



## Market Rule Amendment Submission

This form is used to request an amendment to, or clarification of, the *Market Rules*. Please complete the first four parts of this form and submit the completed form by email or fax to the following:

Email Address: [Rule.Amendments@theIMO.com](mailto:Rule.Amendments@theIMO.com)

Fax No.: (416) 506-2847 Attention: Market Rules Group

**Subject: *Market Rule Amendment Submission***

All information submitted in this process will be used by the *IMO* solely in support of its obligations under the *Electricity Act, 1998*, the *Ontario Energy Board Act, 1998*, the *Market Rules* and associated policies, standards and procedures and its licence. All submitted information will be assigned the *confidentiality classification* of “public” upon receipt. You should be aware that the *IMO* will *publish* this *amendment submission* if the *Technical Panel* determines it warrants consideration and may invite public comment.

Terms and acronyms used in this Form that are italicized have the meanings ascribed thereto in Chapter 11 of the *Market Rules*.

### PART 1 – SUBMITTER’S INFORMATION

Please enter contact information in full

<b>Name: IMO Staff</b>	
(if applicable) <i>Market Participant / Metering Service Provider No.</i> <sup>1</sup> :	<i>Market Participant Class:</i>
<b>Telephone: 416 506-2801</b>	<b>Fax: 416 506-2847</b>
<b>Email Address: Rule.Amendments@theimo.com</b>	

### PART 2 – MARKET RULE AMENDMENT SUBMISSION INFORMATION

<b>Subject: Administrative Pricing</b>		
<b>Title: Review of Administrative Pricing</b>		
Nature of request (please indicate with X): <input checked="" type="checkbox"/> Alteration <input type="checkbox"/> Deletion <input type="checkbox"/> Addition <input type="checkbox"/> Clarification		
<b>Chapter: 7</b>	<b>Appendix:</b>	<b>Sections: 8.4 and 13</b>
<b>Sub-sections proposed for amending/clarifying :</b>		

<sup>1</sup> This number is a maximum of 12 characters and does not include any spaces or underscore.

**PART 3 – DESCRIPTION OF THE ISSUE**

Provide a brief description of the issue and reason for the proposed amendment. If possible, provide a qualitative and quantitative assessment of the impacts of the issue on you and the *IMO-administered markets*. Include the Chapter and Section number of the relevant market rules.

The IMO administers prices when the market pricing mechanism is not functioning normally. There have been a number of occasions when prices have been administered, such as during the market suspension resulting from the August 2003 blackout or more typically, on occasions when market related systems fail or are on outage.

Market participants and the IMO have identified a number of issues associated with the administering of market prices during the blackout and at other times when administered prices were necessary. These are described in section 4 of the attached strawman document and are briefly outlined below.

1. The carry-over of the administered market price and market schedule from one hour to next:  
Using a market schedule from a past interval is problematic when it is applied to the next dispatch hour. Using a past market schedule for the current hour could, and has, resulted in some very anomalous market settlement amounts.
2. Compensation to suppliers over and above the administered price:  
Presently the market rules allow market participants to claim an amount to cover a “margin of profit” at such fixed percentage as may be published by the IMO-Board under circumstances such as market suspension when administrative prices do not adequately compensate for following dispatch instructions. The appropriateness and determination of this amount has been subject to debate and uncertainty.
3. Correcting market prices:  
Some existing market rules restrict the ability of IMO to administer prices that are more reflective of what the market would have otherwise produced but for the event causing prices to be administered.
4. Using a prior day with similar dispatch conditions to administer prices:  
Applying the current market rule that requires the IMO to administer prices using a prior day with similar dispatch conditions is proving to be impractical and problematic, with outcomes unsatisfactory for market participants.

As a result of these issues, the IMO Board directed that the IMO to undertake a review of existing administrative practices.

A further elaboration of these issues and considerations in regards to administering prices can be found in the attached strawman document. This strawman document:

- lists guiding principles for determining administrative prices,
- outlines present practices for administering prices within the market rules,
- identifies certain issues that have arisen with the application of these rules,
- outlines and evaluates a number of options against the guiding principles to address these issues (see Appendix in the attached strawman), and
- proposes specific changes to the administrative pricing practices to address the identified issues.

**PART 4 – PROPOSAL (BY SUBMITTER)**

Provide your proposed amendment. If possible, provide suggested wording of proposed amendment.

Specifically, the attached strawman proposes the following approach regarding administering prices.

