

IN THE MATTER OF the *Ontario Energy Board Act, 1998*,
S.O. 1998, c. 15, Schedule B (the "Act");

AND IN THE MATTER OF a review of an application filed
by Hydro One Networks Inc. for an order or orders
approving a transmission revenue requirement and rates
and other charges for the transmission of electricity for
2013 and 2014.

FINAL SUBMISSIONS OF THE ASSOCIATION OF MAJOR POWER
CONSUMERS IN ONTARIO WITH RESPECT TO THE
EXPORT TRANSMISSION SERVICE RATE

MARCH 22, 2013

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Overview

1. These are the submissions of the Association of Major Power Consumers of Ontario (“AMPCO”) in respect of the Ontario Energy Board’s (the “Board”) determination of an export transmission service (“ETS”) rate for Ontario.
2. The Board has periodically considered the question of what an appropriate ETS rate would be, and thus the question of appropriate rate determinants, since 2000. AMPCO has been active in all the hearings where the export charge has been at issue. Most recently, the Board ordered that the Independent Electricity System Operator (the “IESO”) oversee a comprehensive analysis of a range of rates and consider various pros and cons associated with each option. As a result, the IESO commissioned two studies from Charles River Associates (“CRA”), including *Export Transmission Service (ETS) Tariff Study* (the “CRA Report”)¹ and *Export Transmission Service Tariff Study Review of Rates in Neighbouring Jurisdictions* (the “Review of Rates Report”).² Additional evidence was also produced by intervenors. This evidence was scrutinized through the interrogatory process over the course of four transmission rate hearings. The IESO has also undertaken attempts to negotiate the reciprocal elimination of export charges with neighbouring jurisdictions.
3. If the Board wishes to determine an ETS rate as the outcome of this hearing, the Board should weigh the various stakeholder priorities presented during the hearing. In these submissions, AMPCO will attempt to assist the Board in evaluating these positions.
4. AMPCO submits that only a principled approach to selecting an ETS rate will provide the Board and stakeholders with the guidance desired and required by all to ensure the Ontario electricity marketplace operates efficiently and to allow the ETS rate to be adjusted with circumstances and according to the policies of the Government of Ontario.
5. The balance of these submissions first presents an overview of the principles AMPCO believes should guide the Board’s consideration of the evidence, and, second, a discussion of several issues that emerge from the evidence the Board has heard, which AMPCO submits should influence the Board in making its decision regarding an ETS rate. AMPCO takes no position regarding a particular ETS rate.

¹ Ex. H1-5-2, Appendix B.

² Ex. I-23-1.02 Staff 85, Attachment 1.

Core Principles: Efficiency and Consumer Welfare

6. AMPCO submits that the foremost principles to be considered by the Board in making its determination in this matter are those of efficiency and consumer welfare. Both of these considerations are among the Board's stated objectives. Further, efficiency is identified in the CRA Report as a generally accepted rate making principle³ and is one of the Bonbright Principles of rate design, which have been endorsed by the Board in the past.⁴
7. Efficiency and consumer interest are closely aligned, as an efficient marketplace should benefit consumers. In such a market, free ridership should be avoided unless it can be shown to provide net benefit to the system generally and Ontario consumers in particular. In this respect, other key principles such as cost recovery and fairness are also dependent on efficient rate design.
8. Further, these principles would encourage the Board to consider how the ETS rate might incent the best possible use of Ontario's transmission assets. More specifically, charges should encourage improved asset utilization and, consequently, lower lifecycle asset cost. In this way, more efficient behavior by any customers benefits all customers.

Evidentiary Considerations*Overview of the Evidence*

9. Evidence was presented by three parties to this application: the IESO, Hydro Quebec Energy Marketing ("HQEM") and the Association of Power Producers of Ontario ("APPRO"). We begin with a brief overview of this evidence before turning to a discussion of several questions arising from the materials and examinations of the concurrent panel.

