130 Queens Quay East, Suite 902
Toronto, Ontario M5A 0P6
T 416.926.1907 F 416.926.1601
www.pollutionprobe.org

Ms. Nancy Marconi
Acting Registrar
Ontario Energy Board
P.O. Box 2319, 27th Floor
2300 Yonge Street
Toronto, ON M4P 1E4

March 25, 2022

OEB EB-2021-0243
Generic Hearing on Uniform Transmission Rates
Export Transmission Service Rate
Pollution Probe Interrogatories to Hydro One and IESO

Dear Ms. Marconi:

In accordance with Procedural Order No. 1 dated November 20, 2021, please find attached Pollution Probe's interrogatories for the above proceeding.

Respectfully submitted on behalf of Pollution Probe.

Michael Brophy, P.Eng., M.Eng., MBA
Michael Brophy Consulting Inc.
Consultant to Pollution Probe
Phone: 647-330-1217
Email: Michael.brophy@rogers.com

cc: Richard Carlson, Pollution Probe (via email)
John DeVenz (via email)
All Parties (via email)

EB-2021-0243

ONTARIO ENERGY BOARD

Generic Hearing on Uniform Transmission Rates
Export Transmission Service Rate

POLLUTION PROBE INTERROGATORIES

March 25, 2022

Submitted by: **Michael Brophy**

Michael Brophy Consulting Inc.

Michael.brophy@rogers.com

Phone: 647-330-1217

28 Macnaughton Road

Toronto, Ontario M4G 3H4

Consultant for Pollution Probe

PP-1

Reference: ETS Rate Submissions, page 13 of 14

“For these reasons, the IESO maintains the view that reducing the ETS rate to zero would best encourage the efficient use of electricity and promote economic efficiency in the Ontario market…….Therefore, the IESO recommends the rate be set at zero or no higher than the current $1.85/MWh to maximize efficient use of electricity and promote economic efficiency in the Ontario market.”

ETS Rate Submissions, attachment 3, page 9 of 17

“From an economic standpoint, exports of energy from Ontario have contributed between $330-520 million of value annually[12] to Ontario between 2017 and 2020 as shown on Table 1. Intertie trading reduces total costs for Ontario consumers by generating revenues, contributing to fixed system costs and avoiding incremental system costs.”

a) Is the IESO permitted to use a dynamic or a market-based approach to the ETS? If this is not permitted, please explain why not?

b) Does the IESO believe a dynamic or market-based ETS will generate a higher level of net economic benefits to Ontario ratepayers than the current fixed rate of $1.85/MWh or even a zero ETS rate?

   That is charge a higher rate during periods of high electricity pricing differentials between Ontario and neighbouring jurisdictions and a lower or zero ETS rate during periods of low pricing differentials - resulting in both higher export volumes and net economic benefits to Ontario ratepayers.

c) Can increasing the net economic benefits to Ontario ratepayers as outlined in b) be achieved by simply eliminating the ETS or setting it to zero and allowing the ICP to maximize revenues using its dynamic pricing? What are the pros and cons of eliminating the ETS?

d) What are the pros and cons of setting the ETS rate to zero versus eliminating it?

PP-2

Reference: ETS Rate Submissions, page 13 of 14

"For these reasons, the IESO maintains the view that reducing the ETS rate to zero would best encourage the efficient use of electricity and promote economic efficiency in the Ontario market…….Therefore, the IESO recommends the rate be set at zero or no higher than the current $1.85/MWh to maximize efficient use of electricity and promote economic efficiency in the Ontario market."

Submissions on the ETS Rate, Attachment 3, pages 9-10 of 17

"Uplift: Exporters also contribute approximately $40-50 million per year[17] in uplift charges for system reliability provided through Ancillary Services and Operating Reserve. The export contribution reduces the cost that has to be recovered from domestic consumers for these services."

a) Can the same argument the IESO makes to justify reducing the ETS rate to zero be applied to uplift charges as well? If not, please explain.
b) Are uplift charges based on a fixed rate or competitive market-based approach?
c) If uplift charges are a fixed rate, how is this rate determined? Is it updated annually or some other time interval?
d) What organization is responsible for determining the methodology and rate for uplift charges?
e) Please provide the back-up calculations for the uplift charges provided in Table 1.

PP-3

Reference: ETS Rate Submissions, page 13 of 14

"For these reasons, the IESO maintains the view that reducing the ETS rate to zero would best encourage the efficient use of electricity and promote economic efficiency in the Ontario market…….Therefore, the IESO recommends the rate be set at zero or no higher than the current $1.85/MWh to maximize efficient use of electricity and promote economic efficiency in the Ontario market."

