TransAlta Corporation
Box 1900, Station "M"
110 - 12th Avenue SW
Calgary, Alberta
T2P 2M1

T (403) 267-7110
www.transalta.com

Chris Codd
Senior Regulatory Advisor
Direct Line: [redacted]
Email: [redacted]

June 18, 2020

Independent Electricity System Operator
120 Adelaide St. W
Toronto, ON
M5H 1T1

Sent via Email
Attention: Tom Chapman, Senior Manager, Market Development and Strategy

Dear Tom:

RE: Transmission Rights Market Review Stage 1 – Value Assessment

TransAlta appreciates the opportunity to comment on the IESO's Transmission Rights Market ("TR Market") Review. This letter provides TransAlta's responses to the questions posed by the IESO at the May 21, 2020, webinar and provides other comments on the IESO's webinar.

TransAlta is supportive of the TR Market Review. TransAlta believes that the existing TR Market is serving its intended purpose and provides significant value to market participants, including consumers and producers. Though the TR Market is serving its intended purpose, TransAlta agrees with the IESO that there is an opportunity to improve the operation and efficiency of the TR Market.

How are TRs used in practice by stakeholders?

At a high level, TRs are designed to be the financial equivalent of firm transmission service. TRs allow market participants to hedge against congestion price spreads between Ontario's energy market (HOEP) and the intertie zonal price (IZP).

TRs facilitate an almost infinite number of trading strategies involving different markets and different time periods (e.g., day-ahead to real-time). Consider some examples in the existing market:

- A market participant sees an opportunity import power into Ontario from New York during the summer peak. Short-term TRs allow the market participant to mitigate the congestion price risk. The availability of TRs incentivizes market participants to flow when there is a price difference between HOEP and the neighbouring jurisdiction rather than the price difference against the IZP. In this situation, TRs support more competition on the interties, which provides lower prices to Ontario consumers.

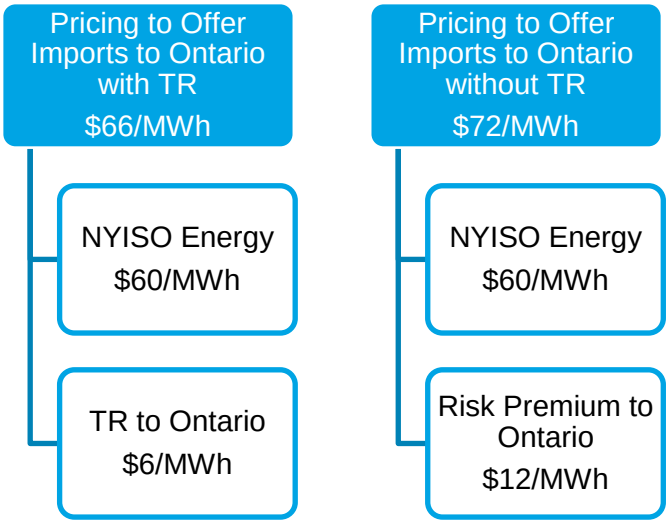
- A neighbouring crown corporation sees an opportunity to export power from Ontario to meet its winter peak in a more cost-effective way than using its internal generation. However, they are concerned that the IZP could be pushed up by market participants seeking to wheel power through their province which could make the power uneconomic. A short-term TRs allows the crown corporation to mitigate the risk that prices would increase due to congestion. This increases utilization of Ontario's generation fleet.

- A market participant sees an arbitrage opportunity between a one-year forward purchase in a neighbouring market and one-year forward sale in Ontario. However, the market participant is concerned that congestion will make these one-year commitments too risky. The market participant buys a long-term TR to hedge the congestion risk. In this example, long-term TRs support liquidity in Ontario's forward market.

Following the implementation of the Capacity Auction, there will be many more examples, such as:

- A market participant has sold resource-backed capacity imports. The market participant has to offer imports into Ontario during the obligation period. The market participant generally offers its import at a high price because it cannot recover start costs or ensure a minimum run-time for its asset because imports are not eligible for cost recovery through the Day-Ahead Market or Enhanced Real-time Unit Commitment process. A long-term TR reduces the congestion risk associated with bringing power from the resource and encourages the efficient participation of that asset in Ontario's day-ahead market.

These examples show that TRs allow market participants to implement strategies with different risk-reward tradeoffs than exist without TRs. Changing the TR Market design has the potential to change those risk-reward tradeoffs, which will affect how market participants offer and bid into Ontario's electricity markets (see example below). It also has the potential to deter market participants from participating in Ontario's electricity markets. The costs and benefits of TRs must be assessed across all of Ontario's markets and not solely within the TR auction.



