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# Implementation of Allocating Cap and Trade Auction Funds to Electricity Consumers

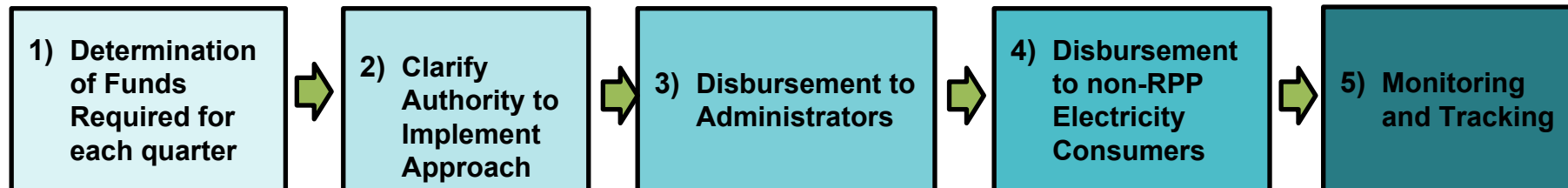
Working Draft

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CONFIDENTIAL DRAFT

# Context

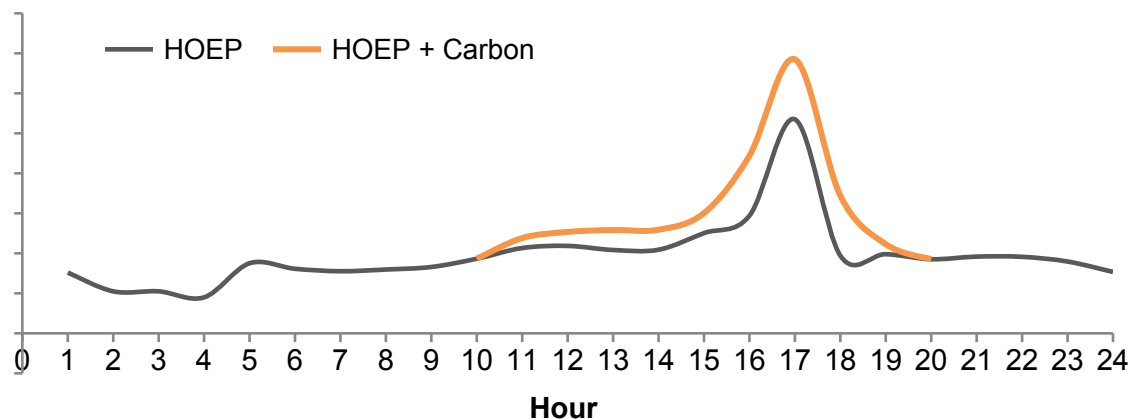
- The Ministry of Energy is proceeding to implement an approach to allocate Greenhouse Gas Reduction Account (GGRA) funds, referred to throughout as “cap and trade auction funds”, “volumetrically in all hours” to address the 2016 Budget commitment.
- Formal approval for the proposed approach would involve:
  - Legislation and Regulation Committee (i.e., January 31, 2016); and
  - Cabinet (i.e., January 31, 2017). Note: LRC will sit as Cabinet immediately following LRC.
- Once LRC/Cabinet approval has been received on the proposed approach, approval would be required for the Ministry of Energy to receive the funding through:
  - Minister of Environment and Climate Change Review (TBD); and
  - TBS / PRRT approvals and requirements (TBD).
- Funds would not be allocated to electricity consumers until they have been made available following completion of the first auction and after local distribution companies (LDCs) and Independent Electricity System Operator (IESO) have completed necessary billing system changes.
- Implementation requires ongoing work with IESO, Ontario Energy Board (OEB) and LDCs.
- A number of steps are outlined below and will be described in the following slides.



# Context – Impact of Cap and Trade on the Electricity Price

- The Hourly Ontario Energy Price (HOEP) is the hour-by-hour market clearing price that reflects the short run cost of producing electricity in Ontario.
- The HOEP is set by the last generator dispatched to meet demand. In peak hours this is typically a natural gas-fired power plant.
- An offer into the electricity market from a natural gas-fired power plant is primarily comprised of their fuel cost and varies with natural gas commodity prices.
- Under cap and trade, HOEP will increase when natural gas-fired plants set the price as they will include the cost of carbon in their offers – making electricity less competitive with energy from fossil fuels.

