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To: Clients and Colleagues

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RE: Ontario Cap-and-Trade and Climate Change Strategy Update

In mid-November 2015, the Ontario Ministry of Environment and Climate Change (MOECC) hosted a series of stakeholder sessions to present an update on the progress of the province's forthcoming cap-and-trade program design. Following the sessions, the MOECC posted details of the proposal to the Environmental Registry¹ for public comment. On November 24, 2015, the provincial government announced Ontario's Climate Change Strategy² which provides further support for the development of a cap-and-trade system in Ontario. The purpose of this note is to summarize the proposed Ontario cap-and-trade system design along with associated timelines with emphasis on potential implications for the electricity sector.

Background

Ontario first joined the Western Climate Initiative (WCI) with California, Quebec, Manitoba, and British Columbia in 2008. The WCI established a regional goal to reduce greenhouse gas (GHG) emissions to 15% below 2005 levels by 2020. The principal method to achieve these reductions is through market mechanisms, primarily cap-and-trade. However, at that time Ontario did not move forward with a cap-and-trade system. On February 12, 2015, the MOECC released Ontario's Climate Change Discussion Paper³ which outlined the province's long-term vision for reducing GHG emissions. The province's emissions reduction target is 15% below 1990 levels by 2020, and 80% reduction by 2050. The discussion paper indicated that a carbon pricing policy will be established in Ontario. On April 13, 2015, Ontario Premier Kathleen Wynne announced that a cap-and-trade system will be implemented in the province⁴.

¹ EBR #012-5666, available here: <http://www.ebr.gov.on.ca/ERS-WEB-External/displaynoticecontent.do?noticeId=MTI2NTI2&statusId=MTkwOTcw>

² Ontario's Climate Change Strategy document is available here: <https://dr6j45jk9xcmk.cloudfront.net/documents/4910/climatechangestrategy-report.pdf>

³ The paper is available here: http://www.downloads.ene.gov.on.ca/envision/env_reg/er/documents/2015/012-3452.pdf

⁴ The news release is available here: <http://news.ontario.ca/opo/en/2015/04/cap-and-trade-system-to-limit-greenhouse-gas-pollution-in-ontario.html>

Cap-and-Trade System Mechanics

Ontario has selected cap-and-trade as the preferred approach to carbon pricing. The cap-and-trade program is intended to reduce the amount of GHG pollution in the province by setting a limit on emissions. The basic mechanics of a cap-and-trade system are presented in Appendix A.

Ontario Cap-and-Trade Design Details

Draft design details of the Ontario cap-and-trade system have been developed over the past six months, in consultation with community and industry stakeholders. Below is a summary of key design elements which have been included in the November 16, 2015 Environmental Bill of Rights (EBR) posting⁵.

Alignment with Other Jurisdictions

- Ontario intends to link its proposed cap-and-trade program with the existing programs in Quebec and California⁶.
 - Ontario will continue to work with Quebec and California on program design before linking.

Sector Coverage

- The electricity sector is among the sectors covered by the proposed cap-and-trade program, including imported electricity for consumption in Ontario.
 - Ontario is currently considering how the proposed program would cover energy-from-waste facilities⁷.

Point of Regulation

- It is proposed that for domestic (i.e., Ontario) electricity generation, the point of regulation will be covered at the fuel distributor level.
- For electricity imports, the proposed point of regulation is the point at which the electricity enters the province (i.e., the first jurisdictional deliverer).

⁵ See http://www.downloads.ene.gov.on.ca/envision/env_reg/er/documents/2015/012-5666_Options.pdf

⁶ There is an existing joint system (under the WCI) between Quebec and California. The first joint auction between Quebec and California of greenhouse gas allowances was held in December 2014. The second joint auction was held in February 2015. Quebec operates its cap-and-trade system with California. Ontario, Quebec, and California could set up a joint system to allow companies to trade their emissions between all three jurisdictions, if Ontario signs a separate agreement with California.

⁷ Emissions from landfilling are proposed not to be covered by the program.

