



April 14, 2015

To: Clients and Colleagues

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RE: Announcement of Cap-and-Trade System in Ontario

On April 13, 2015, Ontario Premier Kathleen Wynne announced that a cap-and-trade system will be implemented in the province to limit greenhouse gas pollution and to fight climate change¹. The purpose of this note is to provide a high-level summary of Ontario's proposed cap-and-trade system and identify potential implications for renewable energy generation.

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 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 Ministry of the Environment and Climate Change released Ontario's Climate Change Discussion Paper², which outlined the province's long-term vision for reducing greenhouse gas emissions. The province's emission 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, and describes four possible approaches to carbon pricing that could be adopted by the province. The possible approaches included a cap-and-trade system (as has been implemented in California and Quebec) and a carbon tax (as is being utilized by British Columbia). A 45-day public review and comment period followed release of the discussion paper.

Ontario Cap-and-Trade Design Summary

Ontario has selected cap-and-trade as the preferred approach to carbon pricing. The cap-and-trade system is intended to reduce the amount of greenhouse gas pollution in the province by setting a limit on emissions. The basic mechanics of a cap-and-trade system are as follows:

¹ The news release is available at <http://news.ontario.ca/opo/en/2015/04/cap-and-trade-system-to-limit-greenhouse-gas-pollution-in-ontario.html>

² The discussion paper is available at http://www.downloads.ene.gov.on.ca/envision/env_reg/er/documents/2015/012-3452.pdf

- 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 cost³.

Design details of the Ontario cap-and-trade system will be developed over the next six months, following community and industry consultation. During the design phase, Ontario will work with Quebec and California⁴ to align its market with theirs. Proceeds from the cap-and-trade system are planned to be re-invested into projects that can further reduce greenhouse gas pollution. The cap-and-trade system is expected to be formally implemented in 2016.

The Ontario Government has cited the following as benefits of implementing a cap-and-trade system: rewarding innovative companies; providing certainty for industries; and, creating more opportunities for investment.

³ However, many executions of cap-and-trade effectively cap the cost

⁴ There is an existing joint system (under 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.

Potential Implications for Renewable Energy Generation

In some jurisdictions, policymakers include renewable energy generation within cap-and-trade systems in order to provide incentives for technologies that can provide environmental and economic benefits⁵. Including renewable energy generation within a cap-and-trade system means allocating some portion of allowances or proceeds of allowance sales to renewable energy generation. Renewable energy generation can then gain additional revenues by selling allowances that they receive resulting from an allocation of allowances because they do not produce any direct emissions⁶. Therefore, allocation of allowances to renewable energy generation creates a market-based incentive to increase development of renewable generation capacity. Renewable energy generation generally does not qualify as an offset, unless certain stringent conditions are met to prevent double counting (e.g., for a Renewable Portfolio Standard (RPS)) and ensure it actually reduced or removed emissions. In the Ontario context, there are several factors which will determine the potential role for renewable energy generation within the province's cap-and-trade system, and the benefits and challenges of the overall cap-and-trade system.

Existing Renewable Energy Generation Contracts

Under existing renewable energy generation contracts (e.g., Renewable Energy Supply (RES) I, II and III contracts, Feed-in Tariff (FIT)⁷ contracts, etc.), the IESO⁸ 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 a renewable energy generation facility.

- 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 (e.g., allocation, commercial arrangements, etc.) Emission Reduction Credit ownership to contracted renewable energy generation.

Future Renewable Energy Generation Contracts

Going forward, it is unclear what the applicable contractual provisions will be with respect to ownership of Emission Reduction Credits and/or EAs within future IESO renewable energy generation contracts.

⁵ See <http://www.nrel.gov/docs/fy06osti/40006.pdf>

⁶ With the exception of biomass

⁷ 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. This is one of many design issues to be worked through.

⁸ Formerly through the Ontario Power Authority (OPA)

- 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.
- Future procurement processes should consider renewable energy generation ownership on all associated Emissions Reduction Credits. In addition to helping facilitate renewable energy generation's participation within Ontario's future cap-and-trade system, where retaining ownership of Emissions Reduction Credits can have the positive effect of lowering contract prices.

Specific Considerations for Biomass Contracts

There may be implications of an Ontario cap-and-trade system unique to biomass renewable energy generation.

- Similar to natural gas-fired generation, the variable costs of biomass generation could increase resulting from a cap-and-trade system.
- Accordingly, existing contracts (e.g., FIT, etc.) may have to be re-worked to acknowledge this potential.
- As design details emerge, it will become clearer what, if any, contract amendments (e.g., RES, FIT, etc.) that may need to be considered.

Changes to Electricity Prices

The adoption of carbon pricing through an Ontario cap-and-trade system may impact electricity prices. This will primarily depend on the design details, including the extent of trading allowed between WCI and non-WCI market participants. It is unclear if impacts to the wholesale electricity market's Hourly Ontario Energy Price (HOEP) will be material or not.

- Natural gas-fired generation often sets the wholesale market energy price, particularly during on-peak hours, and projected to continue to do so in the future when nuclear generating units are retired or undergoing refurbishment.
- During the upcoming years of nuclear generation refurbishments, carbon based resources will generate more energy.
- Changes in the price at which natural gas-fired generation offers energy into the wholesale electricity market could influence the dispatch frequency of renewable energy generation.

Conclusions

Ontario has selected a cap-and-trade system as the preferred approach to regulate greenhouse gas emissions. The next six to eight months will be crucial, as Ontario works out the design details of the cap-and-trade system. Given that Ontario has publicly announced intention to link with Quebec



and California, we can expect each of those systems to provide guidance regarding design details for Ontario's cap-and-trade system. However, Ontario's unique electricity market design and structure will require thoughtful participation of stakeholders during the consultation process. Ontario is aiming to formally implement its cap-and-trade system in 2016.