

The purpose of this Discussion Paper is to provide an overview of the IESO-Administered Transmission Rights (TR) Market and seek stakeholder feedback on Phase 1 of the Transmission Rights Market Review (SE-110).

Phase 1 consists of a review of the confidence level and its associated stabilization design. (See Page 6 of this Discussion Paper for questions which are raised to support this discussion.)

Phase 2 (to commence later in 2013), will undertake a comprehensive review of the design of the TR market to consider whether it is providing the intended objectives and to recommend any potential efficiencies or improvements.

## **Transmission Rights**

TRs are financial instruments, periodically auctioned by the IESO, that financial market participants can purchase either to hedge against intertie congestion costs in the spot market or as a speculative investment. TRs are available for certain intertie paths, import or export, between Ontario and our neighbouring external zones.

Holders of TRs are entitled to a revenue stream based on the number of rights they hold and the price differences between Ontario and intertie zones in the electricity spot market. When an intertie is congested in the direction that a financial market participant owns a TR, the TR Market pays the participant the price difference between the Ontario and intertie zone for the number of TRs owned. TR payments are made regardless of the physical energy traded or the congestion rents collected.

TRs do not provide a guarantee to the holder of a TR for physical access to the transmission system or directly affect the scheduling of transactions in the real time market.

## **Auction and Confidence Level**

TRs are made available to registered financial market participants through auction. TRs are auctioned in increments of 1 megawatt (MW). The auctions are intertie and direction specific. The highest priced bid is satisfied first and the lowest or next to lowest accepted bid price sets the market clearing price for each intertie. The revenues from each auction are credited to the transmission rights clearing account (TRCA).

Two types of auctions are held in accordance with Market Rule Chapter 8 sections 4.10 and 4.11: long-term and short-term. The minimum number of combined long-term and short-term rights sold on a path is referred to as the TR Base Quantity. The TR Base Quantity is calculated based on the total transfer capability of each intertie reduced to reflect physical factors such as ambient conditions, planned and contingent outages and system security. The TR Base Quantity was initially designed to ensure a confidence level was met such that the TR market is simultaneously feasible (rents collected, under most circumstances, are sufficient to cover any payment obligations). For example; on multi-circuit paths the TR Base Quantity is limited to the total transfer capability of the path with one circuit out of service, less applicable margins.

Long-term auctions are held quarterly. In a long-term auction TR participants can purchase 12-month TRs with the TR ownership starting at the beginning of the following quarter. In each long-term auction, the IESO offers approximately 25% of the long term capability of the intertie (25% of the TR Base Quantity or the available transfer capability, whichever is lower). Long-term auctions consist of two rounds, a couple of days apart. In round 1, 25% of the available TRs for the long-term auction are offered, with the remaining TRs offered in round 2. Any additional rights available in a specific month (in addition to the base quantity, due to higher monthly available transfer capability), along with any unsold long-term TRs, are then offered as short-term TRs. Short term auctions are held monthly and 1-month TRs, if available, are sold for the following month.

For monthly short-term auctions on multi-circuit paths and the single-circuit paths PQP33C and PQD5A, the rights available for auction are modified based on an IESO Board of Directors (IESO Board) approved stabilization formula. In July of 2003, the IESO Board approved a new TRCA stabilization process whereby the short term rights available for sale could be increased or decreased based on the disposition of the TRCA in an effort to reach a confidence level such that the TR payment obligations are equal to congestion rents plus auction revenues with a threshold of \$10 million (now \$20 million). Under the amended design auction revenues that had previously been available for payment to transmission customers (i.e., loads) as an offset to transmission service charges would now be used to facilitate an increase in the short-term rights available. The rationale for the change was that an increase in TR quantities sold would lead to the ability for more participants to hedge their trades, which in turn would lead to more bids and offers resulting in more competition. More competition in turn would result in more imports and lower prices to Ontario consumers. In addition, at the time Ontario sometimes relied upon imports for reliability of supply, so an increase in the number of TRs sold was also expected to increase power system reliability. It was also anticipated that the new process would allow for increased participation in the TR market itself, with more TR quantities being available for purchase by loads, generators, traders, or other financial market participants, therefore increasing competition in the TR market.

At the time the stabilization process was implemented the IESO Board anticipated that the benefits of selling an increased number of TRs would more than offset the benefit of the transmission service offset that Ontario loads would otherwise have obtained. The TRCA stabilization process became effective March 2004 (for April 2004) following IESO stakeholder engagement.