**Illustrative Hourly Ontario Energy Price (\$/MWh)**



## Context – Stakeholder Concerns

- Small-Medium Enterprises (SMEs), including those represented by the Coalition of Concerned Manufacturers and Canadian Manufacturers and Exporters, have raised concerns that cap and trade would increase electricity costs at a detriment to their competitiveness with other jurisdictions.
- These stakeholders have received extensive coverage in the media, bringing further attention to the issue of increasing electricity prices, which was already receiving significant media attention. In particular, a number of manufacturers have been quoted in recent media coverage indicating that they will have to shut down/move their operations to other jurisdictions if electricity rates do not decrease in Ontario.

*“Ontario’s energy costs are rising so quickly many manufacturers are reassessing whether it makes sense to expand production in this province.”*

*“Ontario stands to lose good, high-paying jobs if something is not done in the next budget to mitigate the negative impacts that cap-and-trade will have on smaller manufacturers across the province.”*

-- Jocelyn Williams Bamford, Automatic Coating Ltd and Coalition of Concerned Manufacturers

- Typically these SMEs are not large enough to be eligible for free allowances under the cap and trade program, and also not large enough to be Class A consumers and benefit from ICI participation.
- Using funds from the cap and trade auction would encourage companies to use electricity instead of more GHG-intensive fuel sources for heating and transportation over the long-term.
- By retaining SMEs and new investment in Ontario, as well as incenting fuel shifting, the consumption of more GHG-intensive electricity generation in other jurisdictions could be mitigated.

# Cap and Trade Auction Funds Proposal

# Proposal – Allocating Funds Volumetrically in All Hours

- To meet Budget 2016 requirement, ENERGY proposes an allocation of an annual average of \$270 million in cap and trade auction funds through a volumetric mechanism in “all hours” to commercial and industrial electricity consumers.
  - Proposal would allocate an annual average of approximately \$150 million for Class B electricity consumers (i.e., commercial and industrial consumers with less than 1 MW demand) and approximately \$120 million per year for Class A electricity consumers (i.e., industrials with demand above 1 MW) over the first compliance period (2017-2020).

## **Considerations**

- Consistent with the September 2016 commitment to use cap and trade auction funds to provide a net benefit to commercial and industrial electricity consumers.
- By lowering the cost of cleaner electricity to make it more competitive with traditionally cheaper fossil fuels, this option is intended to modify consumer behaviour by incenting energy consumers to shift energy consumption from energy derived from fossil fuel to energy derived from electricity.
- This option would maintain the price differential between on- and off-peak hours, thereby encouraging behavioural change.

## Allocating Funds Volumetrically in “All Hours” – Variation in Electricity Costs

**Note:** The graph is based on transmission-connected industrials reflecting about 70 of the 300 Class A electricity consumers that participate in the Industrial Conservation Initiative (ICI) which allows Class A consumers to be billed Global Adjustment (GA) based on a system-wide contribution to overall demand basis. Class B are billed GA volumetrically. While the graph shows an average, there is variation between individual facilities within sectors for Class A. Class B consumer with a day shift is assumed to consume 70% on-peak. The above impacts do not include the cost of ICI expansion (impact of \$1/MWh) and the Rural or Remote Rate Protection update (impact of \$0.76/MWh).

# Allocating Funds Volumetrically in “All Hours” – Impact of Cap and Trade on Commercial Electricity Consumers

- There is significant variation in the commodity cost paid by electricity consumers due to differences in their Global Adjustment (GA) costs.
- GA paid by Class A electricity consumers varies depending on their ability to take advantage of the Industrial Conservation Initiative (ICI) and reduce consumption during peak hours. Under ICI, large electricity consumers pay GA based on their share of peak demand during the five peak hours of the year.
  - Under the volumetric “all hours” approach, companies with limited ability to significantly change their operations (typically due to high labour costs and/or strict production schedules) would be treated the same as those with the ability to avoid the top five peaks to pay lower GA while consuming on-peak in all other hours.
- GA paid by Class B electricity consumers is a volumetric rate that is applied to every unit of electricity consumption.
  - A Class B small-medium enterprise (SME) that operates predominantly during the day would see an increase relative to what they otherwise would have paid absent of cap and trade.
  - Under volumetric “all hours” recycling, this SME would be no worse off and would see a small net benefit for electricity.