**1. Situations where the IMO-Administered Markets are not Suspended**

The guiding principles state under that these circumstances the administered price should reflect, to the extent practical, prices that would otherwise have been produced by the market. Accordingly, when the IMO is unable to publish a market price due to market systems forced or planned outage or when published market prices are incorrect, it is proposed that the IMO would administer prices as follows:

- a) When the event does not exceed 24 intervals, set the administered price and market schedule for a given interval equal to the price and schedule from either the last good interval or the next good interval that is itself not an administered price and schedule. The decision on which interval to use (“last good” or “next good”) would be based on the IMO’s judgement as to which price would better meet the guiding principle (i.e. price that would otherwise have been produced by the market). Other considerations that would be taken into account would be error materiality, reasonable effort and the desire on the part of the market for greater price certainty.
- b) When the event exceeds 24 intervals, the IMO would administer market prices (but there would be no market schedules) equal to the average of the actual hourly prices of the 4 most recent same days of the week (e.g. the administered price for the 10<sup>th</sup> hour of Tuesday would be the average of the market prices for the 10<sup>th</sup> hour of the 4 most recent Tuesdays). Since there is no market schedule, market participants that follow dispatch instructions would be able to claim for costs plus 10% if the administered prices do not provide adequate compensation.
- c) Approximate or, when capable, recalculate market prices and corresponding market schedules for the intervals in question when capable of doing so. The IMO would also have the option to approximate or, when capable, recalculate real-time market schedules and prices for selected intervals of the event and to have such prices and schedules serve as the basis for administering prices and schedules in adjacent intervals.

This approach recognizes that it may not be possible to anticipate all events that might lead to the need to administer market prices. So the intent is that the IMO could use any of these options in an effort to determine a price that would otherwise have been produced by the market. It provides the best opportunity to set an administrative price similar to what the market would derive. It also has much less likelihood to cause anomalous pricing like that that led to the need to implement urgent rule amendment MR-00238 because the use of the last good and next good interval prices and schedules should reduce the carry-over of administered prices and market schedules from one hour to another.

**2. Situations where the IMO-Administered Markets are Suspended**

In all circumstances that result in market suspension, the IMO would administer market prices (but there would be no market schedules) equal to the average of the actual hourly prices of the 4 most recent same days of the week (e.g. the administered price for the 10<sup>th</sup> hour of Tuesday would be the average of the market prices for the 10<sup>th</sup> hour of the 4 most recent Tuesdays) until the market resumes normal operations.

In addition, market participants can claim additional compensation if they follow dispatch instructions and they can demonstrate to the satisfaction of the IMO that the administered price does not cover their incremental costs, plus 10% of those costs.

## PART 5 – FOR IMO USE ONLY

<b>Technical Panel Decision on Rule Amendment Submission</b>	
<b>MR number: MR-00253</b>	
<b>Date submitted to Technical Panel:</b> February 12, 2004	
<b>Accepted by Technical Panel as:</b> <input checked="" type="checkbox"/> General ___ Urgent ___ Minor (please indicate with X)	<b>Date: February 17, 2004</b>
<b>Criteria for acceptance:</b> Since market participants make decisions based on real-time market pricing, administrative prices directly impact generators that offer into the market and loads that schedule their consumption according to market prices. The amendment submission warrants consideration as it would improve upon market efficiency.	
<b>Priority: High</b>	
<b>Criteria for assigning priority:</b> The amendment submission is a high priority due to the pervasiveness of the issue. i.e. administrative prices affect all market participants and the situations resulting in the requirement for administrative prices occur with some frequency.	
<b>Not accepted</b> (please indicate with X):	
<b>Clarification/interpretation required</b> (please indicate with X):	
<b>Technical Panel minutes reference: IMOTP 138-1</b>	
<b>Technical Panel Comments:</b>	
<ul style="list-style-type: none"> <li>– Where administrative prices are required because the market is suspended, consideration should be given to establishing administrative prices for business days and non-business days, rather than using the suggested approach of establishing separate administrative prices for each day of the week. These business day and non-business day administrative prices would have an hourly resolution, and be the average of the actual prices for the given hour in the day from the most recent four business days and the most recent four non-business days, respectively, prior to the market suspension. This alternative methodology is expected to result in prices that would be more reasonable to suppliers and consumers, as they are based on prices determined by the market immediately prior to the suspension.</li> <li>– Consideration should also be given to using pre-dispatch prices and schedules to administer prices in certain limited circumstances. (E.g. for those intervals beyond 2 hours when the market is not suspended).</li> </ul>	

## Strawman – Options for Changes to Administrative Pricing

### 1. INTRODUCTION

The IMO administers prices when the market pricing mechanism is not functioning normally. There have been a number of occasions when prices have been administered, such as during the market suspension resulting from the August 2003 blackout, or more typically, on occasions when market related systems fail or are on outage. Administrative prices affect all market participants as these prices are used for settlement purposes. In addition, some market participants make decisions based on published real-time market pricing and subsequent price changes resulting from the administration of real-time prices can have significant consequences for those market participants.

