



Market Rule Amendment Proposal

PART 1 – MARKET RULE INFORMATION

Identification No.: MR-00235-R00	
Subject: Systems Operations and Physical Markets	
Title: Market Pricing Issues Initiatives - Spare Generation On-Line and Including Control Action Sources of Operating Reserve in the Market	
Nature of proposal (please indicate with X): ___Alteration___ Deletion ___X___ Addition	
Chapter: 7	Appendix:
Sections: 2.2B (new)	
Sub-sections proposed for amending:	

PART 2 – PROPOSAL HISTORY

Version	Reason for Issuing	Version Date
1.0	Submitted for Technical Review	June 11, 2003
Approved Amendment <i>Publication</i> Date:		
Approved Amendment <i>Effective</i> Date:		

PART 3 – EXPLANATION FOR PROPOSED AMENDMENT

Provide a brief description of the following:

- The reason for the proposed amendment and the impact on the *IMO-administered markets* if the amendment is not made
- Alternative solutions considered
- The proposed amendment, how the amendment addresses the above reason and impact of the proposed amendment on the *IMO-administered markets*.

Summary

These proposed rule amendments will implement the following two initiatives which are part of the IMO's integrated approach to address market pricing issues:

- Spare generation on-line in shoulder periods (refer to R00-R04) and
- Putting control action sources of operating reserve into the market (refer to R05).

The first initiative, spare generation on-line, offers a guarantee of start-up and minimum generation costs to generators. The expected consequence is that generators that might not otherwise commit their units due to uncertainty in being dispatched sufficiently to recover such costs will do so. This spare is expected to reduce the need for the IMO to take out-of-market control actions in response to real-time changes in market and system conditions. The impact of the IMO taking out-of-market control actions is one of the significant contributing factors to the market pricing issues.

The second initiative is to change the way in which control action sources of operating reserve, one of those control actions, are scheduled in the IMO-administered markets. It is proposed that rather than manually scheduling those control action sources on the basis of forecasted need, standing offers for those sources would be introduced in the market at prices to be determined by the IMO Board. These standing offers would then be available for selection by the dispatch scheduling algorithm on the basis of need and the relative prices of all offers of operating reserve. This initiative is expected to result in more transparent, rationale and understandable market pricing signals and outcomes.

Background¹

The three major pricing issues that have been identified by market participants are: the differences between pre-dispatch and real-time prices; counter-intuitive prices in times of shortage; and the size, content, and variability of uplift. The factors that have lead to these issues also contribute to reduced market efficiency and impacts on the reliability of the IMO-controlled grid. The IMO is pursuing an integrated approach to these market pricing issues. The objective of this approach is to provide rational and understandable prices, improve efficient operation of IMO-administered markets and improve the reliable operation of the IMO-controlled grid.

The strategy to address the pricing, market efficiency and reliability issues is to reduce the frequency of need for out-of-market control actions and then to alter the manner in which control action sources of operating reserves are placed into the market. The means to affect the necessary changes is through an integrated package of initiatives, including the two initiatives proposed in these rule amendments.

¹ For a detailed description and analysis of the market pricing issues, strategy and initiatives, refer to the IMO Discussion Paper:

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

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Spare Generation On-Line Description

The spare generation on line initiative (please refer to MR-00235-R00-04) seeks to have available spare generation on-line in shoulder periods². There would be a guarantee of recovery of start-up and minimum generation costs for domestic generation facilities participating in this voluntary program. This program is comparable and consistent with similar programs provided in neighbouring markets and jurisdictions. This guarantee of generator costs is also consistent with features of the day-ahead market currently under development by the IMO.

It is expected this initiative will reduce the frequency of the need for the IMO to use out of market control actions in response to market and system changes in real-time.

The construct of the spare generation on-line initiative is as follows:

- A domestic, dispatchable generation facility can become eligible for this voluntary program by providing the IMO with its start-up and minimum generation costs, a minimum run-time, and its minimum loading point. (refer to R00)
- The IMO would retain the right to audit the costs submitted to it to ensure the market was not overpaying for the energy provided by the generation facilities. This is important since these costs would not be subject to market forces which is different than is the case for energy and operating reserve offers made by generators in the competitive real-time market. (refer to R00)
- The market participant can revise the cost, minimum run-time and minimum loading point information at any time.
- The market participant would submit dispatch data for an eligible generation facility using existing tools, processes and procedures.
- If the generation facility is scheduled in the 3 hour ahead pre-dispatch schedule for a given dispatch hour, the market participant would, in order for their facility to be eligible for the guarantee, notify the IMO of its intent to synchronize within that dispatch hour, and the facility would need to actually do so. (refer to R02)
- The IMO shall in order to respect the minimum run-time requirement, constrain on the facility at its minimum loading point for the facility's submitted minimum run-time. (refer to R02)
- The market participant, subject to the provisions of section 3.3.8 of Chapter 7, shall not revise its submitted price/quantity pairs reflective of the generation facility's minimum loading point. This is necessary to prevent a potential gaming opportunity in which the market participant could through the revision of its dispatch data in the time period between notifying the IMO of its intent to synchronize and the closing of the bid window increase its congestion management settlement credit payments. (refer to R00)
- The generation facility shall follow its IMO dispatch instructions as per the existing market rules.
- Every month for each eligible generation facility on a per-start basis, the IMO would sum the following market revenues earned during the minimum run-time: energy, operating reserve and

² Shoulder periods are defined as those periods when market demands are such that not all domestic generation is required to be synchronized to meet the demand. Such periods are typically in the spring and autumn seasons and in off-peak periods in the summer and winter seasons.

