25 Adelaide St. E
Suite 1602
Toronto ON, M5C 3A1

APPrO
ASSOCIATION OF POWER PRODUCERS OF ONTARIO

April 2007

A Framework for Electricity Sector Climate Change Policy[1]

Outline:

1. The Ontario electricity sector context
2. Guiding Principles
3. Principles for the design of a cap-and-trade system
4. Issues
5. Recommended solutions
6. Definitions and abbreviations

1. The Ontario electricity sector context

- Ontario is addressing climate change at a time when it needs significant investment to renew and replace existing power generation facilities that are reaching the end of their useful life.
- Ontario has already taken major initiatives at the sector level through conservation programs and by backing investment in a range of renewable, nuclear and gas-fired projects, and has committed to other initiatives such as the "off-coal" program.
- APPrO supports the enactment of comprehensive, mandatory, market-based initiatives to mitigate greenhouse gas emissions in order to minimize their impact on the environment.
- Ontario should take a leadership role by defining policies that are rational from Ontario's perspective, and in so doing should seek to address issues that are not yet resolved by national climate change policy.
- It is appropriate that Ontario develop a climate change policy that addresses its specific interests and concerns. Following this, we encourage the province to work closely with the federal government to incorporate principles developed for the province into the national program.
- As has been shown in other jurisdictions, electricity can play an important role in reducing GHG emissions in the transportation sector. Expansion of the light rail system and the subway in Toronto, electrification of rail services between Toronto and Ottawa/Montreal, and providing incentives for early adoption of plug-in hybrid electric vehicles are particularly attractive options

[1] This document represents the position of APPrO, however the positions of individual member companies may differ from those expressed in this document.

that could have major impacts on GHG reductions while promoting economic growth and energy security in Ontario.

2. Guiding Principles

a. Pragmatic

- Greenhouse gas policies should be pragmatic and designed to minimize the economic impact of meeting targeted emissions reductions on a timely basis. APPrO supports a climate change policy that is designed and implemented in a manner that allows for the development and deployment of low and no-carbon technology to minimize economic dislocation while achieving a path towards sustainable levels of GHG emissions. Most importantly, electricity reliability need not and should not be sacrificed in the name of reducing emissions as part of this plan.

b. Consistent and equitable

- Greenhouse gas policies and electricity policies must be consistent with each other and mutually supportive of each other. In today's environment, greenhouse gas policies must therefore respect the hybrid market structure of the electricity sector, and must address risk and cost responsibility accordingly. Risk and cost allocation must also be equitable.

c. Economically efficient

- Greenhouse gas policies should encourage the most economically efficient means to achieve overall goals of GHG reductions in parallel with other environmental enhancements.

d. Sustainable

- The program must be sustainable for the long term. Energy investment decisions have been made and continue to be made with decades-long planning horizons. While climate change demands prompt action, that action must not disrupt investor confidence. The onus for action must therefore be placed on parties who are in a position to take effective action. The policy must be forward-looking, and incorporate sustainable principles and clear rules to induce appropriate long term investment decision-making.

e. Broad based

- Combating climate change requires a broad effort, involving all sectors of the economy. The government should ensure that no one industry bears a disproportionate burden in reducing emissions.

3. Principles for the design of a Cap and Trade system

a. It is important to establish conditions that will encourage market activity to produce a definite and well-supported price on the value of removing a tonne of carbon emissions from the atmosphere.

b. The means of identifying and communicating this price in the market should be clear and robust.

c. The price should be demonstrably market-based and responsive to market conditions.

d. A tonne of reductions should be valued the same whether it is produced by means of incremental energy conservation, renewable energy, nuclear power, or any other means.

e. Initial allowances must be allocated according to current actual emission levels, so as not to engage in wealth redistribution.

f. The mechanisms to be developed must encourage compliance cost to be embedded in the market price offers of all generators (including OPG and CES/CHP contract holders) and dispatchable loads, rather than passed on through non-market adders like uplifts or the global adjustment.

g. Credit for early action: If someone invests in a beneficial power project shortly before the rules go into effect, he or she should be eligible for much the same benefit as someone who comes along after the program has taken effect. Whatever system of rules is finally agreed upon, the system of credit for early action needs to be clear and definitive from an early date, years before the full system takes effect, so that environmentally-friendly actions that are justifiable today are not delayed in hopes of accessing better returns later.

h. Every effort should be made to ensure that the various systems for measuring, valuing and trading emission reductions use consistent terms and measures so that there are a wide range of market-sensitive options available for buying and selling reductions. For example verifiable reductions should be able to be bought and sold, for comparable prices, in any of the following:

- Provincial climate change program
- National climate change program
- Regional trading systems like RGGI.
- Renewable energy certificates such as Green-E, Greenleaf, and so on, to the extent that renewable energy certificates will qualify for meeting compliance obligations.