As a result of the issues arising from the administering of market prices during the August 2003 blackout and at other times when prices were administered, the IMO-Board directed the IMO to undertake a review of existing administrative pricing practices. This strawman document is the result of the IMO's staff review.

This strawman document:

- lists guiding principles for determining administrative prices (section 2),
- outlines present practices for administering prices within the market rules (section 3),
- identifies certain issues that have arisen with the application of these rules (section 4),
- outlines and evaluates a number of options against the guiding principles to address these issues (see Appendix), and
- proposes specific changes to the present administrative pricing practices that address the identified issues (section 5).

The strawman proposals will be considered by the Technical Panel along with any rule amendments that may be required to implement a final set of recommended changes.

### 2. GUIDING PRINCIPLES

To aid in the review of existing practices and the development of changes to administrative pricing practices, the IMO Board endorsed a set of guiding principles. Guiding principles for two situations were endorsed: the situation where the IMO-administered markets have **not** been suspended and the situation where the IMO-administered markets have been suspended. These principles are outlined below.

#### 2.1 Situations where the IMO-Administered Markets are not Suspended

If it has not been necessary to suspend the market, valid and up to date market participant bids and offers are typically available and IMO-controlled grid resources are dispatched on the basis of market system outcomes, except that:

- i) The IMO may be unable to publish a price due to an unplanned or planned outage of market systems, or
- ii) Bad inputs (e.g. as a result of telemetry failure/error) to market systems have resulted in an incorrect published price.

Under these circumstances, the guiding principle is that the administered price should reflect, to the extent practical, prices that would otherwise have been produced by the market.

**2.2 Situations where the IMO-Administered Markets are Suspended**

If it becomes necessary to suspend the market for whatever reason, such as the August 2003 blackout, the administered price should be established in accordance with the following guiding principles:

- The administered prices should be fair and reasonable considering both suppliers and consumers.
- The process should be understandable, transparent and administratively simple.
- The process at least, if not the administered price itself should be known in advance to provide clarity for contracting.
- The administered prices should not try to reflect a current market price while IMO-controlled grid operations are being conducted without regard to the market.
- Where IMO-controlled grid operations are based to some extent on market-based information and signals, maintain the flexibility to use the market systems and associated prices during a market suspension as the administered prices.

**3. PRESENT PRACTICES IN ADMINISTERING PRICES UNDER THE MARKET RULES (CHAPTER 7)**

The IMO administers prices (and corresponding market schedules<sup>1</sup>) when the market pricing mechanism is not functioning normally. The current market rules describe three circumstances when administrative pricing is necessary:

- During periods of market suspension;
- During forced or planned outages of market software, hardware and communication systems; and
- When published market prices are in error due to incorrect inputs<sup>2</sup>.

The following summarises administrative pricing under these circumstances.

Market suspension:	The IMO may administer prices either based on the outputs of the market systems and the IMO’s assessment of operating costs, or use a market price from a prior period with similar dispatch conditions.
Failures and outages of market systems and/or publication of incorrect prices:	<ul style="list-style-type: none"> <li>• For 1<sup>st</sup> 24 intervals administrative price and market schedule is set equal to the last good interval.</li> <li>• Beyond 24<sup>th</sup> interval price is based on a prior period with similar dispatch conditions and there is no market schedule (i.e. there are no CMSC payments/charges).</li> </ul>

**4. ISSUES ARISING FROM APPLYING THE CURRENT MARKET RULES**

Not counting the August 2003 market suspension, there has been, on average, 6.8 administrative pricing events per month with an average duration of 4.4 intervals since the start of the market. Of the possible causes (planned and unplanned outages of market tools, telemetry failures, and failures in a business process) most have been due to unplanned outages of the market tools. Only three have been due to a failure in a business process. With the exception of the August 2003 blackout, only one

<sup>1</sup> Since some market payments and charges such as CMSC (congestion management settlement credits) payments are dependent upon the market schedule, these payments and charges too are administered.

<sup>2</sup> There is a 2 business day limit to administer prices due to incorrect inputs (section 8.4.7).

administrative pricing event has been longer than 24 intervals, and that was the event of January 15, 2004. The market has been suspended only once (as a result of the August 2003 blackout).

Market participants and the IMO have identified a number of issues regarding the application of the current administrative pricing practices. These issues are discussed below. Except where identified otherwise most of these issues arise during circumstances when market prices are administered, but it has not been necessary to suspend the market.