# Allocating Funds Volumetrically in “All Hours” – Linkage to GHG Reductions

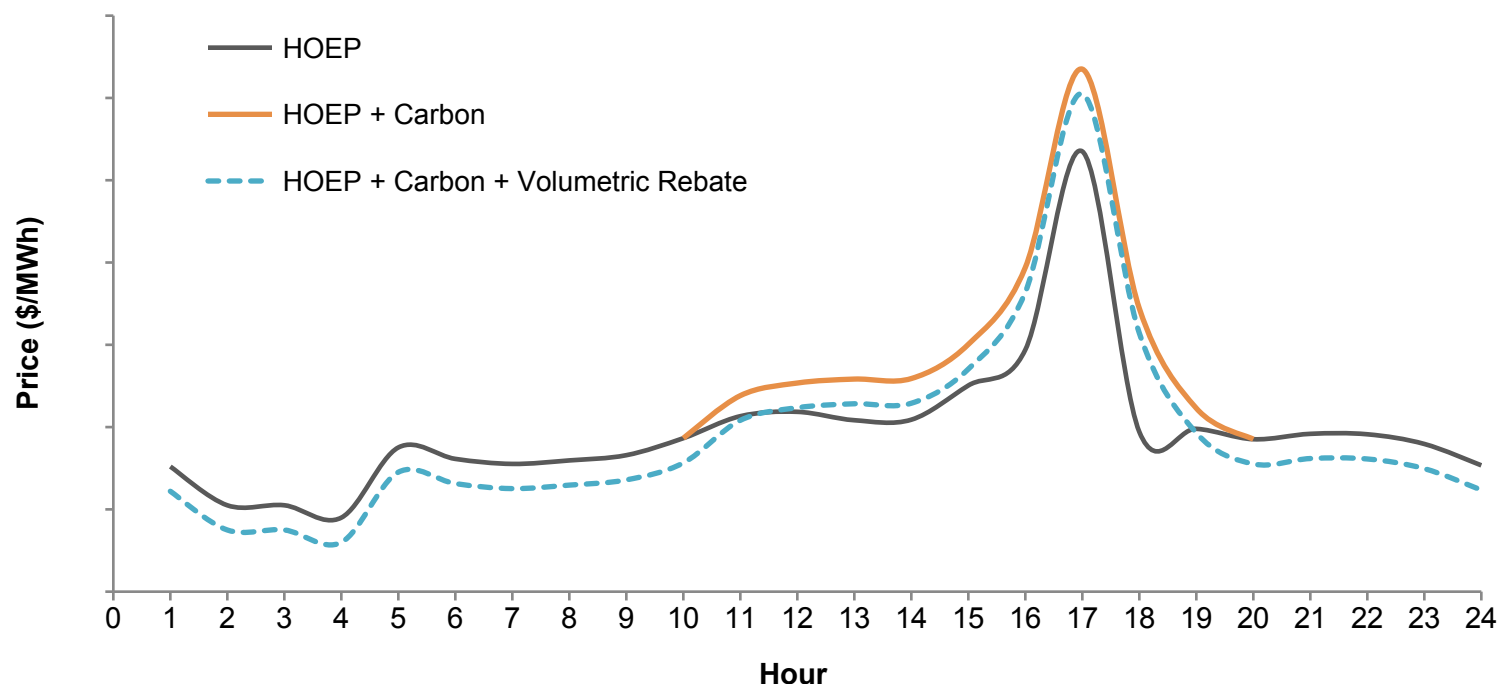
- The proposed approach is intended to reduce or support the reduction of GHG emissions by providing a price incentive to modify consumer behaviour by shifting energy consumption from fossil fuel sources to electricity.
  - The Ministry of Energy is currently developing analysis that will estimate the potential GHG reductions that could be expected to be achieved when the price of electricity is lowered.

## **Considerations**

- Economic theory dictates that more electricity is expected to be consumed as the price difference between electricity and fossil fuels is reduced.
  - The Ministry of Energy’s analysis will consider the short-term and long-term price elasticity of demand of electricity through the first compliance period.
- The analysis by the Ministry of Energy will help to inform forecasts of the level of fuel switching from fossil fuels to electricity that may occur when electricity is made relatively more affordable.
- Further analysis and reporting may be required as part of MOECC’s annual reporting on the progress of the CCAP.