Do TRs provide an appropriate or optimal hedge against congestion?

In our view, TRs provide an appropriate hedge against congestion that creates a price spread between the IZP and HOEP. This is only one element of the congestion risk faced by an import or export decision.

How do stakeholders manage the risk associated with TRs?

The risk associated with TRs is overpaying for a TR. This risk is managed by assessing the value of a hedge within a trading strategy, which is correlated with the potential payouts from the TR.

There is much more risk to manage when making import and export decisions without a TR. There are several risks associated with trades between jurisdictions because the costs and revenues associated with the trade are uncertain. This includes the energy prices in each market, transmission costs, congestion in both markets and foreign exchange costs. TRs reduce the risk faced by an intertie trader by providing a hedge against the congestion risk between the IZP and HOEP.

What improvements to the current design would you suggest to help maximize the value of TRs and encourage greater participation in the TR market?

TransAlta suggests four potential changes to improve the efficiency of the TR Market.

1. Provide More TR Bid Laminations

Market participants can only submit a single TR bid lamination under the current market design. More bid laminations would provide more flexibility to market participants participating in the TR auction and would be expected to support price discovery for TRs. This could also encourage greater participation in the TR Market.

2. Create a TR resale market and create a balance of period TR product

The original design of Ontario's TR market envisioned that a TR holder could assign a TR to another market participant and resell TRs in a subsequent auction. The IESO recently created a process for assigning TRs to another market participant. The IESO has not yet enabled TR holders to offer TRs for sale in a subsequent TR auction.

A resale market would help market participants reprice their hedges. This would support liquidity in the existing TR market and support various trading strategies as previously outlined.

A balance of period TR auction sells TRs for the remaining months in a TR term. For example, a balance of period auction could be run for the TRs sold in the LT_20200701 auction for each month from August 2020 to June 2021. This would complement a resale market and provide a similar opportunity for market participants to reprice or change their hedged position.

3. Publish more information and improve the accuracy of currently published information

The IESO publishes information about transmission outages and forecast interface limits that allows market participants to estimate the future congestion risk of importing and exporting.

This information also allows market participants to estimate the value of hedging that congestion risk by buying a TR.

The IESO could publish additional information and improve the accuracy of existing information. Market participants would be able to better estimate the risks they face and the value of hedging that risk with better information. This would support the efficiency of the TR market.

There are opportunities to provide more information or improve existing information that would support the TR market:

- **Publish historical data on transmission outages.** Outages are often scheduled and then deferred or cancelled but there is no historical dataset showing which outages were taken. The likelihood of an outage occurring as scheduled has a significant impact on congestion risk. An example of that information is provided in Appendix A.

- **Provide information to connect outages to intertie capability.** There is some public information to explain how an outage to a specific transmission facility affects intertie capability. It would be helpful to provide details about the facilities composing an intertie or that could affect an intertie's capability so that market participants can estimate the impact of scheduled outages on intertie capability.

- **Improve the details provided in comments on the published interface limits.** The "Transmission Facility Outage Limits" reports are critical to understanding transmission limits on the interties. However, they often include vague reasons for reduced limits, such as "Internal System Conditions". It is not possible to link scheduled outages to the intertie limits caused by "Internal System Conditions" and the. An example of this issue is provided in Appendix A to this letter.

- **Review historical data reports to improve the accuracy of published reports.** The **"**Monthly Historical Interface Flows, Schedules, Transmission Transfer Capability" report provides valuable information about historical TTC. However, it appears not to reflect some constraints such as those associated with "Internal System Conditions". An example of this issue is presented in Appendix B.

- **Correct Historical Data** – the historical TR payouts published by the IESO does not appear to reflect clawbacks or changes to IESO processes, such as the recent enforcement of not issuing payments when ATC is zero. This provides misleading information to market participants that could inflate future TR valuations. There is not currently public information to allow market participants to make these corrections themselves.

In addition, it would be helpful to publish TR auction bids because this information provides market participants with information about the trading and hedging strategies implemented by other market participants. This would help improve competition between market participants seeking to bid on TRs.

4. Review TR Offer Volumes Methodology

TransAlta is still in the process of reviewing the historical volumes of TR offered. However, we believe there is value in reviewing the current methodologies to assess whether the volume of

TRs being sold is reasonable. Our preliminary review is that there are frequently fewer TRs sold than the TTC. This analysis is provided in Appendix C but has data accuracy issues as described in Appendix B.

To support the TR review, are there lessons learned from other jurisdictions that you could provide from your experience in trading elsewhere?

