Quick Takes: Administrative Pricing

Issue 4 – Revised April 10, 2012

Introduction

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

Background

The dispatch 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, we establish 'administrative prices' for the affected intervals.

There are three reasons for administering prices:

1. We are unable to publish prices due to a forced or planned outage to the hardware, software or communications systems that support the dispatch algorithm
2. The published prices are incorrect due to incorrect inputs to the dispatch algorithm
3. Market suspension

Administrative prices are used for settlement purposes, and, therefore, affect all market participants. In the case of dispatchable participants, we may also modify market schedules for the period that administrative prices are in effect.

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 an interval, all 43 real-time prices are changed:

- Ontario (4 prices) – energy and operating reserve (10-minute synchronized, 10-minute non-synchronized and 30-minute)

- Intertie zones (39 prices) – energy and operating reserve (10-minute non-synchronized and 30-minute) for each of the thirteen intertie zones

Any change to the 5-minute Ontario price also changes the Hourly Ontario Energy Price (HOEP), which is the arithmetic average of the twelve 5-minute Ontario energy prices in the hour. Similarly, payments to transmission rights holders, which are based on the difference between intertie zone prices and the Ontario price, may be impacted.

Replacing Prices & Schedules

We do not recalculate prices or schedules. Administrative prices and schedules are a replacement of the incorrect published prices and schedules. The method we use to determine administrative prices and schedules depends on the number of sequential intervals with incorrect prices, and on whether or not the market was suspended at that time.

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

(We need to administer prices because of a forced or planned outage, incorrect inputs to the dispatch algorithm, or because we have implemented an emergency control action that resulted in counter-intuitive prices.)

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, but for the event causing market prices to be administered.

The market rules allow for:

1. Using the price and schedule from the most recent 5-minute interval where the price and schedule were 'good', that is, the price was not administered (to a maximum of 24 dispatch intervals).
2. Using the price and schedule from the next 5-minute interval where the price and schedule were 'good', that is, the price was not administered (to a maximum of 24 dispatch intervals).
3. A combination of the last good interval and the next good interval, provided that neither the next good interval nor the last good interval is used for more than 24 dispatch intervals (the combined total can be up to 48 dispatch intervals).
4. If the time extends beyond 48 dispatch intervals (i.e., more than four hours), we use an hourly average price. We determine 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]

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

[1] Beyond 48 intervals, congestion management settlement credit (CMSC) payments will be cancelled by setting the *market schedule* and the *constrained (dispatch) schedule* equal to *0* for internal resources (i.e., ms=cs=0) and the market schedule equal to the constrained schedule for boundary entities (i.e., ms=cs). (For additional information on CMSC calculations, please refer to the *Introduction to Ontario's Physical Markets*, available via the Marketplace Training web pages.)

Our decision to copy forward, copy backward or use a combination of the two is based on our judgment of which price would best meet the guiding principle, that is, which price would best reflect the price that would otherwise have been produced by the market.

Market Not Suspended – Example One: 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 Hour 8:

- We determine that the last good interval was Interval 5 of Hour 8, and the next good interval was Interval 11 of Hour 8.
- Assessing the market conditions at the time of Intervals 6-10, we determine 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.
- We then administer the prices and market schedules for Intervals 6-10 by replacing them with the prices and market schedules from Interval 5.

The table below shows only the energy and 30-minute operating reserve market clearing prices (MCPs) for Ontario and the New York intertie zone, but the other 39 prices would be similarly replaced (see Page 8 for an example of market schedule replacement):

Interval	1	2	3	4	5	6	7	8	9	10	11	12
Ont Energy MCP	$28	$30	$30	$38	$42	**$42**	**$42**	**$42**	**$42**	**$42**	$55	$55
Ont 30-minute OR MCP	$3	$3	$3	$3	$3	**$3**	**$3**	**$3**	**$3**	**$3**	$3.2	$3.2
NY Energy MCP	$38	$40	$40	$48	$52	**$52**	**$52**	**$52**	**$52**	**$52**	$65	$65
NY 30-minute OR MCP	$3	$3	$3	$3	$3	**$3**	**$3**	**$3**	**$3**	**$3**	$3.2	$3.2

Market Not Suspended – Example Two: 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 Hour 8:

- We determine 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, we determine 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.
- We then administer the prices and market schedules for Intervals 6-10 by replacing them with the prices and market schedules from Interval 11.