Submissions on the ETS Rate, Attachment 1, page 22 of 44.

Table 5 outlines the annual export volumes in MWh per year, which range from ~13 million MWh to ~23 MWh.

a) Assuming no economic barriers to exporting electricity, what is the approximate absolute technical potential of export volumes in GWh per year? Please provide key assumptions and back-up calculations.

b) If a dynamic or market-based approach was applied to the ETS, what is the approximate realistically achievable total export volumes in GWh per year? What is the total estimated net economic benefits of this export volume? Please provide key assumptions and back-up calculations.

c) If a dynamic or market-based approach was applied to both the ETS and uplift charges, what is the approximate realistically achievable total export volumes in GWh per year? What is the total estimated net economic benefits of this export volume? Please provide key assumptions and back-up calculations.

PP-4

Reference: ETS Rate Submissions, page 13 of 14

"For these reasons, the IESO maintains the view that reducing the ETS rate to zero would best encourage the efficient use of electricity and promote economic efficiency in the Ontario market."

a) If reducing the ETS rate from $1.85/MWh to zero "would best encourage the efficient use of electricity and promote economic efficiency…" does it follow that a dynamic or market-based ETS rate with the option to offer an incentive (negative ETS rate) in order to export electricity that provide net economic benefits to Ontario ratepayers?

   That is during periods of low electricity pricing differentials, drive higher export volumes that would otherwise not transact due to the ETS rate - even if priced at zero.

b) Is the IESO permitted to offer a dynamic or market-based export rate with the option of an incentive or negative ETS rate? If not, please explain why not.

c) Please explain the pros and cons of a dynamic or market-based ETS rate with the option to offer an incentive or negative ETS rate?

PP-5

Reference: ETS Rate Submissions, page 3 of 14

"Hydro One retained R. J. Rudden to perform a "Jurisdictional Survey of Export and Wheel-through Service Rates". The report regarding the survey was issued on June 26, 2006 and was filed by Hydro One for consideration in proceeding EB-2006-0501."

Reference: Submissions on the ETS Rate, Attachment 1, page 22 of 44.

Table 5 outlines the annual export volumes in MWh per year, which range from ~13 million MWh to ~23 MWh.

a) What are the charges per MWh for wheel-through services? Is it fixed or competitively priced?

b) Please provide the annual wheel-through volumes in GWh for 2017 – 2020.

c) What are the annual revenues (in millions) from wheel-through charges for 2017 - 2020?

d) What are the estimated annual reductions in volume of exports for 2017 - 2020 due to wheel-through services?

e) What are the estimated lost opportunities in avoid system costs as a result of lower export volumes due to wheel-through services?

PP-6

Reference: Submissions on the ETS Rate, Attachment 3, page 7 of 17

"Historically, Ontario has been a net exporter of electricity, primarily to the U.S. jurisdictions, and a net importer from Quebec."

Reference: Submissions on the ETS Rate, Attachment 3, page 9 of 17

"From an economic standpoint, exports of energy from Ontario have contributed between $330-520 million of value annually[12] to Ontario between 2017 and 2020 as shown on Table 1. Intertie trading reduces total costs for Ontario consumers by generating revenues, contributing to fixed system costs and avoiding incremental system costs."

"note 13 - Based on avoided nuclear and renewable resource curtailment, equal to 14TWh, 12TWh, 13TWh and 14TWh for 2017-20 respectively."

a) Based on note 13, are all exports only from nuclear and renewable energy resources such as hydroelectric, solar or wind that produce zero carbon emissions? If not, please explain.
b) Are there any system cost savings from avoiding the curtailment of non-renewable resources or other sources not outlined in note 13 above?
c) Please provide the back-up calculations for the "Avoided System Costs" provided in Table 1.
d) Do exports increase or decrease the utilization of distributed energy resources (DER)? Please explain your answer. Is the impact material?
e) Are there net economic benefits to Ontario ratepayers to increase the utilization of DER/CDM initiatives like demand response and energy efficiency to make room for additional exports? That is incremental benefits over and above those realized from the DER/CDM initiatives alone. Please explain your answer.

PP-7

Reference: Submissions on the ETS Rate, Attachment 3, page 7 of 17

"Historically, Ontario has been a net exporter of electricity, primarily to the U.S. jurisdictions, and a net importer from Quebec."