In this revised process, the IESO Board agreed to use the TRCA balance above a set threshold of \$10 million (now \$20 million) to allow an increase in the volume of short-term TRs sold via the following stabilization algorithm<sup>1</sup>:

---

<sup>1</sup> Market Manual 4, part 4.4, section 1.3.2, p5:  
[http://www.ieso.ca/imoweb/pubs/marketOps/mo\\_TransmissionRights.pdf](http://www.ieso.ca/imoweb/pubs/marketOps/mo_TransmissionRights.pdf)

TRCA Account Balance	Net TR Revenues for Preceding Three Months	Impact on Monthly TRs for Multi-Circuit Paths and Single-Circuit Paths PQP33C and PQD5A
>Threshold	>0	Increment quantity by 4%
>Threshold	<0	No change
<Threshold	>0	No change
<Threshold	<0	Decrement quantity by 4%

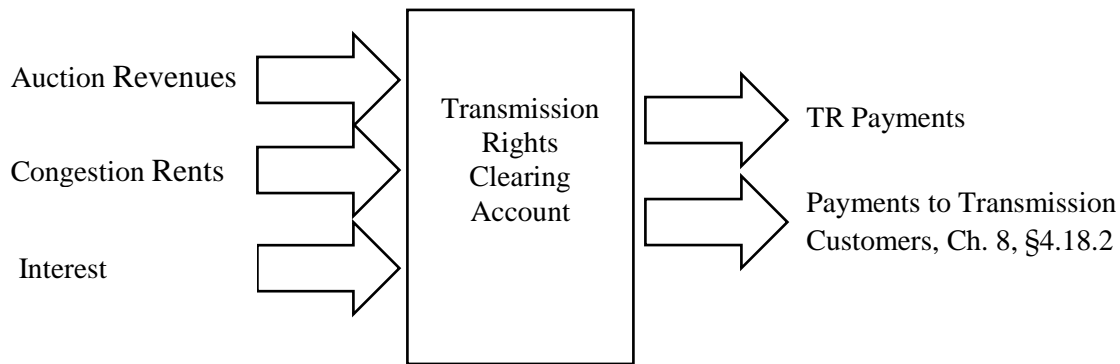
Net TR Revenues = auction revenues + congestion rents + interest – TR payouts

The stabilization process modified the number of short-term rights for sale on multi-circuit paths and single-circuit paths PQP33C and PQD5A such that the maximum number of TRs offered on each path at a short-term auction is limited to the lower of the available transfer capability or the TR Base Quantity plus total MW increments due to stabilization.

Twelve of the seventeen paths for sale in the TR auction are subject to a potential increase/decrease in TRs each quarter. Between April 2004 (when the confidence level changes took effect) and December 2012, the amount of rights sold on certain paths increased 25 times. These paths currently have, or soon will have, the potential for TRs to be sold at 100% of the total transfer capability reduced by the applicable reliability margin.

**Market Operation and the Transmission Rights Clearing Account**

Payment streams into and out of the TRCA are shown below:



Congestion rents occur when there is a difference between the real-time Ontario market clearing price (MCP) and the applicable external zonal price. During import congestion, the importer is paid a lower price for the energy than is collected from consumers (exporters, Ontario demand). During export congestion, the exporter is charged a higher price for the energy than is paid to suppliers. The difference is referred to as congestion rent and is credited to the TRCA. Under the current confidence level design, TR payments are funded by the congestion rents plus TR auction revenues and account interest.

Three scenarios occur in the TR market:

1. TR Payments > Congestion Rents

If the TR payouts are greater than the congestion rents, the deficiency is made up from the TRCA, essentially using auction revenues and interest to offset the payments to TR holders. This is currently the most frequent monthly result and occurs when the MW flowing during congested periods are less than the MWs of rights sold. This could occur due to limitations on the intertie capability as a result of unscheduled loop flow, planned or unplanned outages. In addition, the amount of MWs flowing on the intertie could be reduced as a result of operating reserve being scheduled on the intertie, internal congestion or failed transactions. If a significant number of these conditions develop a rapid decrease in the TRCA can occur because of the requirement to maintain the TR payouts. If this rapid decrease were to occur, and the amount payable to the TR holders exceeds all funds available in the TRCA, the shortfall is temporarily funded by consumers. The current stabilization design was intended to balance the TRCA at the reserve threshold, such that both congestion rents and auction revenues are available to fund the TR payments.

2. TR Payments < Congestion Rents

Under this scenario, not all of the congestion rents are used to offset the payments to TR holders. The surplus congestion rent is credited to the TRCA and the balance of the TRCA increases. This occurs when the MWs flowing are greater than the MWs of rights sold. This scenario occurred often prior to the implementation of the confidence level changes. This scenario would be common in months where, for example, the actual transmission capability on the intertie is greater than the planned capability at the time of determining the number of TRs to be sold at auction. It could also be the result of a more conservative confidence level.

3. TR Payments = Congestion Rents

Under this scenario, the MWs flowing equal the MWs sold. The Market Surveillance Panel has noted that this is the ideal scenario under which auction revenues are available for disbursement to transmission customers.