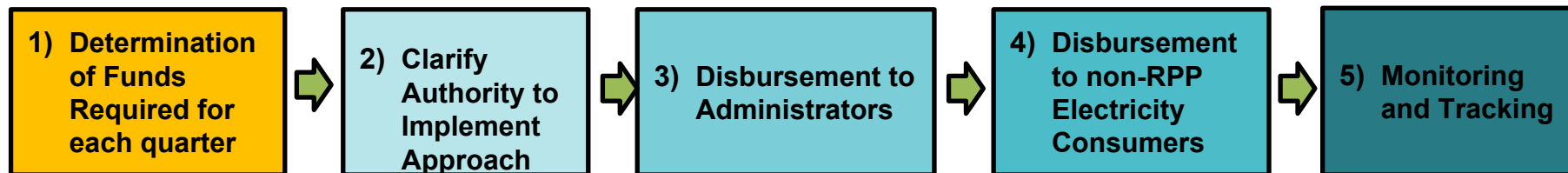
## Allocating Funds Volumetrically in “All Hours” – Illustrative Example

- Cap and trade will result in an increase in on-peak electricity prices. Allocating a portion of funds from the cap and trade auction volumetrically across “all hours” would maintain the economic incentive for off-peak electricity usage.



## Implementation of Volumetric All-Hours Approach

# Step 1 – Determination of Funds Required

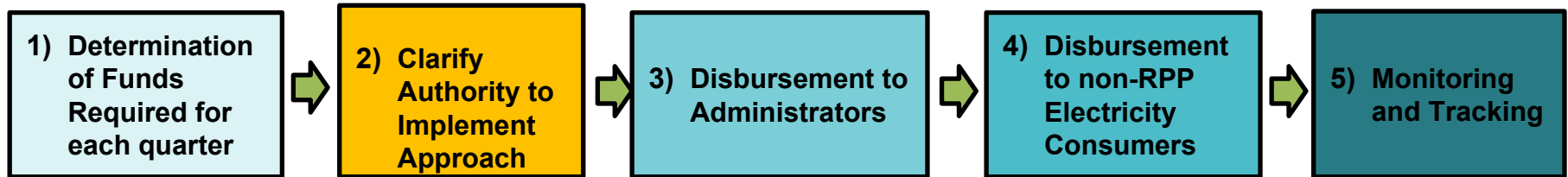


- ENERGY, working with IESO, to provide an estimate of funds needed for application to electricity consumers under the volumetric all-hours approach each quarter/year to inform:
  - ENERGY's Greenhouse Gas Reduction Account (GGRA) funding request;
  - TB and/or PRRT submissions; and
  - Minister of the Environment and Climate Change Review (TBD).
- The estimate would reflect the forecast impact of carbon costs on the electricity system.

## Considerations

- ENERGY has undertaken a preliminary estimate of funds needed for the proposed approach (see appendix).
- Ontario's cap and trade program came into effect of January 1, 2017, but funds are not expected to be available until April 2017 at the earliest.
- Note: Given the low initial carbon price of \$20 per megatonne and the limited amount of GHG emitting generation in Ontario, the financial impact for most electricity consumers and market participants over the period beginning January 1, 2017 to when they would receive funds following the first cap and trade auction is expected to be modest.

## Step 2 – Clarify Authority to Allocate Funds



- Neither the *Electricity Act, 1998* nor the *Ontario Energy Board Act* contemplate the use of funds from cap and trade.
- A Directive, under Section 27.1 of the OEB Act, approved by Cabinet (OIC), issued by the Minister of Energy (OIC and Directive) to the OEB would provide a mechanism for ENERGY's proposal. This would include a step-by-step process and a schedule related to the disbursement requirements of the IESO to LDCs and of LDCs to electricity consumers.
- The OIC and Directive would require the OEB to amend license conditions and its own codes in order to implement. The OEB could hold a hearing although the bulk of its work is expected to be done through its code amendment processes which are usually more streamlined.
- A Memorandum of Understanding (MOU) / Service Level Agreement between ENERGY and the IESO would also set out the process, reporting and information requirements.

### **Considerations**

- Timing: The item is currently scheduled for the January 31, 2017 meeting of the Legislation and Regulation Committee.