- Some exceptions may be required for facilities that connect directly to international or inter-provincial natural gas pipelines - these emissions are proposed to be covered at the electricity generator level.

Emissions Coverage

- It is proposed that the program cover both fixed process and combustion emissions. Under the proposed program design, fixed process emissions and combustion emissions will be reported separately.
 - Fixed process emissions are direct emissions from an industrial process involving chemical or physical reactions, other than combustion, and where the primary purpose of the industrial process is not energy production. These emissions vary by sector according to the applicable manufacturing methods used.
 - Combustion emissions are emissions from the combustion of fossil fuels. It is possible to reduce these emissions with fuel switching and more efficient technologies.

New Facilities vs. Existing Facilities

- Under the current proposal, new facilities that begin operations on January 1, 2016 or later and have annual emissions equal to or greater than 25,000 tonnes per year will have a compliance obligation starting in their third year of operation.
- Existing facilities that are expanding and whose emissions exceed the compliance threshold of 25,000 tonnes per year will have a compliance obligation starting with the first year the threshold is reached.

Setting the Cap

- The 2017 cap is proposed to be set to align with the best estimate of emissions in 2017, declining at a rate to help the province achieve its 2020 reduction target⁸.
 - The 2017 cap will be set at the forecast of total emissions expected at the start of the program - taking into consideration the expected growth in the economy as well as in existing covered facilities and any new facilities expected to become operational by that time.

⁸ Ontario's GHG reduction target in 2020 is 15% below 1990 emissions level.

Market Design Features

- WCI has developed a number of market design features to mitigate market manipulation, reduce administrative costs, support market certainty, and promote transparency.
- If Ontario's design strongly lends from the designs implemented in Quebec and California, there will likely be limited flexibility to change market design features as parameters must be harmonized to allow for use of shared infrastructure and maintain same level of rigour.
- A summary of the proposed Ontario market design features is included in Appendix B.

Price Stability Mechanisms

- Ontario intends to align its auction reserve price with the price in the joint Quebec-California market for 2017.
 - The reserve price at the most recent Quebec-California auction (August 2015) was \$15.84/tonne (\$CAD).
- It is further proposed that 5% of total allowances from the cap each year will be set aside by the province in a strategic reserve and made available to Ontario emitters at fixed prices to manage price impacts in the event there is high demand for allowances.

Allowances

- Under the current proposal, a portion of allowances are to be distributed free of charge to large emitters with a direct compliance obligation, with the rest of the allowances being sold at auction.
 - Emissions attributable to electricity generation will not be eligible for an allocation free of charge.
 - Emissions due to intensive production of a trade exposed good will be eligible.
- The specific allocation method, including benchmarks and cap adjustment factor, is still under development with each sector and will be part of the cap-and-trade regulation proposal to be released in early 2016.

Use of Offset Credits

- Ontario will allow for the use of offsets for compliance in its program. In order to do so, it is proposed that Ontario:
 - Establish an Offset Credit Registry;
 - Issue offset credits for emissions reductions and removals from eligible projects within Canada;

- Allow for the aggregation of projects (bundling of identical projects for reporting purposes);
- Recognize offset credits issued by California and Quebec, in anticipation of linking to Ontario's program; and
- Limit use of offsets to up to 8% of the total compliance obligation.

Compliance

- If a facility's cap is exceeded, all compliance obligations will have to be met by surrendering allowances and/or offset credits.
 - The obligation to "true-up" a facility's emissions will have to be complete by November 1 of the year following the compliance period.
- Ontario is also considering a one-time partial true-up during the first compliance period to prepare entities and program operations staff for the final true-up at the end of the first compliance period.

Timing and Next Steps

The MOECC is seeking stakeholder comments by December 15, 2015. Feedback received will be discussed in January 2016 via a webinar, with input captured in the draft regulatory proposal which is expected to be posted in early 2016. Stakeholders will have another opportunity to provide feedback during the public comment period for the detailed draft regulation. The final regulation is expected to be published in mid-2016, with the goal of formal program implementation in January 2017, and the first auctioning of emission allowances taking place in March 2017.