#### **4.1 Carry-over of the administered market price and market schedule from one hour to next**

This can happen when prices are administered within the first 24 intervals. Using a market schedule from the last good interval is problematic when it is applied to the next dispatch hour. CMSC payments are calculated based on bids and offers submitted for the current hour. The offers and bids, and consequently the interchange schedules, can be quite different in the current hour compared to the hour from which the market schedule is carried forward. Consequently, the market schedule from the previous hour may be significantly different from the next hour.

Using a past market schedule from the previous hour for the current hour could, and has, resulted in some very anomalous market settlement amounts. For example, generation units that received CMSC payments for an interval under the past market schedule would be calculated to receive CMSC payments for the current interval regardless of their actual operation and actual system constraints, and vice versa. It was a circumstance such as this that led to the adoption of urgent rule amendment MR-00238<sup>3</sup>. While this rule amendment provided market participants with recourse to claim a correction when being assessed inappropriate charges, it provided no means for the correction of the inevitable opposite circumstance where a market participant receives an inappropriate CMSC payment (i.e. the recovery of revenue associated with the unjust enrichment of a market participant). These types of market outcomes adversely impact the efficient operation of the market and could erode participant confidence in the market.

#### **4.2 Compensation to Suppliers Over and Above the Administered Price**

Presently the market rules (chapter 7, sections 8.4.5D.2 and 13.6.3A.2) allow market participants to claim an amount to cover a “margin of profit at such fixed percentage as may be published by the IMO-Board” under circumstances such as market suspension when administrative prices do not adequately compensate a market participant for following dispatch instructions. This margin of profit is in addition to a claim for costs incurred. After the August 2003 blackout, there was considerable discussion as to whether or not suppliers should be given a “margin of profit” in addition to the administrative prices and what level of a “margin of profit” was appropriate.

The IMO Board has not established a “margin of profit” to date.

#### **4.3 Correcting Market Prices**

If the Ontario (and some interties) real-time market-clearing price is correct, but an intertie price is not correct due to some market system malfunction, it would not make sense to administer all market prices. The market rules should be amended to allow just the correction of an intertie price if the correction has little or no material impact upon other market prices.

Some market prices are incorrect but are not materially incorrect to require them to be administered. The market rules presently do not allow such prices to be used as a “last good interval”. In some circumstances their use as a “last good interval” would provide a price more reflective of the price the market would have produced.

---

<sup>3</sup> Under MR-00238 it was demonstrated that circumstances can arise, although infrequently, whereby market participants can be assessed significant and inappropriate congestion management costs.

#### 4.4 Using a Prior Day with Similar Dispatch Conditions to Administer Prices

The current market rules require the IMO to administer prices using a prior day with similar dispatch conditions (sections 8.4.5.2 b. and 8.4.5A.2) when the need to administer prices goes beyond 24 intervals or during a market suspension.

Experience to date suggests that the determination and application of such a prior day is proving to be problematic, with outcomes unsatisfactory for market participants. For example, it is difficult to select a similar day when loads are at new all time record levels such as occurred during the administrative pricing event of January 15, 2004. The prior day with similar dispatch conditions methodology is also problematic because of the difficulty of finding a day with dispatch conditions similar to those actually occurring during the recovery from a blackout. The variation of both resources and loads during the recovery period is subject to much uncertainty, and so too will be the appropriateness of the day selected. The load levels following the August 2003 blackout were low due to the customer appeals to reduce consumption. Choosing a similar day under these circumstances is both difficult and inherently inaccurate given that multiple similar days may exist but with different market prices due to different bids and offers. Determining which to use becomes problematic and subject to second-guessing.

### 5. PROPOSED APPROACH

#### 5.1 Situations where the IMO-Administered Markets are not Suspended

The guiding principles state under these circumstances that the administered price should reflect, to the extent practical, prices that would otherwise have been produced by the market. Accordingly, when the IMO is unable to publish a market price due to tool forced or planned outages or when published market prices are incorrect, it is proposed that the IMO would administer prices as follows:

- a) When the event does not exceed 24 intervals, set the administered price and market schedule for a given interval equal to the price and schedule from either the last good interval or the next good interval that is itself not an administered price and schedule. The decision on which interval to use (“last good” or “next good”) would be based on the IMO’s judgement as to which price would better meet the guiding principle (i.e. price that would otherwise have been produced by the market). Other considerations that would be taken into account would be error materiality, reasonable effort and the desire on the part of the market for greater price certainty.
- b) When the event exceeds 24 intervals, the IMO would administer market prices (but there would be no market schedules) equal to the average of the actual hourly prices of the 4 most recent same days of the week (e.g. the administered price for the 10<sup>th</sup> hour of Tuesday would be the average of the market prices for the 10<sup>th</sup> hour of the 4 most recent Tuesdays). Since there is no market schedule, market participants that follow dispatch instructions would be able to claim for costs plus 10% if the administered prices do not provide adequate compensation.
- c) Approximate or, when capable, recalculate market prices and corresponding market schedules for the intervals in question when capable of doing so. The IMO would also have the option to approximate or, when capable, recalculate real-time market schedules and prices for selected intervals of the event and to have such prices and schedules serve as the basis for administering prices and schedules in adjacent intervals.