### **Transmission Rights Clearing Account Activity**

From market open to April 2004, when the confidence level changes were implemented, monthly congestion rents collected were in excess of the TR payouts in 15 of the 23 months; however, shortfalls did occur, with the net total of TR payouts exceeding congestion rent collected during this period by \$5 million. Since April 2004 the monthly TR Payouts have been, for the most part, greater than congestion rents. Congestion rent shortfalls have resulted in \$163 million in auction revenues and interest being used to fund the TR payouts since April 2004. An outcome where TR payouts exceed congestion rent collected is consistent with what the IESO would have expected following the April 2004 changes to the confidence level.

Despite a policy of stabilization the account balance has continued to increase. The accumulation of auction revenues, congestion rents and interest has continued to exceed TR payouts on a consistent basis. In December 2006, the TRCA balance available for disbursement was approximately \$77 million and was continuing to grow. At this time the IESO Board approved the disbursement of \$57 million to transmission service customers (loads). In March 2007 the account reached \$90.4 million and in April of 2007 the first installment of the disbursement was made. The remaining disbursement was made on a monthly basis reducing the account by January 2008 to \$42.6 million net of monthly surpluses accumulated over that time period. At the time of the disbursement the reserve threshold was increased to \$20 million. Since then the account has increased to \$72.7 million as of December 31, 2012. In February 2013 a disbursement of \$42 million was approved, to be paid in 12 equal monthly installments beginning in April 2013.

### **IESO Board Authorities**

Under the market rules the IESO Board has authority to:

1. Disburse funds from the TRCA to loads when a surplus accrues (Ch. 8 § 4.18.2). Funds are disbursed to market participants based on their previous month's AQEW, the quantity of energy withdrawn at all revenue wholesale meters and intertie metering points (Ch. 9, § 4.7).
2. Establish a reserve threshold for the TRCA (Ch. 8, § 4.18.3).
3. Establish a confidence level to reflect the degree to which the congestion rents collected by the IESO in a given period will be sufficient to cover the IESO's payment obligations to TR holders (Ch. 8, § 4.7.1).

### **Going Forward – Review of the Confidence Level and Associated Stabilization Design**

The review of the confidence level and its associated stabilization design is Phase 1 in the comprehensive review of the TR market. The scope of this phase is limited to an assessment of the existing confidence level design of the TR market and the threshold of the TRCA, in accordance with recommendation 3-2 of the January 2013 MSP report and recommendation 3-5 of the August 2010 MSP report:

Recommendation 3-2, MSP Report for the Period November 2011 – April 2012, and  
Recommendation 3-5, MSP Report for the Period November 2009 – April 2010

*The IESO should limit the number of transmission rights auctioned to a level where congestion rent collected is approximately sufficient to cover the payouts to transmission right holders.*

All other aspects of the transmission rights market will be reviewed under Phase 2.

Any recommendations or changes related to Phase 1 may be later impacted by the comprehensive review in Phase 2.

### Confidence Level

The IESO will investigate the confidence level design implemented in 2004 and will analyze historical data of the TR market to determine if this method has achieved the perceived benefits of:

- increased trade (energy)
  - specifically increased import competition
- increased participation/ownership in the transmission rights market

The review will also look at whether the participants that own TRs are trading on the interties on which they own TRs, to provide an indication if TR ownership has or could have an impact on energy trade. In addition, the review will include feedback from participants to understand if there were other factors which did not allow increased participation as more TRs became available.

Based on analysis and feedback, the IESO will consider other options – one of which will be a modification to the design such that the congestion rents collected are approximately equal to the payouts to transmission rights holders, consistent with recent MSP recommendations.

At the outcome of the review, the IESO will make a recommendation to the IESO Board in regards to the confidence level and associated stabilization design algorithm. Any changes made to the design as a result of this recommendation may be impacted by the comprehensive review in Phase 2.

### Threshold

The current threshold of the TRCA is \$20 million. The IESO will investigate whether this threshold is still appropriate based on any proposed changes to the confidence level, and will make a recommendation to the IESO Board.

### **Stakeholder Feedback Requested**

The IESO would appreciate Stakeholder feedback regarding the current confidence level and its associated stabilization algorithm design. Feedback on the following questions would assist in developing the analysis into whether the current design is achieving the desired benefits and/or will be used in the comprehensive review:

- Are there barriers for participation in the TR market that may have prevented you from purchasing the additional TRs made available through stabilization?
- Does the ownership of TRs affect trading decisions, and why or why not?
- If the quantity of auctioned TRs is reduced as a result of Phase 1 of this review, what effect would that have on trading decisions?

Feedback can be provided to [stakeholder.engagement@ieso.ca](mailto:stakeholder.engagement@ieso.ca) by May 3, 2013.