Many U.S. jurisdictions have products like TRs, including FTRs in ISO-NE, MISO and PJM, TCCs in NYISO, and CRRs in CAISO. These products are integral to those markets because they allow market participants to manage congestion risk and this is viewed as a critical component of any LMP market.

These markets have found that there is value in allowing financial participants to buy and sell these products. Studies have shown that these financial participants support price discovery and can cause prices to converge towards expected values.

These markets also have policies like those recommended by TransAlta for Ontario:

1. Almost all markets provide multiple bid laminations

2. Most markets have a resale market and a balance of period product

3. Most markets provide detailed and accurate information, including historical FTR bids after a 3-4 month lag, real-time interface limit, and more transmission facility information (e.g., limits, ratings, maps, SLDs)

We are still reviewing the TR offer volume methodologies of other jurisdictions to assess how they compare to the IESO's methodology.

General Comments

The IESO's webinar on the TR Market review was helpful and presented a lot of valuable information. TransAlta is providing comments on select parts of the presentation in support of the TR Market Review.

Proposed Objective Statement

TransAlta recognizes that the intent of the new objective statement for the TR Market is to ensure that consumers are benefitting from the TR Market. This is an important objective recognizing the high cost of electricity in Ontario.

However, we are concerned that this objective is inconsistent with the *Electricity Act* and the Market Renewal Program principle of efficiency. The efficiency principle in Market Renewal aims to provide long-term value to market participants by encouraging efficient participation in markets which should lead to lower costs for consumers.

TransAlta recommends that the objective for the TR Market review should be to increase aggregate welfare for the entire market including consumers, producers and traders. Policies meeting this objective are most likely to improve the efficiency of the market and have long-run benefits to consumers.

Value of the TR Market to Ratepayers

The IESO has presented information about TR payouts and TR auction revenues. This is one measure of the benefits to ratepayers. As outlined in an earlier section, the benefits of TRs extend beyond the net revenues from the TR auction, including the impacts to congestion rents and energy prices.

We also recommend that the analysis of benefits extend further into the past to consider additional periods when system conditions differ from the significant oversupply that currently exists in Ontario. It would also be helpful to understand how the value of the TR Market will change as the Ontario market tightens during the 2020s.

Ownership Metrics

The IESO published statistics about the proportion of energy flow that was associated with TR ownership and the amount of TRs owned by financial traders.

We see the value in assessing these metrics but have two concerns about these metrics are interpreted. First, TRs are bought in advance of implementing trading strategies and there can be many reasons why a market participant bought TRs but did not end up flowing in real-time. For example, a trading strategy may no longer be viable in real-time or that the market participant was outcompeted for access to the intertie's limited transmission capability. Second, a single market participant could split its financial activities and its physical activities between separate corporate identities. We recommend exploring how these affect the ownership metrics.

In addition, the IESO does not sell enough TRs to support all scheduled trades on the interties. This means that there is a theoretical maximum to the proportion of flows that would be associated with TR ownership. For example, less than half the maximum ATC is sold on the Outaouais and New York interties and therefore this metric could never exceed 50% for those interties (in conditions where the intertie is scheduled close to its limits).

Known vs. Unknown Congestion

There was some discussion on the webinar about known and unknown congestion. It is likely that the Michigan intertie will be congested throughout most of the year. However, the congestion risk is largely unknown because that risk is the price spread between the IZP and HOEP. There are numerous factors that affect how that price spread would move, including demand, supply availability and transmission constraints within Ontario and the neighbouring market, and the intertie capability.

TRs provide a hedge against the price spread which is always going to be difficult to estimate, and therefore should be viewed as unknown congestion at the time when TRs are being purchased.

The uncertainty associated with unknown congestion could be reduced by providing better information to assess the congestion risk.

Please do not hesitate to contact me about any of the foregoing.

Yours truly,

TRANSALTA CORPORATION

CHRIS CODD
Senior Regulatory Advisor

Appendix A – Examples of Information Detail and Accuracy Improvements

An example of new information that would support the TR Market is how frequently major outages are deferred or cancelled. This information is important for assessing the future congestion risk of importing and exporting.

L51D was scheduled for a 3-week outage in November 2019. This outage was expected to significantly reduce Michigan export capability and reduced the amount of short-term TRs offered in the October and November 2019 auctions. However, this outage was not taken and Michigan export capability was not derated as much as expected.

It is difficult for a market participant to assess the congestion risk associated with known outages when they have an unknown probability of occurring. It would be helpful to provide data on the history of major outages that affect the interties to show how often such outages need to be deferred or cancelled. This would improve market participants' capability to assess the congestion risk and therefore price TRs.

