

Achieving our climate goals while lowering our energy bills

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The Government of Ontario is planning to implement a system of carbon pricing to help it achieve its greenhouse gas emission (GHG) emission reduction goals.¹

While there is widespread public support for actions to reduce GHG emissions, there is also concern that these actions could raise our energy bills and make Ontario's industries less competitive.

For example, the Ontario Chamber of Commerce states that:

“While the OCC supports efforts to lower greenhouse gas emissions, we are wary of any policy or regulatory change that would impose undue costs on Ontario businesses or hurt job creation, especially when the cost of business in the province is slated to rise as a result of the Ontario Retirement Pension Plan and soaring electricity rates.”²

The good news is that Ontario can achieve its 2020 GHG reduction goal, make significant progress toward achieving its 2050 goal *and* reduce the energy bills of its residential, commercial and industrial consumers by reducing its energy waste and importing low-cost water power from the Province of Quebec.

Ontario's Energy Waste

According to the Government of Ontario, it is committed to a Conservation First energy policy³ – that is, the achievement of all cost-effective energy saving opportunities. However, Ontario does not have a plan or a budget to achieve all of our feasible and cost-effective energy saving opportunities.

Furthermore, Ontario's electricity savings targets are substantially lower than those of leading U.S. jurisdictions. For example, the goal of Ontario's electricity conservation programs is to reduce Ontario's total electricity consumption by less than 1% per year between now and 2020.⁴ In contrast, the annual electricity savings targets of Massachusetts, Rhode Island and Vermont are 2% or greater.⁵

As Figure 1 reveals the cost of saving electricity (3.5 cents per kWh) is 60% to 80% lower than the forecast cost of new electricity supply from a re-built Darlington Nuclear Station (8.9 to 16.6 cents per kWh). Nevertheless, the Government's 2015-2020 electricity conservation budget (\$2.4 billion)⁶ is 80% lower than Ontario Power Generation's “high-confidence” estimate of the cost of re-building the Darlington Nuclear Station (\$12.9 billion).⁷

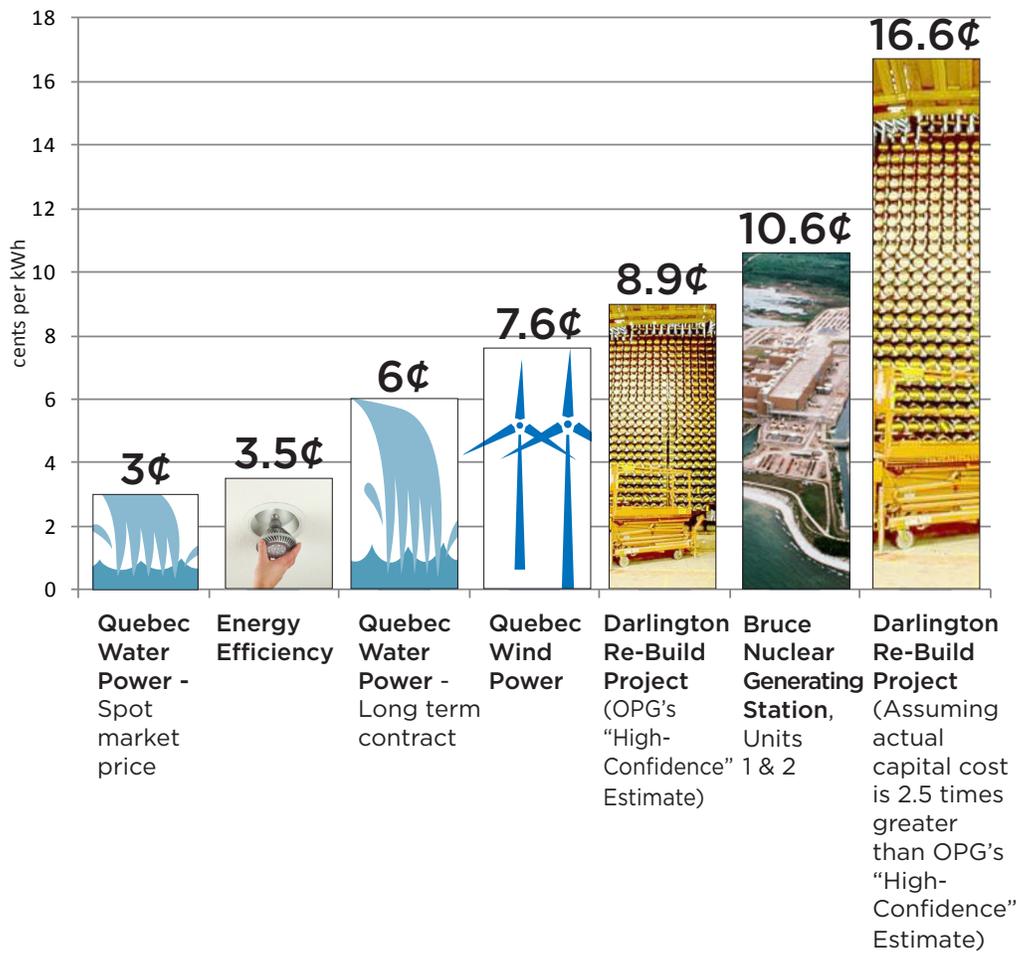
Ontario can achieve its GHG reduction goals and reduce energy bills by reducing its energy waste and importing low-cost water power from the Province of Quebec