The table below shows only the energy and 30-minute operating reserve market clearing prices (MCPs) for Ontario and the New York intertie zone, but the other 39 prices would be similarly replaced along with the market schedule for dispatchable resources (see page 8 for an example of market schedule replacement):

Interval	1	2	3	4	5	6	7	8	9	10	11	12
Ont Energy MCP	$28	$30	$30	$38	$42	**$55**	**$55**	**$55**	**$55**	**$55**	$55	$55
Ont 30-minute OR MCP	$3	$3	$3	$3	$3	**$3.2**	**$3.2**	**$3.2**	**$3.2**	**$3.2**	$3.2	$3.2
NY Energy MCP	$38	$40	$40	$48	$52	**$65**	**$65**	**$65**	**$65**	**$65**	$65	$65
NY 30-minute OR MCP	$3	$3	$3	$3	$3	**$3.2**	**$3.2**	**$3.2**	**$3.2**	**$3.2**	$3.2	$3.2

Market Not Suspended – Example Three: Using Last Good Price and 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 Hour 8:

- We determine 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, we determine 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 for Intervals 6, 7 and 8, and the prices in Interval 11 of HE 8 most closely reflect the prices that would have been produced by the market for Intervals 9 and 10.
- We then administer the prices and market schedules for Intervals 6-8 by replacing them with the prices and market schedules from Interval 5, and administers the prices and market schedules for Intervals 9-10 by replacing them with the prices and market schedules from Interval 11.

The table below shows only the energy and 30-minute operating reserve market clearing prices (MCPs) for Ontario and the New York intertie zone, but the other 39 prices would be similarly replaced (see page 8 for an example of market schedule replacement):

Interval	1	2	3	4	5	6	7	8	9	10	11	12
Ont Energy MCP	$28	$30	$30	$38	$42	**$42**	**$42**	**$42**	**$55**	**$55**	$55	$55
Ont 30-minute OR MCP	$3	$3	$3	$3	$3	**$3**	**$3**	**$3**	**$3.2**	**$3.2**	$3.2	$3.2
NY Energy MCP	$38	$40	$40	$48	$52	**$52**	**$52**	**$52**	**$65**	**$65**	$65	$65
NY 30-minute OR MCP	$3	$3	$3	$3	$3	**$3**	**$3**	**$3**	**$3.3**	**$3.3**	$3.3	$3.3

Market Not Suspended – Example Four: Beyond 48 Intervals

If the need for administered prices continues beyond 48 intervals, we use:

- The last good interval's prices and market schedules for the first 24 intervals
- The next good interval's prices and market schedules for the last 24 intervals

For the intervals in between, we use the average of the published market prices for the corresponding hour of the four most recent business days (or non-business days if the prices are being administered for a non-business day):

- The energy price for Ontario ***and*** all intertie zones is set equal to the average Hourly Ontario Energy Price (HOEP) for the corresponding hour(s) on the four most recent business (or non-business) days.
- Similarly, Ontario and intertie zone operating reserve prices are set equal to the hourly average of the price for operating reserve in Ontario on the four most recent business (or non-business) days. No congestion management settlement credit payments will be made for these intervals (see footnote on page 2).

Assume that on Friday, June 18, the dispatch algorithm failed to produce prices for Hours 2-6.

- For the first 24 intervals (all intervals of Hours 2 and 3), we replace prices and market schedules using the last good interval's values (i.e., values from Interval 12 of Hour 1)

- For the last 24 intervals (all intervals of Hours 5 and 6), we replace prices and market schedules using the next good interval's values (i.e., values from Interval 1 of Hour 7).
- We replace prices for the intervals in between (Intervals 1-12 of Hour 4) by the arithmetic average HOEP of Hour 4 on the four most recent business days (June 14, 15, 16, and 17). We set market schedules equal to the corresponding constrained (dispatch) schedules, so that congestion management settlement credits (CMSC) payments are not made (see footnote on page 2).

The table below shows only the energy and 30-minute operating reserve prices for Hour 4: (see page 8 for an example of market schedule replacement)

Hour 4	June 14	June 15	June 16	June 17	4-Day Average
HOEP	$32	$36	$44	$40	$38
Hourly Average of Ontario 30-minute OR prices	$3.20	$3	$3	$3.20	$3.10

The resulting administered prices for Hour 4 of June 18 are:

- Ontario and all intertie zone energy price: $38
- Ontario and all intertie zone 30-minute operating reserve prices: $3.10

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, we 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 we use 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 price for Ontario ***and*** all intertie zones is set equal to the average Hourly Ontario Energy Price (HOEP) for the corresponding hour(s) on the four most recent business (or non-business) days. Similarly, Ontario and intertie zone operating reserve prices are set equal to the hourly average of the price for operating reservein Ontario on the four most recent business (or non-business) days.

There will be no CMSC payments for the period of market suspension.