IESO Evidence: The CRA Report

10. The IESO evidence consisted of two reports prepared by CRA, plus supporting documentation from IESO stakeholder process SE-94. The central CRA Report provided an analysis of the likely effects of four different ETS rates, in comparison to the status quo rate. This analysis considered impacts on export levels, surplus baseload generation ("SBG") and economic surplus for domestic consumers, producers and Ontario as a whole. The Review of Rates Report provided a

³ Ex. H1-5-2, Appendix B, Pages 39-40.

⁴ Ontario Energy Board, Staff Discussion Paper, Rate Design for Recovery of Electricity Distribution Costs, EB-2007-0031, March 31, 2008 (revised June 6, 2008).

comparison of ETS charges in different jurisdictions in the North American Electrical Reliability Corporation (“NERC”) region.⁵

11. The CRA has modelled the North American power industry, down to the individual generator level. As instructed by the IESO, the CRA Report does not take a position regarding which ETS rate is “best” and the CRA witnesses declined to offer an opinion on this point at the hearing.⁶
12. At the concurrent panel, the IESO also presented Darrell Finkbeiner as a technical expert to answer questions regarding the mechanics of the Ontario marketplace.

HQEM Evidence

13. HQEM submitted a report prepared by Elencus Research Associates Inc. (the “HQEM Report”) which provided background on the Bonbright principles and argued that the Board should require a careful cost allocation exercise be completed prior to any change in the ETS rate.⁷
14. Although the report discusses some examples of rate discounting for “interruptible” service, the authors acknowledged that the HQEM Report is not intended to offer any opinion on what an appropriate cost of service for exports would be, nor what discount, if any, should be applied to the rate in reference to the cost of service associated with exports.⁸

APPrO Evidence

15. The APPrO evidence was prepared by Cliff Hamal of Navigant Economics (the “APPrO Report”)⁹ and Marc-Andre Laurin of Brookfield Energy Marketing LP. This evidence advocated for at least a maintenance of the status quo, or, preferably, the lowering or elimination of the ETS charge.
16. APPrO’s analysis of the CRA Report rests on broad economic critique rather than numeric analysis or modeling. Specifically, the APPrO Report presents the following propositions:
 - (a) Economic theory and practice dictate that export tariffs reduce economic efficiency.¹⁰
 - (b) There is little, if any, cost involved when exports use the Ontario transmission network.

⁵ Ex. I-23-1.02 Staff 85, Attachment 1, Page 5.

⁶ Transcript, Volume 3, Page 112-113, Lines 26-5.

⁷ Ex. K2.2, Pages 3-5.

⁸ Transcript, Volume 3, Page 104, Lines 16-21.

⁹ Ex. K2.1.

¹⁰ Ex K2.1, Page 1, Paragraph 2.

- (c) Intertie Congestion Revenues accrue to consumers.
- (d) Any producer surplus generated will accrue to consumers, thus making consumers whole with respect to the loss of consumer surplus.
- (e) A significant increase in the ETS charge would “kill trade.”¹¹

Analysis of the Evidence

17. AMPCO encourages the Board to consider ensuring an ETS rate that supports an efficient marketplace overall, but which also protects the interests of Ontario consumers with respect to price, adequacy, reliability and quality of electricity service.

What is the Cost of Exports to the Transmission Network?

18. Both the HQEM Report and the APPrO Report posit that exports add very little marginal cost to the Ontario transmission system and should therefore not attract a significant transmission service charge.¹² In this respect, exports are characterized as using only excess capacity on the Ontario grid.¹³ Moreover, HQEM claims that no Ontario transmission assets are built to serve the needs of exports.¹⁴ These claims appear to rest on the IESO’s response to certain interrogatories where the IESO stated that it was not aware of any generation being operated or planned exclusively for the provision of firm export capacity nor was it aware of any plans to construct transmission assets for the purposes of supplying firm export capacity.¹⁵ In a second interrogatory, the IESO referenced market rules allowing for exports to be curtailed before non-dispatchable loads.¹⁶
19. Transmission assets are rarely constructed to service a particular end use, but rather are intended to meet the needs of the grid as a whole; as such, one cannot conclude that a failure to build transmission assets specifically for exports necessarily indicates that exports do not contribute to the overall transmission capacity requirements of the grid. Clearly, exports can contribute to overall demand volume and this demand may be considered when planning new assets. For example, from the perspective of the IESO and Ontario Power Authority, the Hydro One-Hydro Quebec 1250MW interconnection project was built to allow Ontario to bank off-peak power in Quebec reservoirs. The Ontario portion of this project was budgeted at \$122.8 million.

