Administrative Pricing

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Introduction

This Quick Take explains how and when the IESO administers prices.

Background

The real-time algorithm calculates energy and operating reserve market prices, which are normally published within five minutes of each 5-minute interval. When market pricing mechanisms are not functioning normally, the IESO establishes 'administrative prices' for the affected intervals. Similarly, administrative prices also need to be established for Day-Ahead Market (DAM) results under certain circumstances described herein.

Administered prices should, as closely as possible, reflect prices that would otherwise have been produced by the markets.

There are three (3) reasons, also referred to as triggers, for administering real-time prices:

1. **Tool Issues** – The IESO is unable to publish prices or publishes incorrect prices due to a forced or planned outage to the hardware, software or communications systems that support the dispatch algorithm.
2. **Incorrect Prices** - The published prices are incorrect due to incorrect inputs to the market algorithm or the formation of an electrical island in real-time.
3. **Market suspension** – No prices are published.

Note: DAM prices will be administered when published prices are incorrect (Reason #2) *and* the input error has solely impacted prices and not schedules.

Affected Prices

Administered prices become the energy and operating reserve prices used for all purposes under the market rules, i.e., any settlement amount based on an energy or operating reserve price will be based on the administered price. When prices are administered for any real-time interval or day-ahead hour, all Locational Marginal Prices (LMP) for both Energy (ENG) and Operating Reserve (OR) can be changed.

Administrative Prices When the Market Is Not Suspended (Reasons #1 and #2)

The guiding principle under these situations is that the administered prices should, as far as possible, reflect prices that would otherwise have been produced by the real-time markets, if not for the event causing market prices to be administered.

The market rules allow for:

1. Recalculating real-time or DAM prices using software that replicates the applicable calculation engine.
2. Using the DAM prices that correspond to the same hour and dispatch day for which the IESO is administering real-time prices.
3. Using the market prices for an electrically similar delivery point or intertie metering point in the same dispatch interval where the market price has not been administered.
4. Using the prices from the most recent real-time 5-minute interval where the prices were 'good', that is, the prices were not administered (to a maximum of 12 dispatch intervals).
5. Using the prices from the next real-time 5-minute interval where the prices were 'good', that is, the prices were not administered (to a maximum of 12 dispatch intervals).
6. Using hourly average prices that correspond to the same hours for which the IESO is administering real-time prices. The IESO determines the hourly average price by averaging the prices from the corresponding hours from the four most recent business days (or non-business days, if prices are being administered for a non-business day).[1]

The IESO's decision on the appropriate administrative pricing method or combination of methods to apply is based on their judgment of which prices would best meet the guiding principle, that is, which prices would best reflect the price that would otherwise have been produced by the market.

[1] Note that hours that include any interval for which administrative prices were established are excluded.

Price Administration Methods

Market Not Suspended – Example One: Using Re-calculated Prices (Real-time Prices)

Assume that an incorrect input resulted in incorrect real-time prices for intervals 3 and 4 of HE7 for a given trade date before it was corrected by Control Room Operators.

- The IESO will re-calculate the market results for the 2 intervals using an offline version of the real-time calculation engine with inputs set to the correct values
- The recalculated prices are then applied as the administered energy and OR LMPs for the intervals

Market Not Suspended – Example Two: Using Re-calculated Prices (DAM Prices)

Assume that an incorrect input resulted in incorrect DAM prices for hours 5-22 for a given trade date and was not identified until after results were published.

- The IESO will re-calculate the market results for the affected day using an offline version of the DAM calculation engine with inputs set to the correct values.
- The IESO will confirm that energy and OR schedules were not impacted by the input error.[2]
- The recalculated prices are then applied as the administered energy and OR LMPs for the trade date. Note that DAM prices may be affected for hours outside of the period when the incorrect input applied since the calculation engine optimizes over the 24 hours of the day.

Market Not Suspended – Example Three: Using DAM Prices

Assume that a forced outage to the dispatch algorithm resulted in a failure to produce prices for all Intervals of Hour 8 for a given trade date:

- Assessing the market conditions at the time of Intervals the failure, the IESO determines that the DAM energy and operating reserve prices in Hour 8 most closely reflect the prices that would otherwise have been produced by the market.
- The IESO then administers the energy and OR LMPs for all intervals of the hour by replacing them with the prices for the corresponding hour as determined by the DAM.

Market Not Suspended – Example Four: Using the Last Good Price

Assume that a forced outage to the dispatch algorithm resulted in a failure to produce prices for Intervals 6-10 of a given hour:

- The IESO determines that the last good interval was Interval 5 of Hour 8, and the next good interval was Interval 11 of Hour 8.

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[2] If both DAM schedules and prices are significantly impacted by an input error, a Dispatch Scheduling Error (DSE) may be declared. Under DSEs market participants are notified of the error. The IESO maintains published results as they are but compensates affected market participants for financial damages incurred as a result of the error.

- Assessing the market conditions at the time of Intervals 6-10, the IESO determines that the energy and operating reserve prices in Interval 5 of Hour 8 most closely reflect the prices that would otherwise have been produced by the market in Intervals 6-10.
- The IESO then administers the prices for Intervals 6-10 by replacing them with the prices from Interval 5.