4. Issues

a. Capture of early mover gains for the sector

- The government of Ontario has adopted a sector-wide approach to reduction of GHGs from the electricity sector. Conservation efforts and supply mix decisions have been driven by environmental objectives, not purely by electricity market economics.
- It is not clear if federal policy will credit the Ontario sector with the gains arising from its actions to adjust its generation portfolio through the supply mix directive and contracting programs. Lack of such recognition could expose individual participants to problematic consequences and could double-up on sector obligations, with material impact on electricity cost to consumers. Provincial policy must address this issue.

b. Achieving efficiency – through new facility investment

- In this period of sector renewal, emission intensity improvements in the electricity sector are best achieved by changes to the supply mix and by the introduction of new technologies into new project developments. This is the logic behind the government's supply mix policy.
- Existing generation facilities are generally not ideal candidates for significant GHG reductions; GHG and air emission reductions will often come at the expense of plant operation flexibility and responsiveness, which will tend to reduce the efficiency of grid operation, impair the economics of the market and indirectly increase customer costs.

c. Impact on OPG and OPA-contracted facilities

- A high proportion of the supply is explicitly price-regulated (OPG regulated assets) implicitly price-regulated (subject to ONPA) or

contracted by the OPA (conservation, RES, CES, CHP, nuclear). For all facilities in this group, Ontario consumers are the beneficiaries of GHG credits and the bearers of GHG costs. None of the present market mechanisms drives these GHG cost impacts into the electricity market price; all of them pass the overall cost net of overall benefit to consumers through post-market processes such as the global adjustment.

d. Impact on facilities other than OPG or OPA
- For the balance of the existing supply portfolio (self-generation, merchant generation and heritage facilities under contract from OEFC), the benefit / onus of any individual LFE obligations would fall directly to the facility owner. Any opportunity for development of a meaningful market for GHG allowance or offset trading within the Ontario electricity sector would be seriously curtailed by the market dominance of OPG and the OPA.
- While APPrO generally supports cap-and-trade as a means to achieve emission reduction goals, APPrO has serious concerns at its application within the hybrid market electricity sector. There would be serious challenges in ensuring effectiveness or equity of a cap-and-trade regime within the sector, when layered onto the sector-wide supply mix approach and onto the hybrid market. Given that individual generating facilities cannot materially reduce emission intensity, the application of a conventional cap-and-trade regime would amount to a tax on facility owners (undesirable and inequitable) or consumers (undesirable).
- The following section proposes the solution to these issues.

5. Recommended solutions

a. In order to address the issues discussed above, many generators are of the view that the government should enhance its present sector-wide approach to GHG reduction, and not seek to overlay it with obligations for reducing GHG emissions from individual existing facilities. This sector-wide approach is discussed first. In the event that the government should however decide to proceed with an individual-facility overlay, it should incorporate a number of features to address the serious concerns with such approach. These are also discussed below.

b. The sector-wide option
- The Sector-wide option recognizes the unique attributes of the current hybrid electrical market design in Ontario along with the high proportion of the GHG responsibility already carried by the OPA and OPG. It is recognized that these two bodies are the primary vehicles for sector GHG reduction in the province.
- Under this approach the OPA extends its GHG rights and responsibilities beyond its existing contracts to all participants in the non-OPG sector, and procures or trades allowances, credits or offsets broadly. Such an approach preserves the rights of existing and new merchant project developers to opt out of this OPA umbrella, and retaining all GHG-related rights and responsibilities e.g. in order to make green power retail sales.
- This approach is pragmatic in that the supply-mix drivers can achieve good results. It is consistent and equitable, in that it

would put all sector participants onto an equitable footing which is consistent with the government's level of involvement in supply mix, with the roles of OPG and the OPA in control of the majority of investment in the sector, and with market price mechanisms. It can be economically efficient in that the onus and responsibility is placed on those with the power to act. It is sustainable in that it supports the integrity of past investment decisions and enhances confidence of similar rational policy in the future. Sector interaction with other sectors or individual participants provides for the broad-basing of policy. Opt-out arrangements allow for transition in parallel with other electricity market changes.

c. The individual option
- If the government believes it can not adopt a sector-wide approach, then more specific consideration will be needed with respect to the cost of GHG reductions under the alternative, the individual option. The design of any cap and trade system and the allocation of caps to and within the sector would be critical to the program's success, and would be highly contentious. In addition, particular issues would need to be addressed:
  1. OPG, OPA and other individual participants would all use the multi-sectoral market to address surpluses or deficiencies in their portfolio of allowances and credits. OPG and OPA costs would naturally pass to consumers. Principles of consistency, equitability, economic efficiency and sustainability all require that heritage facilities providing clean energy supply should also be able to pass their compliance costs on to consumers. This can be done by contractual payments or indemnities to impacted parties.
  2. The province would depend on the market to assist in the allocation of resources among different generation technologies and between generation and load reduction. In order for this to be meaningful, each participant must build the cost of carbon compliance into its supply offers or load bids. This would require that OPG offer prices, which are required by its license to be cost based, become inclusive of marginal carbon costs, and that the OPA's CES and CHP contracts be modified to support similar offer strategies. In addition it would be necessary to consider the treatment of inter-tie transactions which might simply displace carbon emissions to jurisdictions where they would be non-regulated.

6. Definitions and Abbreviations:
- OPA: Ontario Power Authority, the central agency responsible for planning and procurement of power in Ontario
- OPG: Ontario Power Generation Inc. the government-owned generation company that owns generation facilities in Ontario such as Niagara Falls and Darlington nuclear
- RGGI: Regional Greenhouse Gas Initiative, a US state-led initiative to regulate greenhouse gas emissions

- LFE: Large Final Emitter, a term used by the federal government to identify major sources of greenhouse gases subject to regulation, usually industrial operations.
- CES: Clean Energy Supply, a group of power purchase contracts struck since 2004, held by the OPA, generally for high-efficiency gas fired generation.
- RES: Renewable Energy Supply, a group of power purchase contracts struck since 2004, held by the OPA, for wind, small hydro and other renewable generation.
- CHP: Combined Heat and Power, another group of contracts procured by the OPA.
- GHGs: Greenhouse gases
- ONPA: Ontario Non-prescribed Assets, the non-regulated assets of OPG.