¹¹ Transcript, Volume 3, Page 43, Lines 20-23.

¹² Ex. K2.2, Page 11, Lines 14-15; Page 12, Lines 8-9; Ex. K2.1, Page 3;

¹³ Ex. K2.2, Page 6, Lines 8-10, 11-14; Ex. K2.1, Page 10.

¹⁴ Ex. K2.2, Page 11, Lines 14-15.

¹⁵ I-23-6.02 HQ01.

¹⁶ I-23-6.02 HQ02.

Accordingly, intertie assets are built to serve both imports and exports, as both are needed to manage the stability and reliability of the grid.

20. Further, the network planning process does not normally consider whether the end user of power being transported over the grid is in-province or out, nor does it build facilities to enable generation connections only to the extent that the generation will supply domestic load. The network is simply built to serve the volumes of traffic expected on it, while maintaining reliability and security.
21. Exports accounted for 12.8% and 15.2% of electricity carried over Ontario's transmission grid, in 2010 and 2011, respectively.¹⁷ Current Hydro One and IESO forecasting for 2013 and 2014 suggests the percentage of exports will remain at 10% or more of total transmission volume through 2015, regardless of what rate option the Board selects.¹⁸ Accordingly, if exports were a distribution company, they would be the third largest in Ontario, behind only Hydro One and Toronto Hydro.¹⁹
22. Furthermore, exports appear to utilise the transmission system at both peak and off peak times. Generally, baseload generation flows out during off-peak periods, with gas fired generation being exported during peak periods.²⁰ The following chart from the Market Surveillance Panel report illustrates the point :

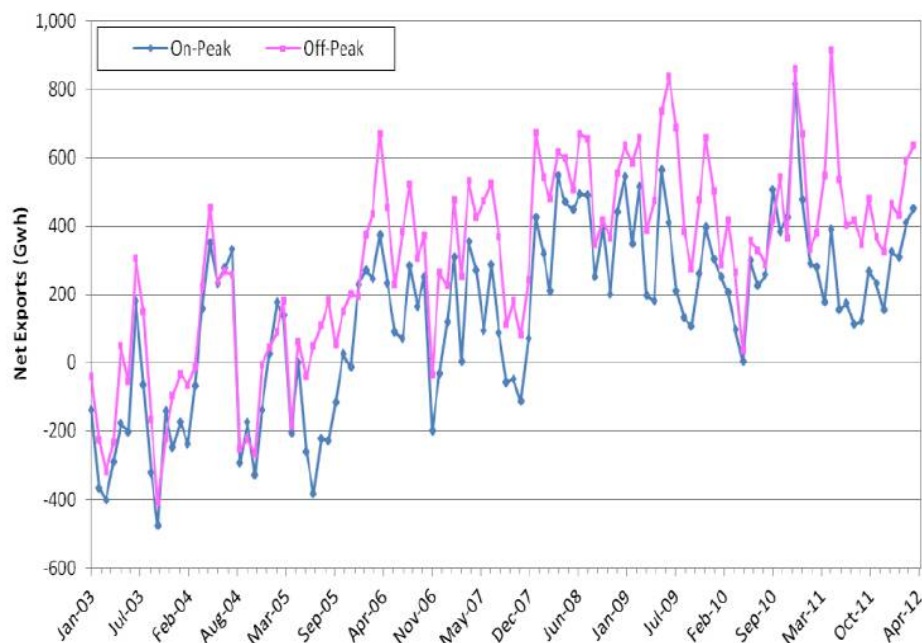
¹⁷ I-23-6.02 HQ11.

