

I. Overview

As a component of the study and analysis of the Export Transmission Service (ETS) Tariff Study the Independent Electricity System Operator (the "IESO") has also considered the potential reliability and operational implications of each of the ETS options. This analysis is based on a qualitative examination of the potential impacts, on reliability and operation of the IESO-controlled grid, with respect to incremental trade volumes (i.e., both increases and decreases) that are attributed to each ETS option, as well as a review of historical trade patterns under various conditions. For the purposes of the assessment, Option #1 – Status Quo, was used as a baseline against which the effects all other options were measured. Although Option #1 is used as the baseline it does not suggest any preference to this option but is simply a means to compare the potential changes in trade volumes or impact associated with each of the other options relative to today's environment.

II. ETS Options Considered

- Option 1 Status Quo.** The ETS tariff remains the same at \$1/MWh applicable to export transactions.
- Option 2 Equivalent Average Network Rate.** Under this option, export and wheel through transactions will be charged based on the regulated average cost of providing network transmission service, but using energy as the charge determinant (i.e., \$/MWh).
- Option 3 Reciprocal Treatment of Export Transmission Service Charge.** This option considers two potential forms of reciprocal treatment (i.e., joint elimination of all ETS tariffs between jurisdictions, and basing Ontario's ETS tariff on the regulated average network cost of providing transmission service in each of the other jurisdictions, except New York wherein the ETS is deemed to be jointly eliminated).
- Option 4 Unilateral Elimination of the ETS tariff.** This option considers two scenarios under which the Ontario ETS tariff would be unilaterally eliminated, including elimination of the tariff during off-peak hours only.

III. Assessment

Each of the options above has been studied with quantitative analysis preformed by CRA International¹. From these studies each option has been shown to have pricing (HOEP), export revenue, import and export volumes, market efficiency and emission impacts relative to the status quo. Because actual future outcomes will be impacted by changes in, among other things, economic activities, generation resource mix, government policy change (e.g., CO₂), etc. internal and external to Ontario, the IESO's reliability and operational assessment does not rely solely on the findings of the CRA study and analysis. We also relied on our knowledge of historical practices and understanding of how participants generally react to market and system conditions.

¹ Export Transmission Service (ETS) Charge Scenario Analysis – Draft Preliminary Report and Findings, June 20, 2009.

In the preliminary CRA findings the transactional changes relative to the status quo showed, depending on the option, export volume changes which range from a potential reduction of 24% to 8% increase for the 2010 test period. Correspondingly, import volumes range from an 8% reduction to a potential increase of up to 193% of current export volume. Year 2015 revealed more moderate impacts with export volumes ranging from a 15% decrease to a potential increase of 2%, while import volumes range from a net increase of 1 to 32%. It is not possible to predict the actual reliability or operational impacts that these changes will have on the integrated power system, given that changes to Ontario trade patterns will likely have an associated cause and effect in respect of surrounding jurisdictions. In all ETS tariff cases however, a change in trade volumes will result in a change in loop-flows across the system and will also impact the frequency and magnitude of congestion arising from contract path scheduled flows, as well as unscheduled flows. Since market opening, the IESO has witnessed a wide range of transaction scheduling and loop-flows across the interfaces with our neighbours. For example, in 2002 during periods when Ontario was energy deficient, the IESO saw record imports exceeding 4000 MW per hour, while more recently with the turn in the economy, due to reduced demands and large amounts of surplus base-load generation Ontario has been exporting at unprecedented volumes. In that time Ontario has also experienced a change in loop flow patterns where the predominately and sometimes extreme counter-clockwise Lake Erie circulation has reversed clockwise reaching comparable extremes.

During these dynamic periods of operation, the combination of market and operational responses and processes employed in Ontario has successfully managed reliability effects within the prescribed requirements of the prevailing standards authorities. Upon reviewing the preliminary findings of the CRA study, we note that the incremental changes in trade volumes that are attributed to different ETS options fall well within the boundaries of the extremes that have been observed to date; accordingly, we know them to be manageable from a market and reliability perspective. The IESO's dispatch processes are designed to ensure that all transmission and adequacy requirements are maintained within reasonable limits, and the transmission system optimized and resources scheduled and dispatched to account for prevailing transmission limits, including the impact of loop-flow and demand requirements. The CRA study and findings introduces no new challenges that the IESO dispatch and reliability management processes cannot accommodate.

IV. Conclusion

The IESO's dispatch processes has proven reliable in response to a wide range of transactional and loop-flow patterns; accordingly, the various ETS tariffs considered will not adversely impact the IESO's ability to maintain reliability. The extremes in system operation are limited only by the capacity of the system and having successfully operated at both ends of the spectrum, the potential trade volumes contemplated under the various ETS tariff scenarios does not represent a new risk or impairment to Ontario's reliability. The IESO's market and operational processes are well established and equipped to accommodate incremental trading volumes arising from implementation of any of the ETS options under consideration.