Potential Implications for the Electricity Sector

The impact of the cap-and-trade system on the price of electricity is not yet known. However, the price of natural gas is a key determinant of electricity prices, because gas-fired generators can frequently be the marginal source of electricity supply in most hours in Ontario and surrounding markets. Therefore it is reasonable to conclude that the implementation of cap-and-trade will put upward pressure on electricity prices in Ontario.

Uncertainty also exists in terms of potential impacts on electricity demand. With a price on carbon which will increase over time, fossil fuels will be increasingly expensive and electro-technologies more cost-effective. Therefore implementation of cap-and-trade in Ontario may accelerate electrification, meaning potential increases in electricity demand and changes to hourly electricity demand patterns.

On the supply side, amendments to electricity supply contracts (e.g., deemed dispatch style contracts held by many gas-fired generators in Ontario) will likely be required resulting from cap-and-trade design and implementation. As indicated by the proposed Ontario cap-and-trade design, the point of regulation for domestic electricity generation will be at the fuel distributor level. As a result of this design feature, it is likely that Ontario natural gas distributors will adjust applicable tariffs which will need to be approved by the Ontario Energy Board. As a consequence, Ontario gas-fired generators who have exposure to changes in their gas delivery and management costs could be economically impacted by the cap-and-trade system, leading to contracts being re-opened and potentially amended.

From the perspective of renewable generation, it is unclear whether changes to existing or future renewable generation contracts will be required as a result of cap-and-trade design and implementation, particularly because the specific allocation method for allowances is still under development. Under existing renewable energy generation contracts (e.g., Renewable Energy Supply (RES) I, II and III contracts, Feed-in Tariff (FIT)⁹ contracts, etc.), the IESO¹⁰ owns the rights to all Emissions Reductions Credits (i.e., the credits associated with the avoidance or reduction of emissions below regulatory limits) since they are included in the basket of Environmental Attributes (EAs) associated with renewable energy generation facilities. Depending on the design of Ontario's cap-and-trade system, the IESO may ultimately have incentives to separate the Emission Reduction Credits from the EAs and relinquish Emission Reduction Credit ownership to contracted renewable generators. Going forward, consideration will have to be given as to what may be the value of Emission Reduction Credits within an Ontario cap-and-trade system and whether or not the IESO should continue to own them.

Ontario's Climate Change Strategy

On November 24, 2015, the provincial government announced Ontario's Climate Change Strategy, which outlines general steps that the province will take in order to transition to a low-carbon economy. Climate change strategies for other Canadian provinces have also recently been released or will be released shortly in anticipation of the UNFCCC's Conference of Parties (COP21)¹¹.

In addition to supporting the forthcoming cap-and-trade program, Ontario's Climate Change Strategy includes the following steps:

⁹ Section 2.10(d) of the FIT Contract (v.3.1) anticipates a scenario where the Supplier (i.e., renewable energy generation) could retain ownership of the EAs in the event they are required EAs by law to operate the renewable generation facility. This may apply in an Ontario cap-and-trade system, where renewable energy generation would require allowances to operate.

¹⁰ Formerly the Ontario Power Authority.

¹¹ The COP21 will be taking place in Paris, France from November 30, 2015 to December 11, 2015.

- Integrating climate change mitigation and adaptation considerations into government decision-making and infrastructure planning;
- Introducing changes to government operations, procurement, employee training, building retrofits and in other areas to help government move towards carbon neutrality;
- Developing a coordinated approach to reduce emissions from new and existing buildings; and
- Reducing emissions from transportation by promoting the uptake of zero emission and plug-in hybrid vehicles.

Sector-specific commentary is also included in the strategy document, with an acknowledgement that most of Ontario's GHG emissions come from the transportation, industry, and buildings sectors. In terms of commentary that directly addresses the electricity sector, the strategy states that Ontario will establish GHG reductions as a priority in the next Long-Term Energy Plan (LTEP)¹². Further, the strategy indicates that there will be "a continuation of the positive trends of the electricity sector, as well as continued improvement in conservation, efficiency and clean energy use to achieve deeper, long-term GHG reductions".

