

Hydro imports can lower our electricity bills by \$1 billion per year

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Quebec is the fourth largest producer of hydro-electricity in the world.¹ And its electricity rates are amongst the lowest in North America. In fact, Montreal's residential electricity rates are 45% lower than Toronto's. And its rates for large industrial consumers are 55% lower.²

Nevertheless, in 2012, hydro imports from Quebec met just 1.7% of Ontario's electricity needs.³ This doesn't make sense.

By importing more hydro-electricity from Quebec, we can lower our electricity bills and make our industries more competitive.

As Table 1 reveals the cost of importing hydro from Quebec is 50% lower than Ontario Power Generation's *preliminary* estimate of the cost of re-building the Darlington Nuclear Station, namely 8.6 cents per kWh.

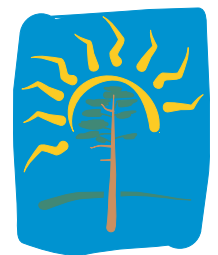
Table 1: Hydro Quebec Imports vs. Darlington Re-Build: A Cost Comparison

| Hydro Quebec Average Export Price in 2012 | Ontario Power Generation's Preliminary Estimate of the Cost of Re-Building Darlington Nuclear Station | Ontario Clean Air Alliance's Estimate of the Cost of Re-Building Darlington Nuclear Station |
|---|---|---|
| 4.1 cents per kWh ⁴ | 8.6 cents per kWh ⁵ | 19 to 37 cents per kWh ⁶ |

And it is important to remember that every nuclear project in Ontario's history has gone massively over budget — on average by 2.5 times.⁷ The recently completed re-building of the Point Lepreau Nuclear Station in New Brunswick has similarly run massively over budget — it has cost 2.4 times more to finish than the original estimates.⁸ As a consequence, we believe that the actual cost of re-building Darlington would be much more than 8.6 cents per kWh. In fact, we think it is more likely to be in the range of 19 to 37 cents per kWh.

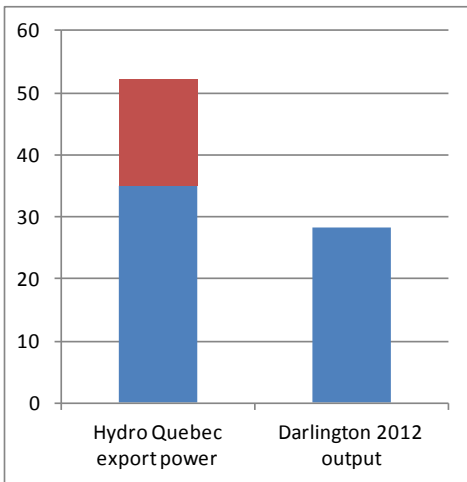
This means that hydro-electric imports from Quebec can dramatically lower our electricity bills. For example, even if we assume that the cost of re-building Darlington is only 8.6 cents per kWh, hydro-electricity imports from Quebec would lower our electricity bills by \$1 billion per year without the need for additional transmission lines between the two provinces.⁹ These imports would be equivalent to 86% of the annual output of the aging Darlington Nuclear Station.¹⁰ And even larger bill savings could be achieved if we expanded the transmission capacity between Ontario and Quebec.

The cost of importing hydro from Quebec is 50% lower than Ontario Power Generation's preliminary estimate of the cost of re-building the Darlington Nuclear Station



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Quebec has more than enough surplus power to help Ontario keep its lights on



This chart shows the difference between Quebec's current export capacity (blue on left) and soon-to-be-added additional capacity (red) and the 2012 output of the Darlington nuclear station (in billions of kWh)

In 2012, Hydro Quebec's total electricity exports were equivalent to 125% of the total output of Darlington. Most of these exports were to the U.S. pursuant to short-term contracts. As a consequence, Hydro Quebec has the flexibility to redirect most of its exports to Ontario.