## Steps 3 and 4 – Disbursements of Funds

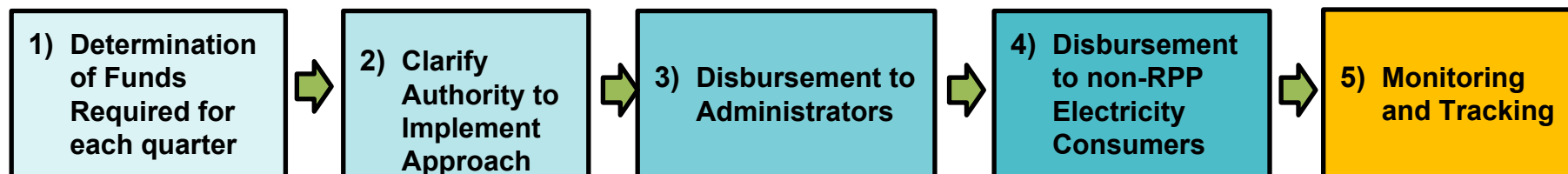


- ENERGY would receive funds from the GGRA.
  - ENERGY would flow amounts to the IESO. IESO would set up a new account to receive these funds from ENERGY. Similarly, LDCs would each have an account to receive funds from IESO.
- IESO would allocate an amount of the funds received from ENERGY for transmission-connected customers (i.e., for those customers that have their bills settled by IESO).
- LDCs would report to IESO the required amount of funding needed for their customers. IESO would then allocate amounts to LDCs for distribution to LDC customers.

### Considerations

- A decision has not been made on bill presentment. A separate line item for Class A and non-residential Class B electricity consumers' bills could be required. Staff analysis is ongoing.
- The IESO and LDCs would require billing system changes to facilitate the disbursement of funds to electricity consumers. -