In 2016, the Ontario government is expected to release a detailed five-year action plan which will include specific commitments to meet the 2020 emissions reduction targets and identify the framework which will enable the province to meet 2030 and 2050 emissions targets.

Conclusions

Design details for Ontario's cap-and-trade system continue to emerge. The MOECC will be refining and finalizing the design over the winter, with a draft regulation expected in early 2016 and a final regulatory proposal published in mid-2016. Potential impacts of cap-and-trade implementation on the electricity sector include increased electricity prices, increased electricity demand, and potential need to re-open electricity supply contracts.

Ontario's Climate Change Strategy has been recently released, supporting Ontario's proposed cap-and-trade system and outlining other steps to be taken by the province to combat climate change. Steps relating specifically to the electricity sector have not been captured in the Climate Change Strategy, however it is noted that GHG reductions will be a priority in the next LTEP, and Ontario will continue to utilize conservation and demand management programs, energy-efficiency, and clean energy to further reduce GHG emissions in Ontario.

¹² Ontario's 2013 LTEP served as a roadmap for the electricity system and other sources, establishing renewable energy targets to 2025 and conservation targets to 2032. The next LTEP is scheduled to be released in late 2016 or early 2017.

Appendix A: Cap-and-Trade System Mechanics

The basic mechanics of a cap-and-trade system are as follows:

- The system places a cap, divided into allowances, on the amount of greenhouse gases that can be emitted in a given period. One allowance is generally equal to one tonne of carbon dioxide (CO₂) pollution or CO₂ equivalent (CO₂e).
 - Over time, the cap is lowered.
- Regulated emitters must acquire enough allowances to match their emissions, and those that have reduced emissions beyond their allowances can surrender them (to meet their compliance obligations in the current compliance period), bank them (for compliance in the next period), or sell their extra allowances to those that require allowances to meet their current compliance obligations.
- In some cap-and-trade systems, capped emitters can also acquire offsets to help meet their emissions targets. An offset is a reduction or removal of greenhouse gas emissions by non-capped industry, which can be sold to capped emitters to help meet their compliance obligations.
- During early stages of a cap-and-trade system, the government will generally allocate enough allowances to match baseline operations for industry. They may also auction allowances in a competitive bidding process in order to help establish a market price on greenhouse gas pollution.
- Trading of allowances in the secondary market also establishes a carbon price, which fluctuates over time based on market conditions.
- Cap-and-trade provides a known emissions outcome for the portion of emissions under regulation, and theoretically an uncertain cost¹³.

¹³ However, many executions of cap-and-trade effectively cap the cost.

Appendix B: Proposed Ontario Market Design Features

The proposed market design features for Ontario’s cap-and-trade system are presented in the following table.

| | Ontario’s Proposed Options |
|----------------------------------|---|
| Registration Requirements | <ul style="list-style-type: none"> • All new and existing covered entities required to register • Entities wishing to voluntarily participate in the market must also register • Requires information disclosure including corporate associations (>20% control) |
| Market Rules | <ul style="list-style-type: none"> • Holding limit applies to any registered entity; limit depends on supply of allowances in the market • Purchase limit prevents covered entities from purchasing more than 25% of allowances sold at auction; for non-covered entities the limit is 4% |
| Auction Rules | <ul style="list-style-type: none"> • Sealed bid, single round, lots sizes of 1000 allowances, uniform price • Quarterly auctions – initially separate, joint once links to Quebec and California are official • Participants must provide financial guarantee covering full value of any bid • First auction: March 2017 stand alone auction (then align with California and Quebec schedule where auctions currently held every quarter) |
| Trade Rules | <ul style="list-style-type: none"> • Requires submission and confirmation by two account representatives from the sellers account and approval by receiving account to prevent theft • Information required – e.g., account numbers, compliance instrument info • If related entities –disclosure of settlement price not required |
| Strategic Reserve Sales | <ul style="list-style-type: none"> • 5% of allowances from 2017 to 2020; divided equally into three price tiers • Only covered entities can purchases allowances from reserve and allowances can only be used for compliance |