In addition, according to Hydro Quebec, when its Eastmain-1-A/Sarcelle/Rupert and Romaine hydro projects are completed in the near future it will be able to produce approximately 17 billion *additional* kWh of electricity per year. This is equivalent to more than 10% of Ontario's total annual electricity consumption.

Finally, Quebec's electricity consumption per person is the highest in the world and double that of Ontario. Therefore, by promoting conservation and efficiency, Hydro Quebec could lower the electricity bills of its domestic customers and free up more of its existing heritage hydro capacity to make exports to Ontario and the U.S.¹¹

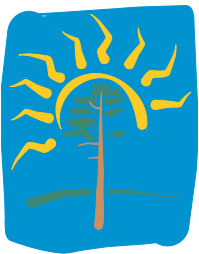
According to the *National Energy Board Act*, Hydro Quebec must sell electricity to Ontario at the same price that it sells it to the U.S.

What you can do

Ask Premier Wynne to negotiate a long-term electricity supply contract with Hydro Quebec which will lower our electricity bills and make our manufacturing industries more competitive. You can contact Premier Wynne at premier@ontario.ca.

Endnotes

- 1 Equiterre and Ontario Clean Air Alliance Research Inc., *Higher Profits and Lower Bills: A New Electricity Strategy for Hydro Quebec*, (2010), page 1.
- 2 Hydro Quebec, *2013 Comparison of Electricity Prices in Major North American Cities*, pages 4 & 5.
- 3 In 2012 our net electricity imports from Quebec equalled 2.4 billion kWh and our total annual electricity consumption was 141.3 billion kWh. Email from Juliana Bruno, Customer Relations, Independent Electricity System Operator (IESO) to Jack Gibbons, Ontario Clean Air Alliance (OCAA), September 4, 2013; and IESO, *News Release*, "Ontario's Independent Electricity System Operator Releases 2012 Electricity Production, Consumption and Price Data", (January 11, 2013).
- 4 Hydro Quebec, *Annual Report 2012*, page 99.
- 5 OPG's estimate excludes capitalized interest and future escalation. See Ontario Energy Board Docket No. EB-2013-0321, Exhibit D2, Tab 2, Schedule 1, Page 14.
- 6 Ontario Clean Air Alliance Research, *The Darlington Re-Build Consumer Protection Plan*, (2010), page 2.
- 7 *The Darlington Re-Build Consumer Protection Plan*, Appendix A.
- 8 <http://atlantic.ctvnews.ca/cost-of-refurbishing-point-lepreau-nuclear-plant-could-be-3-3-billion-pmo-memo-1.1362644>
- 9 The electricity transfer capacity between Ontario and Quebec is 2,788 MW. [Ontario Energy Board Docket No. EB-2008-0272, Ex. I, Tab 5, Schedule 6] Therefore Ontario can import 24.4 billion kWh of electricity per year from Quebec (2,788 MW x 8760 hours per year). The difference between the cost of electricity imports and the cost of re-building Darlington is at least 4.5 cents per kWh (8.6 cents per kWh - 4.1 cents per kWh). Therefore by importing 24.4 billion kWh from Quebec we can reduce our electricity costs by at least \$1 billion per year (24.4 billion kWh x 4.5 cents per kWh).
- 10 In 2012 the Darlington Nuclear Station produced 28.3 billion kWh. See Ontario Power Generation, *Performance Report for Darlington Nuclear - 2012*. <http://www.opg.com/power/nuclear/pdf/2012Q4Darlington.pdf>
- 11 Hydro Quebec, *Annual Report 2012*, pages 9 and 99; Equiterre and Ontario Clean Air Alliance Research, *Higher Profits and Lower Bills: A New Electricity Strategy for Hydro Quebec*, (July 2010), page 4; and Independent Electricity System Operator, *News Release*, "Ontario's Independent Electricity System Operator Releases 2012 Electricity Production, Consumption and Price Data", (January 11, 2013).



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