

ISSUE 20: TREATMENT OF INTERTIE TRANSACTIONS IN A CONGESTION PRICING REGIME

Date Raised

Late 2003.

Description

In the current market design with uniform pricing, imports and exports scheduled by the final pre-dispatch sequence are fixed for the real-time dispatch sequences. This is because of co-ordination agreements between neighbouring control areas that require intertie schedules to be set hourly for the entire hour. This fixing of the intertie schedules does not allow the real-time nodal prices to be reflective of the offers and bids at the intertie nodes. This situation exists in the current uniform pricing regime (it affects the shadow prices at the interties) but because the intertie nodal prices are not used for settlement, it is not a serious problem. In a nodal pricing regime, these intertie node or zone prices would ideally be used for settlement and therefore this issue would have to be addressed.

Background

The fact that the interties are fixed for a given hour introduces a pricing “disconnect” that can distort the real-time pricing consistency between internal and external resources. This is an issue in the current market design and addressing this will be done via Issue 7 – Imports and Exports Setting Price.

The adoption of nodal pricing would require the resolution of other issues with respect to intertie transaction treatment. The current design has intertie zones that can have a different price than the Ontario uniform price based on intertie congestion. This price difference between the Ontario uniform price and the intertie zone price is called the Intertie Congestion Price. It is determined in the final pre-dispatch sequence and fixed for the entire dispatch hour¹. This difference is then applied to the real-time Ontario uniform price (market clearing price, MCP) for each 5-minute interval in the dispatch hour. In a nodal pricing scheme, there is no uniform price to which final pre-dispatch price differences can be applied in determining the price at the intertie nodes. Ideally, intertie bids and offers would remain in the calculations and the intertie node price would be calculated every interval the same as all other nodes, but that would also result in changes to the intertie schedule every interval, which is not possible. If we assume that the current intertie scheduling process with our neighbours remains the same, then the issue is reduced to what price to publish

¹ It should be noted that the ICP may not be constant for the hour if the prices are administered or there has been a complete interconnection outage.

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(and use for settlement) for the intertie nodes or zones. Determining a meaningful real-time nodal intertie price may involve some type of formulaic equivalent, similar to what is done today for the intertie zone prices.

This would also create a problem for the Financial Transmission Rights (FTRs) at the interties. FTR payments based on a real-time nodal intertie price would not accurately provide the congestion hedge required since the real-time price may not reflect the fixed intertie schedule. FTR payments based on results from the Day Ahead Market (DAM) or pre-dispatch (as now) instead of real-time may be a possible resolution to this.

Why a Pricing Issue

The current formulation of the real-time constrained sequence yields intertie node shadow prices that do not properly reflect the intertie bids/offers nor congestion and hence are inefficient (and could require a structure involving various side payments). Thus if a decision to adopt nodal pricing is made the determination of the node or zone prices at the interties will need to be examined.

Impacts of Issue

Market Impact

One of the fundamental aspects of nodal pricing is the inherent price transparency that it provides. A participant can see the price at their location and know that if their offer/bid was “in the money,” then they were scheduled or vice versa. However, intertie schedules must be set ahead of time and fixed for an hour. Therefore, this transparency is not possible, since the real-time price can float during the hour and a particular intertie bid/offer can be “in” or “out” of the money in any given interval, yet the schedule remains unchanged.

Participant Impact

TBD

IMO Processes and Procedures Impact

This issue only requires a solution when (if) a nodal pricing scheme is introduced for the Ontario market. The impacts related to solutions for this issue would be addressed with the larger issue of implementing a nodal pricing scheme, however it is likely that significant changes would be required to the dispatch scheduling optimiser to address this issue.

Related Issues

- 001: Pre-Dispatch Price Sensitivity
- 007: Imports and Exports Setting Price
- 018: Pricing and Allocating Line Losses
- 022: Pricing Physical Constraints

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Options Considered

[To be developed]

Selected References