

ISSUE 1: PRE-DISPATCH PRICE UNCERTAINTY

Date Raised

Noted in the May 2003 Pricing Team Report.

Description

For many market participants, accurately predicting pre-dispatch prices is a key component in both making business decisions and managing their participation in the market. In particular, importers and exporters who offer or bid into the Ontario market are scheduled in real-time according to the hour-ahead pre-dispatch price. As well, participants in HADL and TDRP monitor the 3-hour ahead pre-dispatch prices to help determine their price-responsive actions and settlements in the market. Such participants would benefit from an understanding of how sensitive the published pre-dispatch prices are to potential changes in demand. An indicator or measure of pre-dispatch price sensitivity may serve as a valuable tool.

Background

Pre-dispatch provides advance information and projections necessary to plan the physical operation of the electricity system and to allow participants to plan their future actions in the market. The pre-dispatch sequence is run every hour to derive schedules and prices for future hour periods. Results cover a range from 36 to 12 hours in the future, depending on the time of day that the sequence is initiated. However, unrestricted revisions to bids and offers in each hour are allowed up to 2 hours prior to the dispatch hour. Such revisions can result in significant changes in the pre-dispatch schedules and prices.

A number of market participants rely on the pre-dispatch prices published by the IMO to determine their operations and settlements. For example, in an effort to encourage market participants to become more price-responsive, the Transitional Demand Response Program (TDRP) will provide compensation to participants who choose to reduce their demand in real-time when the 3-hour ahead pre-dispatch price meets or exceeds \$120.

Similarly, loads who participate in the Hour Ahead Dispatchable Load (HADL) program submit offers to the IMO indicating the amount of energy they will reduce in real-time if the 3-hour ahead pre-dispatch energy price exceeds a certain level. If the 3-hour ahead pre-dispatch price is higher than the load's offer price, the IMO will send dispatch instructions to the load to reduce its consumption. If the real-time price turns out to be lower than the offer price, the load will be compensated via the HADL Offer Guarantee.

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For importers and exporters, their dispatch schedules in real-time are determined along with the hour-ahead pre-dispatch price. In addition, the price used to settle imports and exports in real-time is the sum of the real-time Ontario Market Clearing Price (MCP) and the Intertie Congestion Price (ICP) which is determined during the hour-ahead pre-dispatch sequence. Importers are also provided with a price guarantee 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, even if the real-time MCP is lower than the final (hour-ahead) pre-dispatch price. Thus, expectations of the pre-dispatch prices should be a critical component in finalizing their import offers.

The pre-dispatch prices calculated each hour are currently published on the IMO web site, and available for viewing on the Market Prices Graph (<http://www.theimo.com/imoweb/marketdata/marketToday.asp>). Given that a number of market participants monitor the pre-dispatch prices quite intently, many feel that it would be beneficial for the IMO to provide them with some way of gauging pre-dispatch price certainty. By understanding more about the volatility of the prices published in pre-dispatch, participants should be able to make better-informed decisions in their operations planning and participation in the market.

In order to address the issue of price sensitivity, the IMO had suggested providing market participants with pre-dispatch price bands. This means that a forecast would be made for what the price would be if the demand had been a given percentage higher and lower than the actual forecast. The result is a forecast bandwidth around the pre-dispatch price that shows the sensitivity of the price to demand changes. Market participants could use this bandwidth to predict when price volatility would be high and thus when small changes in demand could have a significant price impact. Currently, the pre-dispatch sequence of the Dispatch Scheduling & Optimization (DSO) algorithm does calculate prices for the forecast demand $\pm 2\%$, which represents the expected tolerance of the load forecast error. However, the results are not currently stored in any databases and consequently are not published on the IMO web site. Another option for calculating the bandwidths would be to hold the imports and exports constant at the level calculated by the pre-dispatch run with the expected demand when doing the high and low demand runs. This option would require changes to the DSO software.

It was also suggested by the Market Pricing Working Group (MPWG) that resolving the hour-ahead pre-dispatch prices on a 5-minute basis rather than on an hourly basis may result in greater convergence of pre-dispatch and real-time prices. In addition, the 5-minute resolution of pre-dispatch may provide further insight to this price sensitivity issue. (Further discussion on the convergence of

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pre-dispatch and real-time prices can be found in Issue 30: Forecast of Real-Time Price.)

Why a Pricing Issue

Currently, the IMO publishes no information on pre-dispatch price sensitivity. But given the role that pre-dispatch prices play in the scheduling and price determination of intertie transactions as well as in the TDRP and HADL programs, the potential benefits of a pre-dispatch price sensitivity measure are evident. Providing participants with a means to gage pre-dispatch price volatility should improve the extent and effectiveness of their participation in the IMO-administrated market.

Impacts of Issue

Market Impact The potential introduction of pre-dispatch price sensitivity indicators would impact the principles of efficiency, reliability and transparency for price-determination within the IMO-administered markets. Sensitivity data would provide more accurate price signals which both suppliers and consumers can react to when making short-term decisions, thus making the market more efficient. In addition, market reliability could be improved by giving stakeholders the information to reduce unanticipated and/or unnecessary changes in production and consumption that stem from a reaction to pre-dispatch prices that may later on prove to be extremely volatile. Market participants would have access to more market information that might enable them to assess the published prices more accurately, thereby making the market more transparent.

Participant Impact

[To be developed]

IMO Processes and Procedures Impact With respect to the pre-dispatch price bandwidths, no changes to Market Rules would be required. Tool changes and more IT work with significant expense would be required to make the price bandwidths currently calculated by the DSO available to market participants.

The potential resolution of pre-dispatch prices on a 5-minute basis would require Market Rules changes, tool changes, as well as additional IT work with significant expense. In addition, the scheduling and pricing of intertie transactions would need to be re-examined.

Related Issues

- 009: Use of Peak Demand Load Forecast in Pre-dispatch
- 012: Under-commitment of Available Generation
- 013: Impact of Out of Market Resources on the Market
- 014: Hour(s)-Ahead Price Signal Uncertainty

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- 015: Restriction on Changes to Dispatch Data between 4 and 2 hours ahead of Dispatch Hour
- 030: Forecast of Real-Time Price

Options Considered

[To be developed]

Selected References

Market Pricing Issues Report - May 28, 2004

http://www.theimo.com/imoweb/pubs/consult/mktOps/mo_paper_PricingIssues_20030528.pdf

Quick Take: Transitional Demand Response Program - August 5, 2004

http://www.theimo.com/imoweb/pubs/training/QT16_TDRP.pdf

Quick Take: Intertie Offer Guarantee - September 22, 2002

http://www.theimo.com/imoweb/pubs/training/QT1_I OG_2002sep10.pdf