An example of providing more detailed information about outages involves the limits set by "Internal System Conditions". In September and October 2019, the Michigan export limit was derated to:

- 1,100 MW for "Internal System Conditions" from roughly September 11-16.
- 1,200 MW for "Internal System Conditions" from September 17-23.
- 1,200 MW for "Internal System Conditions" from October 7-8.

The reduced limit was published in the "Transmission Facility Outage Limits Report (Days 0 to 2)" report. "Internal System Conditions" was listed as the comment for the rating change.

There did not appear to be any outages listed in the "All Transmission Outages Occurring Today" report that would affect the Michigan export limit during these dates.

We contacted the IESO to ask for further details about the internal system conditions that were causing these deratings. The IESO was unable to provide any further detail because it was difficult to specify any specific elements associated with those internal system conditions.

The lack of information makes it nearly impossible to estimate the congestion risk associated with deratings caused by internal system conditions, which makes import and export decisions riskier and prevents these risks from being included in the value of the hedge provided by a TR.

Appendix B – Example of an Information Accuracy Issue

The IESO publishes a "Monthly Historical Interface Flows, Schedules, Transmission Transfer Capability" report that provides scheduled and actual flow as well as the TTC for both the import and export directions on each intertie. This information allows market participants to assess how TTC has varied in the past and how it correlates with transmission outages.

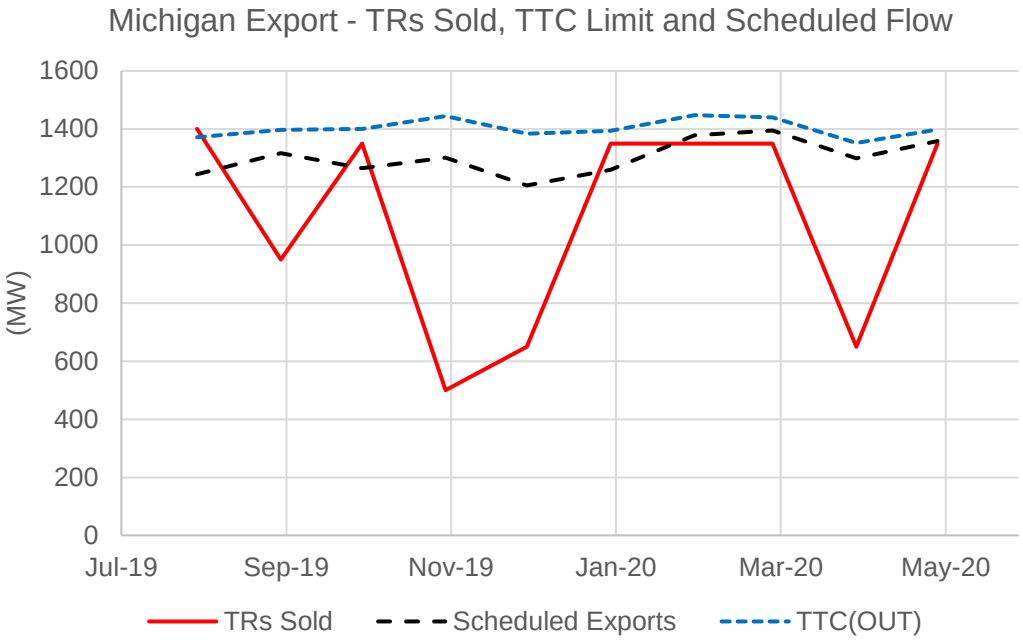
In developing the analysis in Appendix C to this letter, we identified a data discrepancy between the TTC reported in this historical report and the ATC limit in the "Transmission Facility Outage Limits Report (Days 0 to 2)" report.

