Ontario’s Electricity Options: A Cost Comparison

UPDATE
Wind and solar prices continue to plummet. Between 2018 and 2019, the Government of Alberta purchased wind and solar power for 3.9 and 4.8 cents per kWh respectively.

Quebec water power – spot market price: In 2017 the average price of Ontario’s spot market electricity purchases from Quebec was 2.2 cents per kWh. Financial Accountability Office of Ontario, Electricity Trade Agreement: An Assessment of the Ontario-Quebec Electricity Trade Agreement, (Spring 2018), page 7.

Quebec water power – firm contract: On June 22, 2017 Hydro Quebec offered to sell Ontario 8 billion kWh per year, for 20 years, at a price of 6.12 cents per kWh. In August 2017 Hydro Quebec lowered its proposed price to 5 cents per kWh, but the Government of Ontario still refused to accept the offer. Letter from Steve Demers, Vice President, Hydro Quebec to Peter Gregg, CEO, Independent Electricity System Operator, (June 22, 2017); and Pierre Couture, “Hydro Quebec l’Ontario en ligne de mire”, Journal de Montreal, (August 16, 2017).

In 2017 the average price of Hydro Quebec’s short and long-term electricity exports was 4.7 cents per kWh. Hydro Quebec, Annual Report 2017, page 76.

Quebec wind power: In 2014 Hydro Quebec used a competitive procurement process to contract for wind power at an average generation cost of 6.3 cents per kWh. Hydro Quebec, Press Release, “Calls for tenders for the purchase of 450 MW of wind power: Hydro-Quebec Distribution accepts 3 bids totalling 446.4 MW”, (December 16, 2014).


Small Modular Reactor: The Canadian nuclear industry is forecasting that the cost of electricity from a small modular reactor (SMR) will be 16.3 cents per kWh; however they note that if there is a 3% capital cost overrun the cost will rise to 21.5 cents per kWh. They are hoping that the first commercial SMR will be in-service by 2030. Canadian Small Modular Reactor Roadmap Steering Committee (2018), A Call to Action: A Canadian Roadmap for Small Modular Reactors, pages 35 and 54.

Price of Nuclear Power in 2025: Ontario Power Generation has told the Ontario Energy Board that it will need to raise its price of nuclear power to 16.5 cents per kWh in 2025 to pay for the re-building of the Darlington Nuclear Station. Ontario Energy Board Docket No. EB-2016-0152, Exhibit N3, Tab 1, Schedule 1, Attachment 2, Table 14.

Alberta wind power: In 2018, the Government of Alberta used a competitive bidding process to obtain 763 megawatts (MW) of wind power at an average price of 3.9 cents per kWh. Government of Alberta, News Release, “Wind projects create jobs, Indigenous partnerships”, (December 17, 2018).

Alberta solar power: In 2019, the Government of Alberta used a competitive bidding process to obtain up to 146,000 megawatt-hours of solar electricity per year at an average price of 4.8 cents per kWh. Government of Alberta, News Release, “Alberta-based solar power on the rise”, (February 15, 2019).

Thanks to the M.H. Brigham Foundation, the Echo Foundation, the Green Sanderson Family Foundation, and the Taylor Irwin Family Fund at the Toronto Foundation for their generous financial support.