¹⁸ Hydro One projects export revenue for \$31.0M and \$30.1M in 2013 and 2014, respectively (Ex G1-T2, Sch 1, Page 20, Table 2). At the assumed current rate of \$2/MWhr, this implies exports of over 15 TWhrs in each year. Ontario domestic energy consumption was below 140 TWhrs in the period May 2011- April 2012 (Market Surveillance Report, Page 56, Table 2.1) and forecast to decline in 2013 and 2014 (Ex. A, Tab15, Sch 2, Table 3). This is expected to be the case regardless of the rate (IESO Undertaking J2.4).

¹⁹ Ontario Energy Board Yearbook of Electricity Distributors.

²⁰ Ex. H1-5-2, Appendix B, Page 8, Paragraph 1.

**Figure 1-26: Net Exports (Imports), On-peak and Off-peak
January 2003 – April 2012
(GWh)**



23. In light of the above, AMPCO encourages the Board to consider whether export consumers should be treated as a marginal user of the transmission system with traffic confined to periods when the transmission grid is relatively idle or whether export customers should be expected to contribute to the costs of transmission service in the same way that domestic consumers do.

What is the Level of Service Received by Exports?

24. The exports of both HQEM and APPrO state that exports receive “inferior service” and are treated as an interruptible electricity supply.²¹
25. The IESO treats exports in a manner consistent with Federal Energy Regulatory Commission (“FERC”) rules for firm transmission, meaning that exports are treated as any “firm” transmission load delivered within Ontario.²²

²¹ Ex. K2.2, Page 11, Lines 12-13; Ex. K2.1, Page 3.

²² Transcript, Volume 2, Page 143, Lines 22-28.

26. AMPCO suggests that the Board consider whether or not exports receive inferior service when treated in accordance with the FERC rules regarding firm transmission.

How Should Consumer Surplus be Calculated?

27. AMPCO submits that, in considering the potential and probable efficiency levels associated with each rate option under consideration, there are several specific considerations the Board must address. These considerations will be particularly important in evaluating the impact of a potential rate change on the welfare of Ontario consumers, a key consideration for the Board in its decision making. Specifically, the Board should address the following questions:
- (a) Should Intertie Congestion Revenue (“ICR”) be considered as part of consumer surplus?
 - (b) Should producer surplus be considered as part of consumer surplus?
 - (c) How should the results of the CRA Report be interpreted?
28. The CRA Report considered impacts of the various ETS rates on consumer surplus, producer surplus and ICR, with the sum of all of these figures together represented the total Ontario surplus.²³ Surplus levels are taken as a proxy for efficiency in the CRA Report.²⁴

Does ICR Accrue to Customers?

29. ICR is revenue collected by the IESO when interties are congested. The CRA Report considered changes in ICR as part of its analysis of the varying rate options considered. ICR was considered, in the CRA Report, to be a component of total Ontario surplus, but not consumer surplus specifically.²⁵ The APPRO Report contended that ICR should be considered a contribution to consumer surplus as the funds could be returned to Ontario consumers by the IESO.²⁶ The IESO’s submissions adopt this proposition.
30. ICR is currently used by the IESO to make payments to transmission rights (“TR”) holders.²⁷ Many of these TR holders are financial players, who may or may not be located in Ontario.²⁸ Thus, ICR does not channel to Ontario consumers directly and some unknown portion is channeled out of Ontario to extra-provincial TR holders.

²³ Ex. H1-5-2, Appendix B, Pages 27, 31, 34, 35, Tables 7-10.

²⁴ Ex. H1-5-2, Appendix B, Page v.

²⁵ Ex. H1-5-2, Appendix B, Page 24.

²⁶ Ex K2.1, Page 4, first paragraph; Transcript Volume 2, Page 39, Lines 16-22.