Timelines

We have only two business days after the dispatch day to decide the need for administrative prices and schedules and to implement them. Beyond this window, the published prices and schedules become the prices and schedules used for settlement.

Communications

When we are reviewing the need to administer prices, we send notice via a message on the 'Administrative Pricing' web page:

Administrative Pricing Notices

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

Administrative Pricing RSS Feed

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

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

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

Dispatchable Participants and Market Schedules

Whenever prices are administered, the corresponding market schedules for dispatchable participants are also affected. Whenever we use the last or next good interval to establish administered prices, we also replace all resources' incorrect market schedules with the corresponding market schedules from the good intervals used.

Example of Administered Market Schedules and CMSC Payments – Market Not Suspended

If prices and market schedules are administered for up to 48 intervals, we use the last good interval's market schedule, or the next good interval's market schedule, or a combination of the two. This example uses a combination:

GenA's market schedule for Interval 2 of Hour 2 is 25 MW, dispatch schedule is 20 MW, price is $30

GenA's market schedule for Interval 10 of Hour 2 is 28 MW, dispatch schedule is 21 MW, price is $25

Prices and market schedules are administered for Intervals 3-9, using the last good market schedule (i.e., the schedule for Interval 2 of Hour 2) for Intervals 3-5, and using the next good market schedule (i.e., the schedule for Interval 10 of Hour 2) for Intervals 6-9

GenA's dispatch schedules are different from its market schedules; therefore, CMSC will be calculated (see *Introduction to Ontario's Physical Markets*, available on the Marketplace Training web pages, for an explanation of CMSC payments)

Interval	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
GenA's Market Schedule	25 MW	**25 MW**	**25 MW**	**25 MW**	**28 MW**	**28 MW**	**28 MW**	**28 MW**	28 MW
GenA's Dispatch Schedule	20 MW	**22 MW**	**22 MW**	**20 MW**	**23 MW**	**23 MW**	**24 MW**	**22 MW**	21 MW
Price	$30	**$30**	**$30**	**$30**	**$25**	**$25**	**$25**	**$25**	$25

Additional compensation (prices administered for up to 48 intervals)

You may claim additional compensation by submitting a notice of disagreement if you have followed our dispatch instructions, and:

- You have received negative CMSC (in this case we will offset the original negative CMSC amount), or
- You were not compensated enough in the net energy market

The total hourly CMSC adjustment or the total hourly additional compensation for the delivery point must equal or exceed a materiality limit. The current materiality limit is

$50 per hour, per delivery point, and the total submission must exceed $400 for each administrative pricing event. (Please refer to the Market Rules, Chapter 7, Sections 8.4A 13-16 for formulas and details.)

Beyond 48 Intervals and For Market Suspension Events

Beyond 48 intervals, when average prices (HOEP and OR) are being used, there will be no CMSC payments or charges made.

To ensure this, we will:

- Set the market schedule and the constrained (dispatch) schedule equal to *0* for internal resources, i.e., ms=cs=0, and

- Set the market schedule equal to the constrained schedule for boundary entities, i.e., ms=cs.

Additional compensation (prices administered beyond 48 intervals)

Please note, however, that you may claim additional compensation if:

- You have followed our dispatch instructions, and
- You can demonstrate that the administrative price does not cover your specified incremental costs plus 10% of those costs, subject to a minimum materiality limit. (The current materiality limit is the equivalent of at least $1000 for a given trade day and registered facility, or $200 for a given trade day and registered facility and the equivalent of $2 per megawatt hour. See *Market Manuals 4.3 and 4.5*)

Similarly, there is no CMSC for market suspension events.

Summary

When published prices and/or schedules are incorrect or missing, we have two business days to assess the need for administrative prices and schedules and to implement them.

Administrative prices and schedules are the replacement of incorrect prices and schedules – there is no recalculation of prices.

Once prices and schedules are administered, the revised prices and schedules are used for all settlement purposes. In some cases, market participants may claim additional compensation.

Additional Information

For more information on how prices and CMSC 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 web pages.

See the Rules and Manuals web page for:

- Market Manual 4.3 Real Time Scheduling of the Physical Markets
- Market Manual 4.5 Market Suspension and Resumption
- Market Manual 5.5 Physical Markets Settlement Statements
- Market Operations Manual: Guidelines for Additional Compensation During Administrative Pricing
- Additional Compensation During Administrative Pricing (Form 1398)
- Administrative Pricing Event Correction (Form 1549) (Use for event that does not exceed 48 intervals)

For additional information, please contact us at:

Email: customer.relations@ieso.ca Toll Free: 1-888-448-7777 Tel: (905) 403-6900