This approach recognizes that it may not be possible to anticipate all events that might lead to the need to administer market prices. So the intent is that the IMO could use any of these options in an effort to determine a price that would otherwise have been produced by the market. It provides the best opportunity to set an administrative price similar to what the market would derive. It also has much less likelihood to cause anomalous pricing like that that led to the need to implement urgent



rule amendment MR-00238 because the use of the last good and next good interval prices and schedules should reduce the carry-over of administered prices from one hour to another.

It is important to note that the IMO currently only has the capability to approximate market prices and schedules off-line, as discussed in section A1.2 of the Appendix.

## **5.2 When it becomes necessary to suspend the market.**

In all circumstances that result in market suspension, the IMO would administer market prices (but not the market schedules) equal to the average of the actual hourly prices of the 4 most recent same days of the week (e.g. the administered price for the 10<sup>th</sup> hour of Tuesday would be the average of the market prices for the 10<sup>th</sup> hour of the 4 most recent Tuesdays) until the market resumes normal operations.

In addition, market participants can claim additional compensation if they follow dispatch instructions and they can demonstrate to the satisfaction of the IMO that the administered price does not cover their incremental OM&A costs, plus 10% of those costs.

The use of the historical average price is recommended based on the evaluation contained in the accompanying Appendix. As pointed out within the appendix, market suspensions and blackouts are very rare events. Nonetheless, the administered price should be fair and reasonable to both consumers and suppliers when they do occur. During the recovery periods following blackouts market systems, offers and bids may be available, but it is not recommended that they be used to determine a market-clearing price. Charging high market determined prices following a blackout when resources are scarce would be inappropriate, especially when consumers are foregoing consumption to aid in the recovery. Having just experienced a blackout, consumer confidence in the market would suffer considerably if the market were to resume before the resources had fully recovered. On the other hand, charging artificially low prices during periods of scarcity would be counter-intuitive. As noted above, since they are determined using prices that are fairly determined by the market before the event, both consumers and suppliers are more likely to consider administered prices determined in this manner are fair and reasonable.

For this and the other reasons cited in the appendix, the use of the historical average price is proposed.

The other option considered under circumstances of market suspension (i.e. regulated supplier cost based compensation) is not proposed because it is complicated and administratively difficult, especially for something that would likely be used infrequently – very infrequently in the case of blackouts.

## Appendix

### Evaluation of Administrative Pricing Options Using Guiding Principles

#### A1.0 SITUATIONS WHERE THE IMO-ADMINISTERED MARKETS ARE NOT SUSPENDED

The following three options are considered:

- Maintain the status quo but with added flexibility;
- Limited recalculation of the real-time market schedule and prices; and
- Full recalculation of the real-time market schedule and prices.

The three options are evaluated, relative to existing practices, against the guiding principle that administered price should reflect, to the extent practical, prices that would otherwise have been produced by the market.

#### A1.1 Maintain the status quo but with added flexibility.

This option is illustrated in Figure 1 and has the following features:

- i. Retain the auto-fill feature when the IMO is unable to publish prices normally.
- ii. For administered pricing events that do not exceed 24 intervals, retain the use of the last good interval price and market schedule (i.e. “copy forward”), but also enable the price and market schedule to be administered from the next good interval (i.e. “copy backward”). For example, consider an administered pricing event that spans two-hour changes as illustrated in Figure 1. At the start of the event the administered price and market schedule for each subsequent interval is set equal to the last good interval up until the end of the first dispatch hour (area 1). At the end of the event all the preceding intervals in the third hour are set equal to the next good interval (area 3). In this example the event extends beyond just the starting and ending hours of the event. These choices (i.e. of using either the last good interval or the next good interval) have the advantage that they do not cross the dispatch hour as discussed in section 4.1. For the intervening hour (area 2), the IMO would be afforded the choice of either copying forward from the last good interval or copying back from the next good interval for all intervals. The choice as to which price and schedule to use would be based on which better approximates the market price and schedule that would have otherwise been produced by the market in the second hour but for the event causing prices to be administered.
- iii. When administered pricing events go beyond 24 intervals, the same pricing methodology as is used under circumstances of market suspension (see section A2.1) would be used. The market schedule would not be copied forward. Suppliers would continue to be able to recover costs for following dispatch instructions if this administered price did not cover their costs.