Submissions on the ETS Rate, Attachment 3, page 9 of 17

"note 13 - Based on avoided nuclear and renewable resource curtailment, equal to 14TWh, 12TWh, 13TWh and 14TWh for 2017-20 respectively."

a) Please provide annual estimates for increased annual production of renewable energy sources like hydroelectric, solar and wind for 2017 - 2020 in GWh due to avoided curtailments. Please provide a breakdown for each.
b) Does the IESO or Ontario generators sell renewable energy credits or low carbon financial instruments to U.S buyers given Ontario's lower carbon intensity generation versus U.S. jurisdictions?
c) If the answer to b) is no, is there an opportunity to do so and provide additional economic benefits to Ontario ratepayers? If not, please explain why not?
d) Please provide an estimate of the value of renewable energy credits or low-carbon financial instruments from exports in 2020 and 2021. Please provide key assumptions and back-up calculations.

PP-8

Reference: Submissions on the ETS Rate, Attachment 3, page 9 of 17

Table 1 Value from Exports 2017-2020 indicates that "Avoided System Costs"[13] range from $153M to $240M per year.

"note 13 - Based on avoided nuclear and renewable resource curtailment, equal to 14TWh, 12TWh, 13TWh and 14TWh for 2017-20 respectively."

A recent study by the IESO entitled "Decarbonization and Ontario's Electricity System" highlighted that the average carbon intensity of Ontario's electricity grid is materially lower than neigbouring U.S. jurisdictions[1]. This suggests that increased exports reduce regional GHG emissions due to a lower marginal carbon intensity of exports versus generation in U.S. jurisdictions.

a) Please provide an estimate of the annual regional reduction in CO_2e emissions for 2017- 2020 from Ontario exports using estimated marginal carbon intensity differences. If marginal intensities are not available, please use averages. Please provide key assumptions and back-up calculations.

b) Please provide an estimate of the annual change in CO_2e emissions in Ontario for 2017 - 2020 as a result of exports during these years.

[1] https://www.ieso.ca/-/media/Files/IESO/Document-Library/gas-phase-out/Decarbonization-and-Ontarios-Electricity-System.ashx, page 5

PP-9

Reference: Submissions on the ETS Rate, Attachment 3, page 10 of 17

"An important feature of the ICP is that it is dynamic and automatically adjusts with the value of the intertie capacity, which itself is dependent upon hourly market conditions."

a) Is dynamic pricing of the ICP another term for either a market-based or settlement-based approach? That is, they are understood to pursue the same objective of maximizing revenues utilizing a competitive market pricing system.

PP-10

Reference: Submissions on the ETS Rate, attachment 3, page 10 of 17

"ETS: Exporters contribute to the costs of maintaining a reliable transmission system bypaying ETS and Uplift. The IESO typically collects between $30 and 40 million per year[16]through ETS which is charged each time an exporter flows electricity out of Ontario. ETS revenues collected are used to reduce transmission costs paid by domestic consumers.

Uplift: Exporters also contribute approximately $40-50 million per year[17] in uplift charges for system reliability provided through Ancillary Services and Operating Reserve. The export contribution reduces the cost that has to be recovered from domestic consumers for these services."

ETS Rate Submissions, Attachment 3, page 16 of 17

"Exporters contribute to the cost of the Ontario transmission system through two mechanisms. The first mechanism is through the fixed ETS rate and the second mechanism is through the dynamic ICP mechanism."

a) Are uplift charges fundamentally different than the ICP and ETS? If so, please explain how.
b) Please explain the rationale for 3 different charges to exports (ICP, ETS and Uplift) for what on the surface appears to pursue a similar objective to generate revenues from exports?
c) If the OEB determines that a dynamic or market-based approach should be applied to the ETS, ICP and Uplift charges, can all 3 be consolidated into one charge? What are some of the pros and cons of one consolidated dynamic or market-based charge for all 3?
d) If the OEB determines that a fixed charge should be applied to the ETS and uplift charges, should the ETS and uplift charges be consolidated? What are some of the pros and cons of consolidating these two charges?

PP-11

Reference: ETS Rate Submissions, Attachment 3, page 13 of 17

“When exports do not flow, no ICP, ETS or Uplift revenues are collected to defray domestic consumer system costs.”

a) Please provide an estimate of the annual volumes of exports in GWh that did not flow for 2017-2020 in GWh due to the current export rate of $1.85/MWh.

b) Please provide an estimate of the annual average system costs for 2017-2020 that were not avoided because exports did not transact due to the ETS fixed rate of $1.85/MWh.