## Step 5 – Monitoring and Tracking

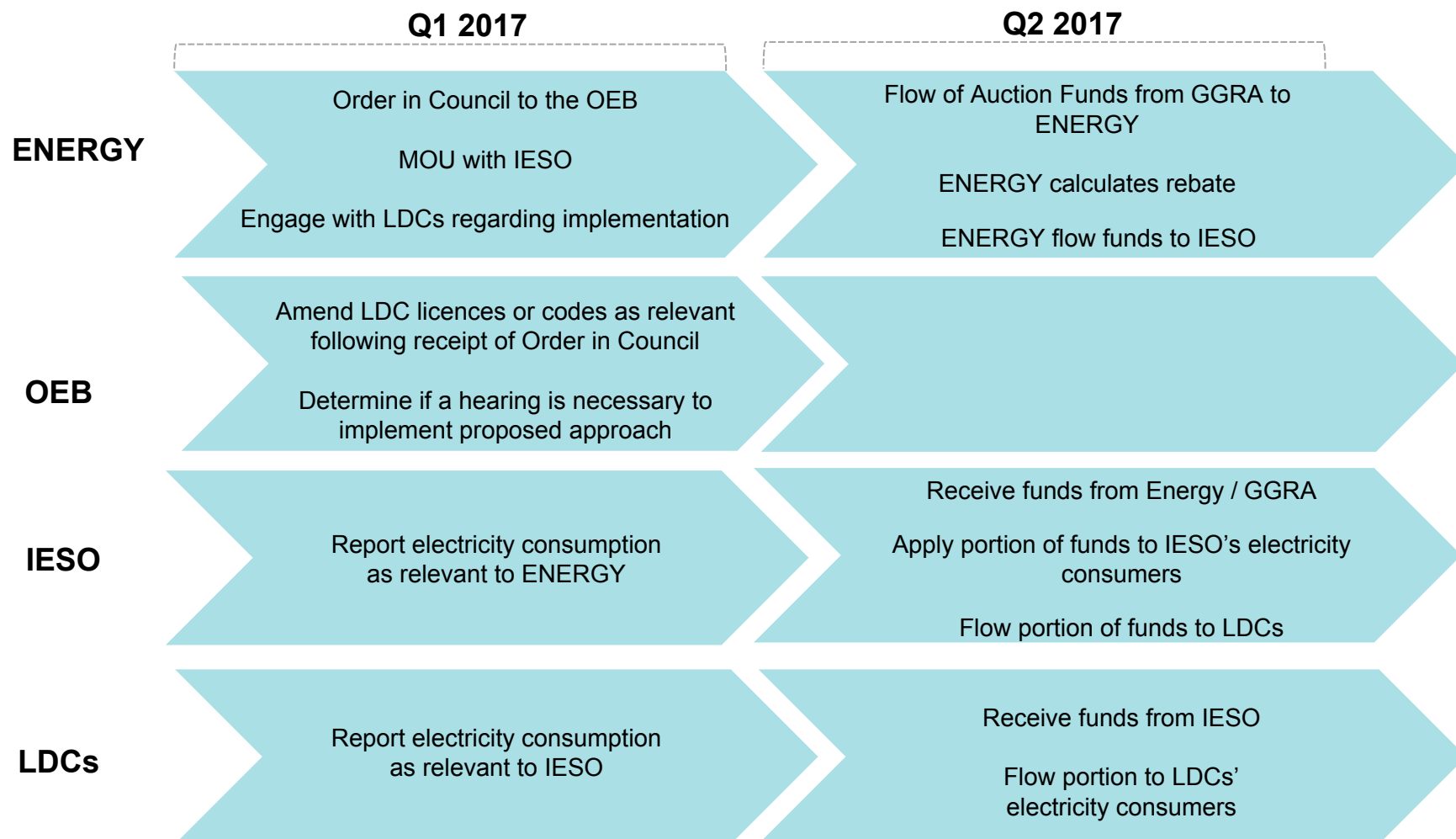


- The proposed option will require the monitoring and tracking of the impact of carbon costs on HOEP.
- ENERGY will be responsible for the monitoring and tracking the impact of carbon costs on an ongoing basis.

### Considerations

- True-up of any difference between the calculated and actual cost of carbon would be provided to electricity consumers in the next fiscal year.

# Next Steps



## Appendix

1. Options to Allocate Cap and Trade Funds
2. Illustrative Impact to Electricity Consumers (2017-2020)
3. Average Annual Level of Funds Required

# Options to Allocate Cap and Trade Funds – Overview

- Allocating cap and trade auction funds to lower the cost of electricity would:
  - Incent behavioural change towards consuming electricity during off-peak times.
  - Support CCAP goal of lowering GHG's through fuel-switching and electrification; and
  - Offset consumers' contributions to investments/initiatives which reduce GHGs (e.g., non-emitting generation and conservation programs);
- The proposed options for utilizing GGRA funds include:
  1. Flowing GGRA funds to electricity consumers via Global Adjustment (GA) (Option 1);
  2. Flowing GGRA funds volumetrically in “all hours” (as assumed in the September 12 Cabinet submission) (Option 2);
  3. Flowing GGRA funds volumetrically in “off-peak” hours;
  4. Flowing GGRA funds via a hybrid approach through a combination of GA and volumetrically in “all hours” (Option 4); and
  5. Flowing GGRA funds via a hybrid approach through GA and volumetrically in “off-peak” hours (Option 5).
- The proposed options are intended to balance the ability to meet the MOECC legislated GGRA objectives and CCAP commitments, provide consistency with the September 2016 direction, maintain the potential for linking funding to GHG reductions and minimize administrative complexity.

# Legal Considerations *(NTD: Subject to MAG review & approval)*

- Justice Binnie advised that the more tenuous the linkages between expenditures [from the GGRA] and the regulatory purpose of reducing greenhouse gas emissions, the greater the risk that the *Climate Change Mitigation and Low-Carbon Economy Act, 2016* will be characterized as an unconstitutional tax.
- Use of GGRA proceeds to address the 2016 Throne Speech commitment needs to incorporate features that demonstrate clear linkages to the reduction of greenhouse gases.
- Of the options to allocate cap and trade funds considered, allocating volumetrically in all hours as outlined in this deck appears to have the highest relative legal risk of the proceeds recycling options, allocating cap and trade auction funds volumetrically in off peak hours has the lowest legal risk of the proceeds recycling options and it is difficult to predict the legal risk of the option of allocating cap and trade auction funds through the Global Adjustment (for further detail, see MAG briefing note dated November 10, 2016).