The present market rules set market prices equal to those of the last good interval. The proposed changes suggested under this option better reflect prices that would otherwise have been produced by the market than does the current practice. Prices at the beginning of the event would be unchanged from the present rules, but beyond the crossing of the dispatch hour (see Figure 1) there would be an improvement over existing practice because the choice of market price and market schedule would be more consistent than under existing practice. Most of the circumstances contemplated under MR-00238 would be avoided as the instances of carry-over of market schedules from one hour to the next would be reduced. This option also has the benefit of being able to select a price that the market would have otherwise produced but for the administered pricing event.

## Status Quo with Changes

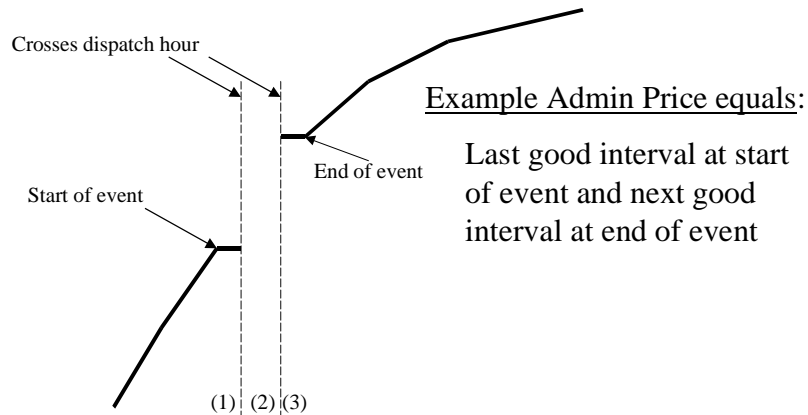


Figure 1

### A1.2 Limited Recalculation of the Real-time Market Schedule and Prices

Under this option the IMO would, off-line, recalculate the market schedule when capable of doing so with corrected inputs for selected intervals and, if necessary, copy prices and market schedules forward or back between those intervals. Consider the following illustrative example: the IMO discovers six incorrect prices in intervals that cross a dispatch hour. Prices were published but were not correct due to incorrect inputs. Under this option, selected intervals of the six would be re-run, using corrected inputs (bids, offers for domestic and intertie transactions etc) to determine the administered price and market schedule for those intervals. Because the event crosses a dispatch hour, one interval that would need to be recalculated is the first interval of the next hour. This would result in a reasonable market schedule based on bids and offers for that hour from which the administered prices and resulting CMSC payments for that hour could be determined. Market prices and schedules could be copied forward or copied back from a recalculated interval.

In the example portrayed in Figure 1, if prices and market schedules were incorrect and data existed to recalculate values for any of the 12 intervals of area (2), prices and market schedules could be determined for some of those intervals. Price and schedules could then be copied forward or back from the recalculated intervals.

The IMO currently does not have the capability to recalculate prices and market schedules. The IMO does have a limited manual and time-consuming capability that can at best approximate prices. It should be noted that the approximation capability currently is not possible in circumstances where there was a planned or forced outage of market systems, as the data necessary for the approximation would not have been created or saved.

This scheme contemplates a limited re-run capability that could be used to correct incorrect prices or approximate market prices and corresponding market schedules when data is available. Since it approximates market prices, this scheme too, better reflects prices that would have otherwise been produced by the market than the present practice of using the last good interval.

### **A1.3 Full Recalculation of the Real-time Market Schedule and Prices**

Under this option the IMO would, off-line, run real-time market schedule sequences for each interval requiring price administration and use the resulting market schedules and prices for settlement purposes. Again, in the example portrayed in Figure 1, if prices need to be administered for the 12 intervals of area (2) a price and corresponding market schedule for each interval could be determined.

This scheme would allow the replication of the results that the market tools would have created but for their failure, outage or occurrence of incorrect prices. It would be the best of the schemes, however the costs for the market systems changes to implement such a scheme are expected to be high.

### **A2.0 SITUATIONS WHERE THE IMO-ADMINISTERED MARKETS ARE SUSPENDED**

The following two options are considered:

- An historical average price;
- A regulated supplier cost-based price.

These two options are evaluated, relative to existing practices, against the following guiding principles:

- The administered prices should be fair and reasonable considering both suppliers and consumers.
- The process should be understandable, transparent and administratively simple.
- The process at least, if not the administered price itself should be known in advance to provide clarity for contracting.
- The administered prices should not try to reflect a current market price while IMO-controlled grid operations are being conducted without regard to the market.
- Where IMO-controlled grid operations are based to some extent on market-based information and signals, maintain the flexibility to use the market systems and associated prices during a market suspension as the administered prices.