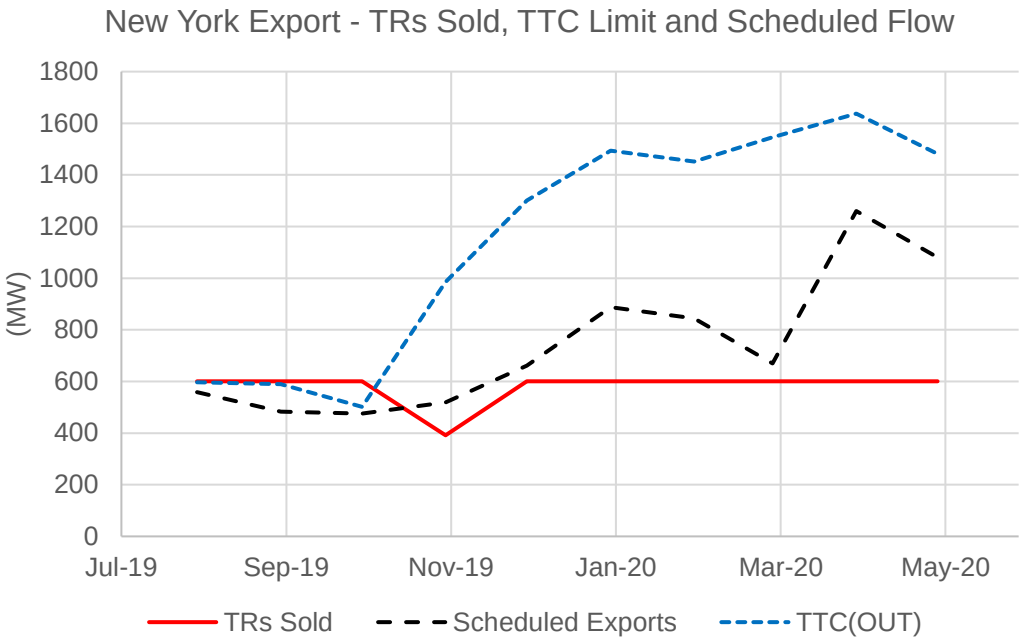
In the Fall of last year, the "Transmission Facility Outage Limits Report (Days 0 to 2)" report described internal system conditions derating the Michigan export limit (see Appendix A for more detail). However, the "Monthly Historical Interface Flows, Schedules, Transmission Transfer Capability" report does not show a derating during those periods.

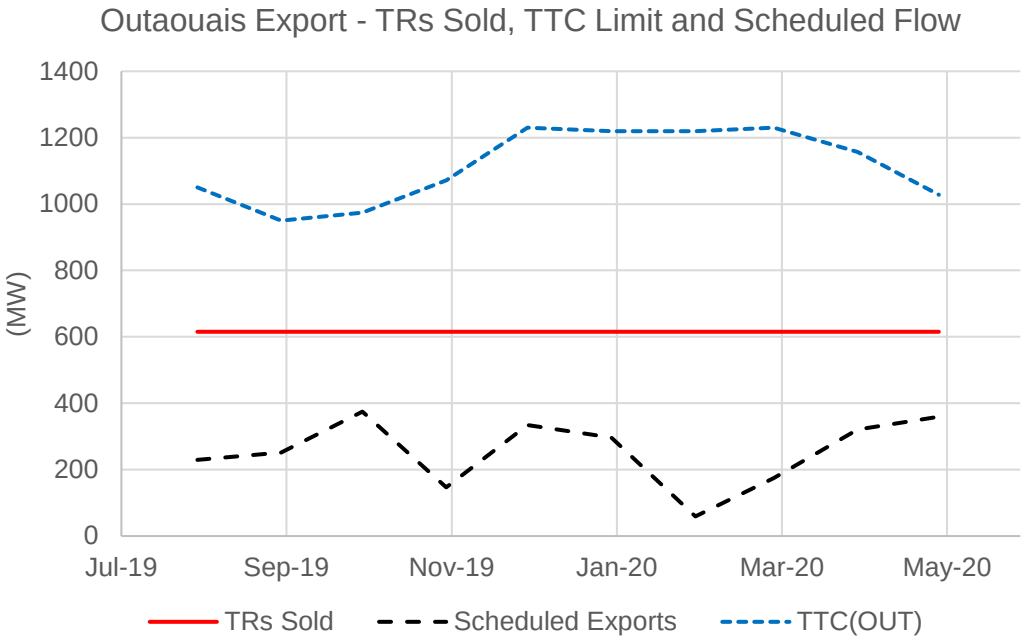
It is unclear why this discrepancy exists, but we recommend exploring the cause of the conflict between these two reports. It is important for market participants to have accurate information that they can use to estimate the congestion risk on the interties.

Appendix C – TRs Sold, TTC and Scheduled Flow, Historical

TransAlta reviewed the historical amounts of TRs sold, the TTC limit and the scheduled flow on the three major export interfaces: Michigan, New York and Outaouais. This analysis shows that fewer TRs are being sold than the TTC limit. This does not indicate that the current methodology is flawed but suggests that a review should be performed.







Sources: TRs Sold from the "Pre-Auction Report for Short Term Transmission Rights" report. TRs sold is equal to the sum of Total TR Already Sold and TR Offered.

TTC and Schedule Exports from the "Monthly Historical Interface Flows, Schedules, Transmission Transfer Capability" report.

The data source for the TTC limit may be inaccurate as described in Appendix B. In addition, the TRM has not been removed from the TTC to arrive at the ATC for each interface.