There were only four studies found with industrial only results. Those four studies had free rider rates of roughly 80%, 65%, 65% and 30% – or an average of about 60%. There were no studies that looked at the combined effects of free ridership and spillover for just industrial customers. There was also not a distinction made between small and large industrial customers. However, in my experience most industrial savings from utility programs come from larger industrial customers, and any study of free ridership would need to produce savings weighted results, so I would imagine that these results were largely reflective of results from larger industrial customers.

The second study referenced – the 2015 Navigant study of Utah’s Self Direct program – focuses, by definition, on larger customers.<sup>1</sup> This is the only Self Direct program

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<sup>1</sup> Minimum requirements for program participation were either 1 MW of peak demand or 5 million kWh of annual electricity consumption.

Witness: Chris Neme

evaluation that I could find that quantified free ridership and/or net-to-gross estimates. Both commercial and industrial customers are covered by the Utah program. Over a two year period (2012 and 2013), there were 59 projects. 33 of those projects were in 2012, with 20 of them (roughly 60%) being implemented by industrial customers.<sup>2</sup> The study did not separately estimate free ridership or NTG ratios for commercial and/or industrial customers.

(b) See response to (a)

(c) See response to (a)

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<sup>2</sup> Rocky Mountain Power, "Appendix 10: Utah Self-Direction Administrators Report, April 19, 2013 (see <http://www.psc.utah.gov/utilities/electric/13docs/1303571/243854Exhibit%20J%20to%20DSM%20Report%205-1-2013.pdf>)

Witness: Chris Neme

### **GEC Response to IGUA Interrogatory #5**

**Question:**

Reference: Exhibit L.GEC.1, Page 33.

The evidence references implementation of the proposed “opt out” mechanism by way of a “payback mechanism”.

- (a) Please explain the advantages of such a “payback mechanism”.
- (b) Please explain how such a “payback mechanism” would work.
- (c) Are there precedents for such a mechanism in other jurisdictions? If so, please comment on why they were adopted, their implementation and their effectiveness.

**Response:**

- (a) The only reason for suggesting this concept is to address any potential concerns about the viability of a pure “opt out”.
- (b) The idea is that customers that had demonstrated that they had already made investments in all cost-effective efficiency measures could be paid their “self-direct” allocation as if they were receiving an incentive for a new efficiency project.
- (c) Mr. Neme is not aware of a jurisdiction which has used such a mechanism because those that were interested in allowing “opt outs” for customers who demonstrate that they have already done all cost-effective efficiency appear to have been able to pursue that optional “opt out” approach (and therefore did not need to explore an alternative).

Witness: Chris Neme