#### **A2.1 Set the administered price at an historical average price.**

The IMO would, for example, use an average price for each day of the week based on the most recent 28 days (hourly or simply on/off peak and weekend values) as the administered price. All suppliers and loads would be settled on the basis of this administered price and actual production/consumption levels. Since the market is suspended, there would be no market schedules and hence, no congestion management settlement credit payments or charges calculated. Under the current market rules, market participants could claim additional compensation if they follow dispatch instructions and they can demonstrate to the satisfaction of the IMO that the administered price does not cover their incremental costs plus a “margin of profit” to be determined by the IMO-Board. This option would replace the “margin of profit” determined by the IMO-Board provision with a simple value of 10% to contribute towards participant fixed costs.

Using an average of more recent prices would better reflect current market conditions for suppliers and loads, than would an average over a longer time period (e.g. 365-day). Using 28 days of price data would also reduce the impact of anomalous/extreme prices that occurred in recent past more so than if a smaller set of historical prices were averaged (e.g. 7days; last 3 same week-days). A mechanism is needed to ensure that market participants are not out-of-pocket for costs incurred following dispatch instructions during a market suspension period. Some of the resources dispatched to alleviate supply shortfalls may be dispatched out of economic merit order and may not be able to recover their costs fully through the administered price. At a minimum, these participants should be fully compensated for their incremental costs for following dispatch instructions during market suspension. The existing market rules allow for the additional compensation to cover incremental

costs, plus a margin of profit to be determined by the IMO-Board. The proposed 10% adder as a contribution to fixed costs that would replace the margin of profit provision is similar to what the IMO uses when determining appropriate compensation for constrained on facilities under the market rules (Appendix 7.6, Local Market Power, section 1.6). It is also used in other markets where offer prices are regulated (e.g. PJM uses a 10% adder when regulating offer prices for local market power mitigation).

### A2.1.1 Comparison to Guiding Principles

- The administered prices should be fair and reasonable considering both suppliers and consumers.

The 28-day average price is calculated using prices that are fairly determined by the market before the event causing market suspension (i.e. at time when both suppliers and consumers could respond to prices). Therefore, both consumers and suppliers are more likely to judge them as fair and reasonable.

In the case of blackouts, they are very rare events. Nonetheless, the administered price should be fair and reasonable to both consumers and suppliers when they do occur. During the recovery periods following blackouts market systems, offers and bids may be available, but it is not recommended that they be used to determine a market-clearing price. Charging high market determined prices following a blackout when resources are scarce would be inappropriate, especially when consumers are foregoing consumption to aid in the recovery. Having just experienced a blackout, consumer confidence in the market would suffer considerably if the market were to resume before the resources had fully recovered. On the other hand, charging artificially low prices during periods of scarcity would be counter-intuitive. As noted above, since they are determined using prices that are fairly and recently determined by the market just before the event, both consumers and suppliers are more likely to consider administered prices determined in this manner are fair and reasonable.

- The process should be understandable, transparent and administratively simple.

This approach is relatively straightforward. Once established using cost plus 10% avoids further debate over what constitutes reasonable compensation if market participants seek additional compensation for cost recovery.

- The process at least, if not the administered price should be determined in advance to provide clarity for contracting.

The price could be determined and published on an ongoing basis.

- The administered prices should not try to reflect a current market price while IMO-controlled grid operations are being conducted without regard to the market.

This price reflects market prices in days prior to the event leading to market suspension, but does not attempt to emulate what market prices would be under the IMO-controlled grid system conditions experienced during market suspension.

- Where IMO-controlled grid operations are based to some extent on market-based information and signals, maintain the flexibility to use the market systems and associated prices during a market suspension as the administered prices.

This price is based on market based information, but as it contemplates market systems potentially being unavailable, it does not use those systems for price determination.

Figure 2 illustrates several possible pricing mechanisms based on the 28-day average scheme and based on the conditions experienced during the blackout. It shows for the period August 14<sup>th</sup> when the blackout occurred through August 22<sup>nd</sup> when market suspension ended:

- Demand (load levels);
- The administered prices that were used based on the day with similar dispatch conditions methodology; and
- the following two alternative pricing mechanisms:

- a “simple average” that works out to about \$43 per MW.h, and
- a “specific hour average” that averages based on the hour and day of the week (i.e. for the 24 hours in the day and the 7 days in the week).

Prices would have been lower under the “specific hour average” pricing scheme than those used during the blackout using the similar dispatch conditions methodology. Another case (not shown) that provides greater weighting to the weeks leading up to the event (40%, 30%, 20% and 10% in the earlier weeks, respectively) results in higher prices but are still lower than those used during the blackout. As can be seen in Figure 2, this kind of average pricing scheme provides a more stable and predictable administered pricing arrangement than the similar dispatch conditions methodology that was used during the blackout.