Market Not Suspended – Example Five: Using the Next Good Price

Assume that a forced outage to the dispatch algorithm resulted in a failure to produce prices for Intervals 6-10 of a given hour:

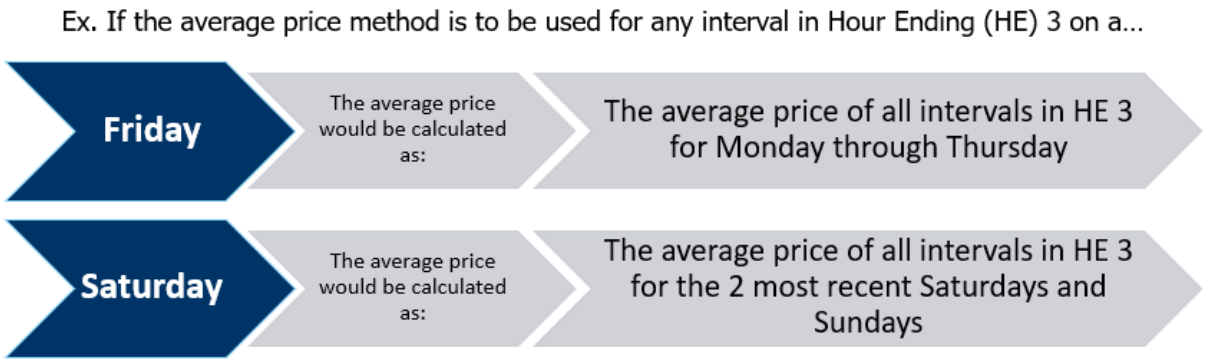
- The IESO determines that the last good interval was for Interval 5 of Hour 8, and the next good interval was for Interval 11 of Hour 8.
- Assessing the market conditions at the time of Intervals 6-10, The IESO determines that the energy and operating reserve prices in Interval 11 of Hour 8 most closely reflect the prices that would otherwise have been produced by the market in intervals 6-10.
- The IESO then administers the prices for Intervals 6-10 by replacing them with the prices from Interval 11.

Market Not Suspended – Example Six: Using Average Prices

Under the Apply Average Prices method, the IESO applies hourly average prices from the corresponding hours of the four most recent business days or non-business days depending on the trade date for which prices are being administered.

For each administered interval, the energy and OR LMPs within Ontario and at the interties are set equal to the average of the published market prices for the corresponding hour from the four most recent business days (or non-business days if the prices are being administered for a non- business day), excluding any hour(s) where prices were administered

The following are examples to help illustrate this method:



Market Not Suspended – Example Seven: Using Prices from an Electrically Similar Delivery Point

The Northeast Power Coordinating Council (NPCC) glossary of terms defines an electrical island as: A portion of a power system or several power systems that is electrically separated from the interconnection due to the disconnection of transmission system elements. This portion of the grid remains energized, as generation within operates to maintain power to connected loads at acceptable voltage and frequency.

Every resource pricing location in Ontario will have a list of electrically similar (that is having similar loss and congestion LMP components) substitutes defined for it in order of most similar to least similar.

These definitions will be determined based on all equipment in-service conditions and will not be dynamically updated.

When a delivery point is disconnected from the system, including when it is operating within an electrical island, an LMP will not be calculated for it. Instead, another LMP from within the same facility or one of the pre-defined substitute pricing locations will automatically be applied by the calculation engine in its place.

The following example illustrates a potential administrative pricing outcome following the formation of an electrical island in real-time.

Assume a large island forms in real-time which consists of multiple generation resources and loads and operates for all intervals of Hours 9, 10, and 11 on a given trade date.

- Based on the specific system conditions at the time of the island, the IESO determines that the energy and operating reserve prices substituted for delivery points within the island were less appropriate than an alternative substitute
- The IESO then administers the prices for the affected delivery points for all intervals of Hours 9, 10, and 11 by replacing them with the LMPs from the more appropriate substitute delivery point.

Administrative Prices When the Market is Suspended (Reason #3)

Market operations may be suspended for reasons other than a failure in the IESO software that generates market prices. If this occurs, and if operations of the IESO-controlled grid are based to some extent on market-based information and signals, the IESO will use, to the extent practical, the prices calculated by our software as the administrative prices.

If operations of the IESO-controlled grid are being conducted without regard to the market:

- For each hour that the IESO-administered markets are suspended the IESO determines the average of the published market prices for the corresponding hour from the four most recent business days (or non-business days if the prices are being administered for a non-business day), excluding any hour(s) where prices were administered
    - The energy and OR LMPs within Ontario and at the interties are set equal to the average hourly LMPs for the corresponding hour(s) on the four most recent business (or non-business) days

Timelines

The IESO has only four business days after the dispatch day to decide on the need for administrative prices and to implement them. Beyond this window, the published prices become the prices used for settlement.

Communications

When the IESO administers prices they send notice via a message on the 'Administrative Pricing' web page:

Administrative Pricing Notices

Interested parties can sign up for an RSS feed on this page:

Administrative Pricing RSS Feed

When prices and schedules have been administered following such a review, the IESO:

- Posts a notice on the 'Administrative Pricing' web page, and
- Re-publishes the real-time (dispatch) reports.

Prices that have been administered are flagged as 'ADMIN' in the applicable reports.

Summary

When published prices and/or schedules are incorrect or missing, the IESO has four business days to assess the need for administrative prices and to implement them.

Administrative prices are the replacement of incorrect prices.

Once prices are administered, the revised prices are used for all settlement purposes.

Additional Information

For more information on how prices are calculated and how the transmission rights market operates, please refer to the Introduction to Ontario's Physical Markets, Interjurisdictional Energy Trading, and Transmission Rights workbooks on the IESO Marketplace Training webpage.

See the Rules and Manuals web page for:

- Market Manual 4.3 Operation of the Real-Time Market
- Market Manual 4.5 Market Suspension and Resumption
- Market Manual 5.5 IESO-Administered Markets Settlement Amounts
- Market Operations Manual: Guidelines for Additional Compensation During Administrative Pricing
- Additional Compensation During Administrative Pricing (Form 1398)
- Administrative Pricing Event Correction (Form 1549) (Used for an event that does not exceed 48 intervals)

For additional information, please contact us at:

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