²⁷ Transcript Volume 2, Page 113, Line 25 – Page 115, Line 9.

²⁸ Transcript Volume 2, Page 101, Lines 20-26.

31. In considering the overall efficiency of a given ETS rate, and the impact of that rate on Ontario consumers, AMPCO suggests the Board consider whether or not ICR is properly considered part of a consumer surplus.

Does Producer Surplus Accrue to Customers

32. The CRA Report considered changes in producer surplus as part of its analysis of the varying rate options considered. The APPrO Report contended that producer surplus should be considered a contribution to consumer surplus because most, and possibly all, producer surplus would accrue to the unregulated assets owned by Ontario Power Generation (“OPG”). Since OPG is owned by the government of Ontario, the APPrO Report takes the position that such surplus should be viewed as, effectively, a consumer surplus.²⁹
33. No evidence was presented, however, to indicate whether or how any surplus realized by OPG from exports would or will flow to the company's bottom line and then on to the government's general revenue account. It is also the case that OPG's unregulated assets may be monetized by the Ontario government at any time. Further, even if the surplus flows to the benefit of Ontarians generally, it would likely flow in proportion to taxes paid by Ontarians, not in proportion to electricity consumption, which have little direct correlation.
34. In considering the overall efficiency of a given ETS rate, and the impact of that rate on Ontario consumers, AMPCO suggests the Board consider whether or not producer surplus is properly considered part of a consumer surplus.

How Should the Results of the CRA Report be Interpreted?

35. The IESO's submissions refer to the CRA Report in respect of the IESO's statement that an ETS rate of \$0 will result in a consumer surplus higher than with the other tariff options. The CRA Report, however, concludes that consumer surplus is highest when the Equivalent Average Network Charge rate of \$5.80 per megawatt hour is modelled.³⁰
36. It appears that the IESO has removed the ETS rate-related revenue collected from exporters from its calculations of consumer surplus, although this figure was included in the CRA Report's calculations. The ETS rate-related revenues are the single largest proposed wealth transfer considered among the components of consumer surplus.

²⁹ Ex. K2.1, Page 4, second paragraph.

³⁰ Ex. H1-5-2, Appendix B, Page 40, Table 12.

37. AMPCO submits that the Board should consider the total impact on consumers of each or any ETS rate under consideration.

Will an Increase in the ETS Rate “Kill” Trade?

38. The hearing dedicated considerable time to the question of how a change in the ETS rate may effect energy trading and Ontario’s ability to sell excess energy as exports. APPrO’s witnesses in particular argued that increasing the ETS rate would “kill trade”.³¹ The IESO’s submissions refer to this evidence, as well as FERC’s promotion of policies eliminating export charges.
39. In addition to the CRA Report, the CRA also produced the Review of Rates Report on the levels of comparable export tariffs in other jurisdictions.³² This report sets out, in depth, the types of services and cost allocation to exports in neighbouring jurisdictions. For convenience, the summary table is provided below.

TABLE 5.1 – EXPORT (PTP) TRANSMISSION SERVICE RATE SUMMARY									
PERIOD	MISO		PJM		NYISO	ISO-NE ³³		TransÉnergie	
	Firm	Non-firm	Firm	Non-Firm		Firm	Non-Firm	Firm	Non-Firm
ANNUAL \$/kW-year	29.3756		18.669		\$2.9233/MWh - \$5.5056/MWh	63.135		72.45	72.45
MONTH \$/kW-month	2.448	2.448	1.556	1.556				6.04	6.04
WEEK \$/kW-week	0.5649	0.5649	0.3590	0.3590				1.39	1.39
DAY –Peak \$/kW-day	0.1130	0.1130	0.0718	0.0718				0.28 ³⁴	0.20 ³⁵
DAY – Off-peak \$/kW-day	0.0805	0.0805	0.0513	0.0513					
HOUR–Peak \$/MWh		7.0608		4.4875			7.207		8.24
HOUR – Off-peak \$/MWh		3.3531		2.1350					

³¹ Transcript, Volume 3, Page 43, Lines 20-23.