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Fig. 1: Cost comparison of Ontario electricity options



Similarly, Ontario has a huge potential to reduce its natural gas bills by investing in energy efficiency. For example, each dollar that Union Gas spends to increase the energy efficiency of its large industrial customers leads to \$54 of cumulative energy bill savings.⁸

Nevertheless, the Ontario Energy Board (OEB) is proposing to arbitrarily cap the energy conservation budgets of Enbridge Gas Distribution at \$75 million per year⁹ despite the fact that it would need a budget of more than \$200 million per year to achieve just 50% of its customers' potential cost-effective natural gas energy savings by 2024. Such savings would reduce energy bills by \$10 billion (2015\$).¹⁰

Similarly, the OEB is proposing to arbitrarily cap Union Gas' energy conservation budget at \$60 million per year despite

the fact that a larger budget would lead to dramatically lower bills and a more competitive economy.¹¹ Specifically, since Union's annual natural gas sales are 25% greater than Enbridge's, its pursuit of all of its customers' potential cost-effective energy savings would reduce their bills by significantly more than \$10 billion.

Importing Low-Cost Water Power from Quebec and Cancelling the Darlington Re-Build Project

Ontario's next door neighbour, the Province of Quebec, is the fourth largest producer of water power in the world and has the lowest electricity rates in North America.

As a result of the shale gas revolution, which has dramatically reduced the cost of natural gas-fired electricity generation in the United States, the average price of Hydro Quebec's exports fell by almost 40% between 2008 and 2014.¹²

According to the Quebec Energy Commission, Hydro Quebec can only obtain high prices for its exports during the 300 peak demand hours of each year. And, as a result of transmission constraints, Quebec can only export a maximum of 10 billion kWh per year during this window or less than 40% of its exports in 2014. Its remaining exports are sold at an average price of just 3 cents per kWh.¹³

In February 2014 the Quebec Energy Commission forecast that the quantity of Hydro Quebec's low-price exports (3 cents per kWh) will grow by 50% between 2014 and 2022. That is, from 20.1 to 31.1 billion kWh per year.¹⁴

According to Ontario Power Generation's (OPG) "high-confidence" estimate, it will cost \$12.9 billion to re-build the Darlington Nuclear Station to produce electricity at a cost of 8.9 cents per kWh.¹⁵

In this context, it is important to note that every nuclear project in Ontario's history has gone massively over-budget – on average by 2.5 times.¹⁶ If history repeats itself, the actual cost of the Darlington Re-Build Project will be \$32 billion (\$12.9 billion x 2.5).

According to Ed Clark, former CEO, TD Bank, the Darlington Re-Build "carries enormous risk."¹⁷

Clearly, it doesn't make sense to re-build Darlington to obtain electricity at a cost of at least 8.9 cents per kWh when Quebec is exporting large quantities of electricity to the U.S. for only 3 cents per kWh.

Assuming a re-built Darlington could produce electricity for only 8.9 cents per kWh, the total net benefit to Canada of cancelling the Darlington Re-Build Project and replacing it with water power imports from Quebec would be more than \$1.4 billion per year. If this benefit were split equally between Ontario and Quebec, each province would come out ahead by more than \$700 million per year. Over a 20-year contract term this could provide an economic benefit of more than \$14 billion for each province. This sharing of benefits could be achieved by signing a long-term electricity contract at a price of 6 cents per kWh.

Alternatively, if we assume that the actual cost of re-building Darlington would be 2.5 times greater than Ontario Power Generation's "high-confidence" estimate and the price of water power imports from Quebec is 6 cents per kWh, the annual savings for Ontario's electricity consumers would be \$2.6 billion per year – or \$52 billion over 20 years.¹⁸

At the November 21, 2014 joint meeting of Ontario and Quebec cabinet ministers at the Fairmont Royal York Hotel in Toronto, the Governments of Ontario and Quebec agreed to: "Investigate long-term opportunities to expand electricity trade".¹⁹

The cost savings from a long-term electricity deal with Quebec would help to offset any increase in costs caused by the imposition of a carbon price for Ontario businesses and residents. It would also help us to avoid a repeat of the circumstances that led to a 120% increase in dirty coal fired generation when seven nuclear units had to shut down for repairs starting in 1998.

