Environmental Defence Interrogatory #14

Interrogatory

Reference:
Exhibit F2, Tab 1, Schedule 1, Page 24-25

Preamble:

> "In EB-2016-0152, OPG presented the Pickering Extended Operations initiative aimed at operating Pickering Units 1 and 4 to 2022 and Pickering Units 5-8 to 2024 (EB-2016-0152, Ex. F2-2-3). OPG expects this initiative will be completed by 2021 at a total cost of $307M, consistent with the forecast presented in EB-2016-0152.
>
> This application reflects OPG's plans to safely optimize the shutdown 1 of Pickering by operating all six units until September 2024, five of the six units through 2024 and the remaining four units until December 2025, as per the 2020-2026 Business Plan ("Optimization"). OPG will require CNSC approval to operate the remaining four units past 2024 until December 2025."

Questions:

(a) Does OPG strive to deliver power from each of its generation facilities at a cost that is less than alternative electricity sources?
(b) Does OPG believe the OEB is precluded from considering the reasonableness of its payment amounts requests with reference in part to the cost of electricity from alternative electricity sources?
(c) In particular, does OPG believe that is should be paid to invest in the extended operation of Pickering even if the power it produces would be more expensive than alternatives? If yes, please explain why.
(d) Does OPG believe the OEB is precluded from considering whether OPG should be paid the entire proposed cost to invest in the extended operation of Pickering even if the power it produces would be more expensive than alternatives?
(e) According to Lazard, the cost of offshore wind is 8.6 cents per kWh (US $), which is approximately 11.2 ¢/kWh CAD. Lazard, *Lazard's Levelized Cost of Energy Analysis – Version 14.0 (October 2020) page 2.*[1] Does OPG have reason to disagree? If yes, please provide OPG's best estimate.
(f) Please file a copy of the Lazard report so it can be referred to with an exhibit number in this proceeding.
(g) Does OPG believe Lazard is a credible organization?
(h) Does OPG believe the Lazard report cited above is credible?

[1] https://www.lazard.com/media/451419/lazards-levelized-cost-of-energy-version-140.pdf

(i) According to Lazard, the cost of onshore wind is 2.6 to 5.4 cents per kWh (US $), which is approximately 3.4 to 7 ¢/kWh CAD. Lazard, *Lazard's Levelized Cost of Energy Analysis – Version 14.0 (October 2020)* page 2. Does OPG have reason to disagree? If yes, please provide OPG's best estimate.

(j) According to Lazard, the cost of utility scale solar PV is 2.9 to 4.2 cents per kWh (US $), which is approximately 3.8 to 5.5 ¢/kWh CAD. Lazard, *Lazard's Levelized Cost of Energy Analysis – Version 14.0 (October 2020)* page 2. Does OPG have reason to disagree? If yes, please provide OPG's best estimate.

(k) 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. 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). Does OPG have reason to disagree? If yes, please provide OPG's best estimate of the price of firm electricity imports from Quebec.

(l) 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. Does OPG have reason to disagree? If yes, please provide OPG's best estimate of the price of spot market purchases from Quebec.

(m) If OPG disagrees, please file a copy of the document referred to above so it can be referred to in an interrogatory response.

(n) In 2017 the Independent Electricity System Operator's (IESO) average levelized unit energy cost (LUEC) of procuring a kWh of electricity savings was 1.69 cents. Independent Electricity System Operator, *2017 Report on Energy-Efficiency Activities*, page 8. Does OPG have reason to disagree? If yes, please provide OPG's best estimate of the cost (LUEC) of electricity conservation.

(o) A report prepared for the Government of Ontario identified 64 potential offshore wind power sites in the Great Lakes that could produce 111.5 billion kWh of electricity per year.[2] This is equivalent to 82% of Ontario's total electricity consumption in 2019.[3] Does OPG have reason to disagree? If yes, please provide OPG's best estimate of Ontario's off-shore wind power generation potential.

(p) This MIT paper describes how Hydro Quebec's hydro-electric reservoirs can be used as a low-cost storage solution.[4] When our wind power production is above average, our surplus wind energy can be exported to Quebec to keep the lights

[2] Helimax Energy Inc., *Analysis of Future Offshore Wind Farm Development in Ontario*, (April 2008), pages iii, 18 & 19.
[3] In 2019 Ontario consumed 135.1 billion kWh. IESO, News Release, "2019 Year in Review", (January 30, 2020).
[4] Emil Dimanchev, Joshua Hodge and John Parsons, *Two-Way Trade in Green Electrons: Deep Decarbonization of the Northeastern U.S. and the Role of Canadian Hydropower*, MIT Center for Energy and Environmental Policy Research; http://ceepr.mit.edu/files/papers/2020-003-Brief.pdf

on in Montreal, and Hydro Quebec can store more water in its reservoirs. Conversely, when our wind power generation is below average, Hydro Quebec can use the extra water in its reservoirs to produce electricity for export back to Ontario. Does OPG have reason to disagree? If yes, please describe the extent to which it is technically feasible for Hydro Quebec's hydro-electric reservoirs to be used as a low-cost storage solution.

(q) Does OPG believe the cost of alternative electricity options is relevant to the amount it is paid for its regulated generation facilities?

(r) Should OPG be paid for the full cost of its generation facilities even if that cost is higher than alternatives? If yes, why?

(s) Should electricity ratepayers pay OPG to develop SMRs even if the expected cost of power from SMRs ($/MWh) is higher than alternatives?

(t) Should electricity ratepayers pay OPG to develop SMRs even if the expected cost of power from SMRs ($/MWh) is more than twice as high as alternatives?

Response

a) OPG declines to respond on the basis of relevance. The questions seek system planning information that is not relevant to deciding any issue before the OEB in this application. See Ex. L-F2-01-Environmental Defence-10 c).

b) OPG believes that the OEB's authority to establish payment amounts for OPG's prescribed facilities is established in section 78.1 of the *Ontario Energy Board Act, 1998* and the regulations made under that section. OPG further believes that an examination of the OEB's authority to set payment amounts is not a proper focus of this proceeding and therefore declines to answer on the basis of relevance.

c) See response to part a).

d) See response to part b).

e) See response to part a). OPG further notes that the cited document does not form part of its evidence.

f) See response to part e).

g) See response to part e).

h) See response to part e).

i) See response to part e).

j) See response to part e).

k) See response to part a).

l) See response to part a). OPG further notes that the cited document does not form part of its evidence.

m) See response to part a). OPG further notes that the cited document does not form part of its evidence.

n) See response to part a). OPG further notes that the cited document does not form part of its evidence.

o) See response to part a). OPG further notes that the cited document does not form part of its evidence.

p) See response to part a). OPG further notes that the cited document does not form part of its evidence.

q) See response to part b).

r) See response to part a).

s) See Ex. L-F2-08-AMPCO-159.

t) See response to part a).