³² Ex. I-23-1.02 Staff 85, Attachment 1.

40. For Ontario, the relevant neighbouring jurisdictions are those covered by the Midwest Independent Transmission System Operator (“MISO”), New York Independent System Operator (“NYISO”) and TransEnergie (Hydro-Quebec’s transmission system operator).
41. There is little evidence on the actual or anticipated impacts of increasing export charges on trade. In 2011, the Board directed that Ontario’s ETS charge double from the previous \$1.00 to \$2.00/MWhr. Neither of the APPrO witnesses were aware of any evidence regarding what effect, if any, this historic increase had on trading. Further, all neighbouring jurisdictions have higher export transmission service charges than Ontario, with Quebec being the highest, and, nonetheless, have maintained a robust inter-jurisdictional trade. It may also be worth noting that, where both firm and non-firm rates are offered, they are usually identical, as is required by the FERC rules.
42. A further consideration of interest to the Board may be that all jurisdictions having accomplished export charge elimination have only done so in the context of reciprocity agreements between jurisdictions. No jurisdiction in the NERC area has unilaterally eliminated its export tariff.³³ The Board may consider that if one jurisdiction has an export charge and the other has none, energy will flow to the cost advantage of the customers in the jurisdiction with the export charge. Further, it may be that mutual tariff elimination for Ontario may only be effectively negotiated if Ontario maintains an export charge.
43. AMPCO suggests that an important consideration of the Board in its decisions on this matter should be what evidence exists regarding the potential impact of an export charge on both trade, as well as the ability of Ontario to negotiate reciprocal agreements eliminating such charges with other jurisdictions.

What is the Impact on Ontario’s Competitiveness?

44. AMPCO submits that the Board should also consider how a particular ETS rate may effect the trade balance between the export tariffs on each side of the interties. In this respect, the IESO submits that elimination of the charge would improve efficiencies; however, it may be that a tariff asymmetry would act to suppress prices in neighbouring jurisdictions while raising them in Ontario. As many Ontario consumers are businesses with competition on the other side of the interties, this could have the effect of reducing the power cost of American manufacturers while raising costs for the competing Canadian counterparts.

³³ Ex. H1-5-2, Appendix B, Page 15, Table 2.

45. Further, the IESO notes the decrease in North American production costs under the unilateral elimination option in its submissions.³⁴ The CRA Report finds that while total production costs will decline, production costs for Ontario will increase in the unilateral elimination scenario.³⁵ AMPCO suggests that the Board may consider the differential impact on Ontario production costs versus total production costs for all neighbouring jurisdictions in reaching its decision.

Conclusion

46. In sum, AMPCO submits that the following issues should guide the Board in its consideration of the matter before it:
- (a) whether export consumers should be treated as a marginal user of the transmission system with traffic confined to periods when the transmission grid is relatively idle or whether export consumers should be expected to contribute to the costs of transmission service like domestic consumers.
 - (b) whether or not exports receive inferior service when treated in accordance with the FERC rules for firm transmission.
 - (c) whether or not ICR is properly considered part of a consumer surplus.
 - (d) whether or not producer surplus is properly considered part of a consumer surplus.
 - (e) the total impact of each or any ETS rate under consideration on consumers.
 - (f) what evidence exists regarding a potential impact of an export charge on trade, as well as the ability of Ontario to negotiate reciprocal agreements eliminating such charges.
 - (g) how a particular rate option will impact Ontario's competitiveness, with particular regard to cross-border energy costs and investment in production costs.
47. Further, it is AMPCO's position that these issues be considered with particular attention to which outcome is most likely to lead to an efficient marketplace which benefits Ontario consumers.

³⁴ Ex. H1-5-2, Appendix B, Page 91 of 102, Table 6.

³⁵ Ex. H1-5-2, Appendix B, Page 91 of 102, Table 6.