Instead of turning to increased natural gas generation for 15-20 years while waiting for nuclear reactors to be rebuilt, we can import zero emission water power from Quebec, increase our energy efficiency and continue to develop made-in-Ontario renewable energy resources. The result would be a more flexible and lower-cost electricity system that provides emission reductions to 2050 and beyond.

Conclusion

By combining carbon pricing with the implementation of its *Conservation First* policy and the signing of a long-term electricity supply contract with Hydro Quebec, Ontario can achieve its 2020 GHG emission reduction targets and reduce its energy bills by more than \$34 billion.

Recommendations

- The Government of Ontario should direct the Independent Electricity System Operator to develop a Conservation First Electricity Savings Plan to achieve **all** of our feasible and cost-effective electricity savings opportunities by 2020.
- The Government of Ontario should direct Enbridge Gas Distribution and Union Gas to develop

Savings from Quebec power imports could help to offset any cost increases caused by the introduction of carbon pricing

Conservation First Natural Gas Savings Plans to achieve **all** of the feasible and cost-effective natural gas savings opportunities in their service territories by 2020.

- The Government of Ontario should reduce our electricity bills by \$700 million to \$2.6 billion per year by cancelling the Darlington Re-Build Project and signing a long-term electricity supply contract with Hydro Quebec.

For More Information

Ontario Clean Air Alliance Research Inc., *Ontario's Long-Term Energy Plan: A One Year Review*, (November, 2014); and

Ontario Clean Air Alliance Research Inc., *Reducing Ontario's Greenhouse Gas Emissions Due to Natural Gas Consumption*, (January, 2015).

Endnotes

- 1 Ontario Ministry of Environment and Climate Change, *Ontario's Climate Change Discussion Paper 2015*, page 38.
- 2 Ontario Chamber of Commerce, *OCC Rapid Policy Update: The Government is Set to Put a Price on Carbon*, (March 2, 2015). <http://connectingptbo.ca/news/tag/ontario-chamber-of-commerce>
- 3 Government of Ontario, *Achieving Balance: Ontario's Long-Term Energy Plan*, (December 2013), pages 3 and 20.
- 4 Ontario's electricity savings target for 2020 is 7 TWH. In 2014 Ontario's total electricity consumption was 139.8 TWH. Ontario Power Authority, *Conservation First Framework Update: Presentation to SAC*, (June 24, 2014), pages 7 & 8; and Independent Electricity System Operator, IESO News, "IESO releases 2014 Electricity Production, Consumption and Price Data", (January 15, 2015).
- 5 American Council for an Energy-Efficient Economy, *The 2014 State Energy Efficiency Scorecard*, (October 2014), page 38.
- 6 Ontario Power Authority, *Conservation First Framework Update: Presentation to SAC*, (June 24, 2014), pages 7 & 8.
- 7 Ontario Energy Board Docket No. EB-2013-0321, Exhibit L, Tab 4.7, Schedule 6, ED-005.
- 8 Union Gas, *Demand Side Management 2013 Annual Report*, (November 4, 2014), page 16.
- 9 Ontario Energy Board, EB-2014-0134 *Report of the Board: Demand Side Management Framework for Natural Gas Distributors (2015-2020)*, page 18.
- 10 Navigant Consulting Inc., *Natural Gas Energy Efficiency Potential Study: Final Report Prepared for Enbridge Gas Distribution Inc.*, (January 15, 2015), pages xii and 118.
- 11 Ontario Energy Board, EB-2014-0134 *Report of the Board: Demand Side Management Framework for Natural Gas Distributors (2015-2020)*, page 18.
- 12 Commission sur les enjeux energetiques du Quebec, *Maitriser Notre Avenir Energetique*, (February 2, 2014), page 177 and Hydro Quebec, Annual Report 2014, page 98.
- 13 *Maitriser Notre Avenir Energetique*, pages 177, 181.
- 14 *Maitriser Notre Avenir Energetique*, page 183.
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- 17 Ontario Ministry of Finance, News, "Remarks delivered by Ed Clark, Chair of the Advisory Council on Government Assets, at the Metro Toronto Convention Centre, October 17, 2014".
- 18 Ontario Clean Air Alliance Research Inc., *Ontario's Long-Term Energy Plan: A One Year Review*, (November 10, 2014), pages 4 and 5.
- 19 Office of the Premier of Ontario, *Backgrounder*, "Agreements Reached at Quebec-Ontario Joint Meeting of Cabinet Ministers", (November 21, 2014).

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