

ISSUE 7: IMPORTS & EXPORTS SETTING PRICE

Date Raised

Noted early in the operation of the IMO-administered market and raised again by the Day-Ahead Market (DAM) Working Group in early 2004.

Description

~~Neither imports nor exports can set the price in the real-time market (RTM), because they cannot be dispatched on a 5-minute basis. The market clearing for energy and operating reserve in the IMO-administered market was established to be the marginal resource cost based on offers and bids. As imports and exports cannot be dispatched on a 5-minute basis and therefore cannot be the marginal resource, neither can set the market clearing price (MCP) in the real-time market. However, imports (and exports) can be scheduled/dispatched within the timeframe of the pre-dispatch sequence and therefore can set the price-in-pre-dispatch calculations price, which are used to produce the interchange schedules. This discrepancy in price determination raises concern over whether the prices are being calculated appropriately and fairly.~~

~~Since the Day Ahead Market (DAM) operates in the same time frame and same time scale as the pre-dispatch, imports will be able to set the price in the current design of the DAM. This suggests that there may be potential disparity issues between the DAM and RTM prices, related to the impact of imports (or exports) on the Market Clearing Price. This disparity issue is related to the one that currently exists between the pre-dispatch and real-time prices.~~

Background

The current real-time Ontario energy market has been designed to allow market participants to import power from and export power to other jurisdictions. Since the source of the imports and destination of the exports are outside the Ontario control area and involve the use of interconnected facilities, coordination of operation with neighbouring control areas is required. Reliability standards must be adhered to and agreed to scheduling adjacent market protocols with neighbouring jurisdictions followed. Such coordination of operation cannot currently be achieved in real-time. This results in a complex, time-consuming coordination process. Consequently, Consistent with current interchange scheduling protocol timelines, imports and exports are scheduled for one 1-hour periods, during the hour-ahead pre-dispatch run of the scheduling algorithm. Imports offered at prices below the hour-ahead pre-dispatch price and exports bid at prices above the hour-ahead pre-dispatch price are all scheduled for real-time dispatch.

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In the real-time scheduling sequence, the intertie bid and offer schedules in the hour-ahead pre-dispatch are treated as fixed for the entire delivery hour and do not adjust with changes in the 5-minute MCP. This is accomplished by placing net import quantities (scheduled imports minus scheduled exports) at the bottom of the offer curve at a very low price. This ensures that the import and export quantities are included in the determination of real-time dispatch and that their associated bids and offers are unable to set the MCP.

Given that the import schedule is determined an hour in advance and fixed for the hour, imports (and exports) are not dispatchable on a five-minute basis. Thus, import offers and export bids are not allowed to set the As a result, the 5-minute Market Clearing Price (MCP), which MCP is determined solely by the supply-demand balance between dispatchable resources that can physically change their input/output levels within the 5-minute time frame or resolution of the MCP calculation or determination.

The price used to settle imports and exports in real-time is the sum of the real-time MCP and the Intertie Congestion Price (ICP) for the specific intertie zone involved, which is determined during the hour-ahead pre-dispatch run. Importers are also provided with further price risk mitigation through the IMO's Intertie Offer Guarantee (IOG) payments. The IOG ensures that, over the course of the hour, an importer will receive at least the average price of their offer; hence, they will not suffer from lost operating profit. Examining the effects that the IOG payments may have on MCP could provide further insight into this issue.

Furthermore, the Day-Ahead Market design proposes to set the price of electricity one day ahead of real-time, on an hourly basis. ~~This implies that imports (and exports) would be able to offer into this hourly market unexceptionally,~~ and thus could set the day-ahead price of electricity. The real-time market, however, will remain in effect alongside this Day Ahead Market, and it will continue to be dispatched on 5-minute intervals. Hence, interties will remain unable to set the real-time price of electricity. This disparity in price-determination between the two markets is also an important aspect of this issue.

Why a Pricing Issue

The disparate treatment of import offers and export bids in pre-dispatch as compared to the day-ahead and real-time markets at times yields significant price differences. This raises the question of whether the differing prices and their consequences are fair and accurate for all Market Participants. The inability of intertie transactions to set the price in real-time requires examination.

This topic also relates to how import offers are included in the calculation of pre-dispatch prices, but excluded from the calculation of real-time prices in the

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~~current market. Accordingly, the difference between the Pre-dispatch price and HOEP is an interrelated issue. Attention must also be paid to whether this price difference may create gaming opportunities in the virtual bid/offer market that is proposed for the DAM.~~

Impacts of Issue

Market Impact

The differing treatment of import offers and export bids in the pre-dispatch compared to real-time price determination process gives rise to questions of fairness in the consequent application of these prices and associated adjustments and/or guarantees. In addition, the divergent price-determination processes call into question the efficiency and accuracy of the pricing signals in the market.

~~Having two different pricing structures in the DAM and Real-time market specifically impacts the guiding principle of fairness in the price determination process. In addition, the divergent prices call into question the efficiency and accuracy of the pricing signals in the market.~~

Participant Impact

[To be developed]

~~Market Participants may feel inclined to strategically participate in either market (DAM vs Real-time), if they feel that one provides a pricing advantage over the other.~~

IMO Processes and Procedures Impact

[To be developed]

~~In order to treat import offers equally in the DA and RT markets, it would require changes to the design of the DAM or changes to the Market Rules and software in the current Real-time market.~~

Related Issues

- 008: Multi-Part Bids/Offers
- 012: Under-commitment of Available Generation
- 013: Impact of Out of Market Resources on the Market
- 014: Hour(s)-Ahead Price Signal Uncertainty
- 024: Reducing Frequency of Failed Intertie Transactions
- 030: Forecast of Real-Time Price

Options Considered

[To be developed]

Selected References

Day Ahead Market Strawman Release 4.0 – Design Issues Log #9

http://www.theimo.com/imoweb/pubs/consult/mep/DAM_WG_Strawman-4_0.pdf

Market Surveillance Panel Monitoring Report on the IMO-Administered Electricity Markets for May to August 2002

http://www.theimo.com/imoweb/pubs/marketSurv/ms_mspReport_2002oct07.pdf

Quick Take: Intertie Offer Guarantee – September 22, 2002

http://www.theimo.com/imoweb/pubs/training/QT1_IOG_2002sep10.pdf

Marketplace Training: Introduction to Ontario's Physical Markets

<http://www.theimo.com/imoweb/pubs/training/IntroOntarioPhysicalMarkets.pdf>