# Illustrative Impact to Electricity Consumers (2017-2020)

| Option                                                                                              | GHG Reductions in 2020* (Mt) | Total (2017-2020) | Avg. Residential Impact (\$/month) | Avg. Class B Commercial Impact (\$/MWh) |                                | Class A Industrial Impact** (\$/MWh) |                     |                     |
|-----------------------------------------------------------------------------------------------------|------------------------------|-------------------|------------------------------------|-----------------------------------------|--------------------------------|--------------------------------------|---------------------|---------------------|
|                                                                                                     |                              |                   |                                    | Average                                 | Day-Shift (e.g., manufacturer) | High GA (e.g., chemical)             | Medium (e.g., auto) | Low GA (e.g., pulp) |
| CCAP estimate was based on allocating funds via GA to offset the average industrial consumer        | 3.25                         | \$1.32 billion    | - \$2.00                           | - \$2.50                                | \$2.30                         | - \$1.10                             | \$0                 | \$2.35              |
| <b>1. Global Adjustment (GA)</b><br>(Targeted amounts to Class A and Class B electricity consumers) | 3.25                         | \$1.10 billion    | N/A**                              | - \$1.70                                | \$0.75                         | - \$6.90                             | - \$4.50            | \$0.60              |
| <b>2. Volumetric in “all hours”</b> (as assumed in the September 12 Cabinet submission)             | 3.25                         | \$1.10 billion    | N/A***                             | - \$2.70                                | - \$0.20                       | - \$3.25                             | - \$2.70            | - \$1.30            |
| <b>3. Volumetric in “off-peak hours”</b>                                                            | 3.27                         | \$1.10 billion    | N/A***                             | - \$2.70                                | \$0.80                         | - \$3.15                             | - \$2.50            | - \$1.60            |

\* **Note:** The forecast amount of greenhouse gas (GHG) emissions savings is based on planned and committed electricity projects that have not yet been funded by electricity ratepayers.

\*\* **Note:** The above impacts do not include the cost of ICI expansion (impact of about \$1/MWh) and the RRRP update (impact of about \$0.76/MWh). The allocation of funds from cap and trade is net of the cost of carbon and represents an estimated average of the funds required over the first compliance period (2017-2020).

\*\*\* **Note:** Most residential consumers pay under the Regulated Price Plan (RPP). For simplicity, all non-RPP Class B consumers are referred to as “Class B/Commercial” throughout the deck. A Class B consumer operating a day-shift is assumed to consume 70% on-peak. On September 15, 2016, the government introduced legislation that would provide an 8% rebate equal to the provincial portion of the Harmonized Sales Tax (HST) to consumers eligible for the RPP, such as residential households, small businesses and farms – exceeding the 2016 Budget commitment.

# Illustrative Impact to Electricity Consumers (2017-2020) cont'd

| Option                                                                                                                                         | GHG Reductions in 2020* (Mt) | Total (2017-2020) | Avg. Residential Impact (\$/month) | Avg. Class B Commercial Impact (\$/MWh) |                                | Class A Industrial Impact** (\$/MWh) |                     |                     |
|------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|-------------------|------------------------------------|-----------------------------------------|--------------------------------|--------------------------------------|---------------------|---------------------|
|                                                                                                                                                |                              |                   |                                    | Average                                 | Day-Shift (e.g., manufacturer) | High GA (e.g., chemical)             | Medium (e.g., auto) | Low GA (e.g., pulp) |
| CCAP estimate was based on allocating funds via GA to offset the average industrial consumer                                                   | 3.25                         | \$1.32 billion    | - \$2.00                           | - \$2.50                                | \$2.30                         | - \$1.10                             | \$0                 | \$2.35              |
| <b>4. Hybrid option in “all hours”</b> (targeted amounts via GA to Class A, plus volumetric amount in “all hours” to Class A)****              | 3.25                         | \$1.10 billion    | N/A***                             | - \$1.70                                | \$0.80                         | - \$6.20                             | - \$4.50            | - \$0.80            |
| <b>5. Hybrid option with “off-peak hours”</b> (targeted amounts via GA to Class A, plus volumetric amount in “off-peak hours” to Class A)***** | 3.26                         | \$1.10 billion    | N/A***                             | - \$1.70                                | \$0.80                         | - \$6.10                             | - \$4.40            | - \$1.00            |

\* **Note:** The forecast amount of GHG emissions savings is based on planned and committed electricity projects that have not yet been funded by electricity ratepayers.