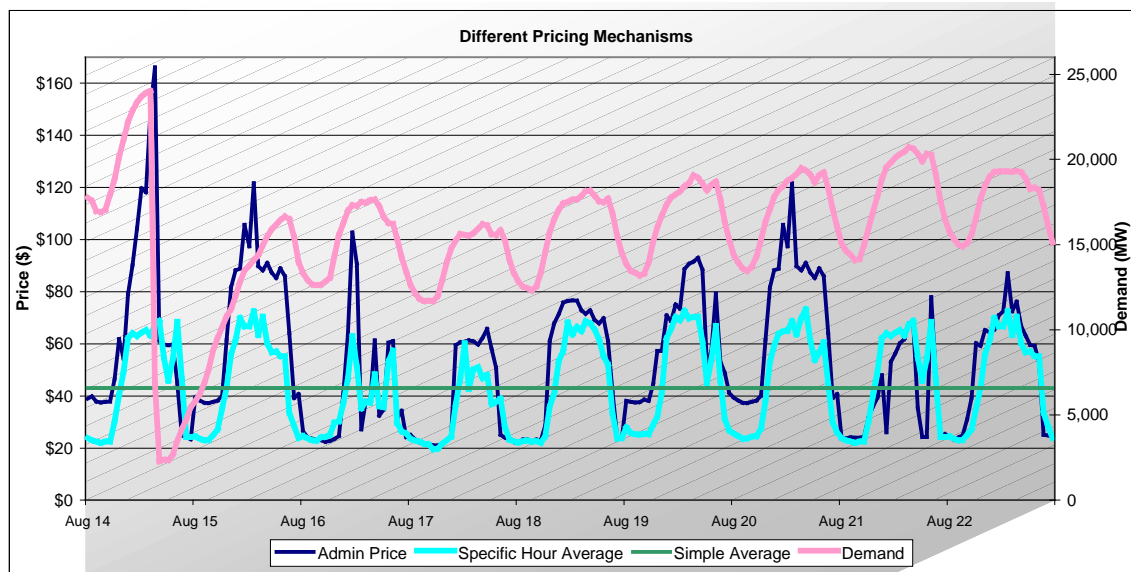


Figure 2

## A2.2 Set the Administered Price at a Regulated Supplier Cost-Based Value

Under this option a regulated price for each resource on basis of resource costs would be established by the IMO ahead of time (e.g. on an annual basis). During a market suspension, the resource dispatched in a given hour with the highest regulated price would set the market price for the hour. That regulated price would be used to charge all loads and pay all suppliers in that hour. Costs to be considered for regulated prices could include incremental fuel and OM&A. In addition the regulated price for each resource could include a fixed adder to contribute to the recovery of fixed costs.

The following are examples of regulated price options based on supplier costs in other markets.

- Some examples of existing regulated prices for merchant generation include PJM, which regulates offer prices for local market power mitigation, including a 10% adder, and New York, which applies automatic offer price caps based on historical offer prices.
- In Alberta an administered price of \$50 per MWh is used during blackouts. This price, which was set in 1999 and was considered fair and reasonable under market conditions at that time, is currently under review.

Neither of these mechanisms in the other markets contemplate providing a mechanism for suppliers to request or receive additional compensation beyond the regulated price.

### A2.2.1 Comparison to Guiding Principles

- The administered prices should be fair and reasonable considering both suppliers and consumers.

To the extent that such regulated prices are first determined in a fair and reasonable manner, then they will be considered fair and reasonable.

- The process should be understandable, transparent and administratively simple.

This depends on the extent to which the regulatory process has these attributes. This option is not judged to be administratively simple compared to option A2.1 above. It is complicated and administratively difficult, especially for something that would likely be used infrequently – very infrequently in the case of blackouts.

- The process at least, if not the administered price should be determined in advance to provide clarity for contracting.

The process for determining these regulated prices would be prescribed in the market rules and market manuals. Such regulated prices can be determined in advance for each resource, but could not be published due to information confidentiality requirements. Since the price actually used is dependent on resources dispatched during the market suspension, advance notice of the price would not be possible.

- The administered prices should not try to reflect a current market price while IMO-controlled grid operations are being conducted without regard to the market.

Such prices by definition ignore market prices, but presumably would attempt to capture prices representative of fair market value under normal circumstances.

- Where IMO-controlled grid operations are based to some extent on market-based information and signals, maintain the flexibility to use the market systems and associated prices during a market suspension as the administered prices.

Such prices ignore market prices, but do create a “market clearing” price by using the highest regulated price dispatched to set the price.