\*\* **Note:** The above impacts do not include the cost of ICI expansion (impact of about \$1/MWh) and the RRRP update (impact of about \$0.76/MWh).-The allocation of funds from cap and trade is net of the cost of carbon and represents an estimated average of the funds required over the first compliance period (2017-2020).

\*\*\* **Note:** Most residential consumers pay under the Regulated Price Plan (RPP). For simplicity, all non-RPP Class B consumers are referred to as “Class B/Commercial” throughout the deck. A Class B consumer operating a day-shift is assumed to consume 70% on-peak. On September 15, 2016, the government introduced legislation that would provide an 8% rebate equal to the provincial portion of the Harmonized Sales Tax (HST) to consumers eligible for the RPP, such as residential households, small businesses and farms – exceeding the 2016 Budget commitment.

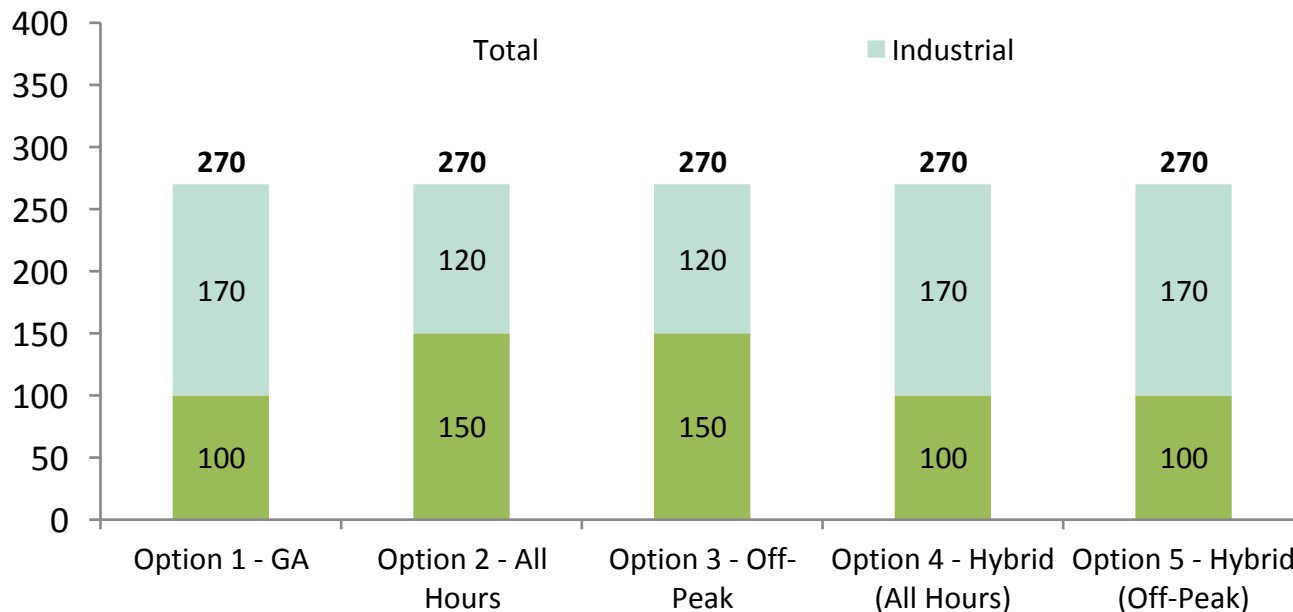
\*\*\*\* **Note:** The estimates assume that 60% of funds for Class A is allocated-via a targeted GA and 40% is allocated volumetrically; Class B consumers are assumed to receive funds-via a targeted GA.

\*\*\*\*\* **Note:** The estimates assume that 60% of funds for Class A is allocated via a targeted GA and 40% is allocated volumetrically to off-peak hours; Class B consumers are assumed to receive funds via a targeted GA.

# Average Annual Funds Required

## Average Annual Funds Required (2017-2020)

*in \$ millions per year*



**Note:** The CCAP estimate which was based on allocating funds via GA to offset the average industrial consumer allocated an average of \$40 million per year to industrial electricity consumers and approximately \$175 million per year to commercial electricity consumers over the first compliance period.

**Note:** Option 2 reflects the assumptions in the September 12, 2016 Cabinet submission. Option 4 assumes that 60% of funds for Class A is allocated via a targeted GA and 40% is allocated volumetrically; Class B consumers are assumed to receive funds via a targeted GA.