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CMSC payments. The IMO would compare this sum of revenues to the submitted start-up and minimum generation costs. If the sum of market revenues is greater than or equal to the sum of the costs, no additional payments would be made. If the sum of market revenues is less than the submitted costs the IMO will pay the market participant the difference thus guaranteeing the recovery of those costs for the generation facility. (refer to R03)

- The guarantee would be paid out to generators as a monthly payment. The costs for the guarantee payments would be collected from other market participants as monthly uplift. Collection would be on the basis of monthly allocated quantity of energy withdrawn (AQEW) for each market participant. (refer to R03)
- To facilitate this initiative it is necessary to introduce several new definitions into Chapter 11 of the market rules. (refer to R04).

“Control action Sources” of Operating Reserve Into the Market Description

Also proposed is the inclusion of control action sources of operating reserve in the IMO-administered markets (refer to R05). By introducing the operating reserve at a price the marketplace will clear at price that reflects the value of the resources meeting that demand. This initiative will significantly improve the efficiency of the market by ensuring that accurate signals are sent to the market when there is a shortfall. It is expected that the other pricing initiatives will reduce the frequency with which the IMO uses ‘control action’ sources of operating reserve and will reduce price and dispatch volatility. Making this change in isolation is expected to increase the average market price, through the elimination of the counter-intuitive pricing that has resulted when the control action sources of operating reserve being manually scheduled. Therefore, the impact of bringing these sources of operating reserve into the market needs to be tempered by other initiatives that reduce the frequency of their use. The staging of these initiatives including removal of the 4 to 2 hour restrictions (MR00232), improved market information (MR00230), and hour ahead dispatchable load (MR00220) addresses this balance. The implementation of all the other market pricing initiatives is expected to establish conditions and market operation such that the operating reserve initiative can be implemented without unacceptable impact.

MR-00235-R00 - It is proposed to insert a new section 2.2B in Chapter 7. The purpose of this proposed section is described below:

Section 2.2B.1 – Articulates the conditions under which a generation facility can be eligible for the generation cost guarantee.

Section 2.2B.2 - Enables the IMO to audit the data submitted to ensure any generation cost guarantee payments made to eligible generation facilities are appropriate.

PART 4 – PROPOSED AMENDMENT**2.2B Generation Facility Eligibility for the Generation Cost Guarantee**

2.2B.1 A generation facility shall be eligible for the guarantee of certain elements of its costs, calculated in accordance with section 4.7B of Chapter 9, provided the following criteria are met:

2.2B.1.1 the facility is not a quick-start facility;

2.2B.1.2 the facility is a dispatchable generation facility;

2.2B.1.3 the facility is located within Ontario;

2.2B.1.4 the applying market participant has, according to the timelines and in the form specified in the applicable market manual, submitted to and accepted by the IMO the following data for the generation facility: combined guaranteed costs; minimum run-time; and the minimum loading point; and

2.2B.1.5 the market participant shall, subject to section 3.3.8 of Chapter 7, not revise its submitted price quantity pair corresponding to the generation facility's minimum loading point.

2.2B.2 The IMO shall retain the right, at any time, to audit the data submitted in accordance with section 2.2B.1.4. If the data is determined to be inaccurate it shall be deemed to be a breach of the market rules and the IMO shall act in accordance with section 6 of Chapter 3.

PART 5 – IMO BOARD COMMENTS

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Market Rule Amendment Proposal

PART 1 – MARKET RULE INFORMATION

Identification No.: MR-00235-R01	
Subject: Systems Operation and Physical Market	
Title: Market Pricing Issues - Spare Generation On-Line and Including Control Action Sources of Operating Reserve in the Market	
Nature of proposal (please indicate with X): ___Alteration___ Deletion ___x___ Addition	
Chapter: 7	Appendix:
Sections: 5.7 (new)	
Sub-sections proposed for amending: 5.7.1 (new)	

PART 2 – PROPOSAL HISTORY – PLEASE REFER TO MR-00235-R00

Version	Reason for Issuing	Version Date
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- The proposed amendment, how the amendment addresses the above reason and impact of the proposed amendment on the *IMO-administered markets*.

Refer to MR-00235-R00.

It is proposed to specify in the market rules how a generation facility becomes eligible for the generation cost guarantee for a given synchronization in a given dispatch hour. It is therefore proposed that a new section 5.7 be inserted into Chapter 7 to detail this eligibility.

PART 4 – PROPOSED AMENDMENT

5.7 Pre-Dispatch Scheduling of Generation Facilities Eligible for the Generation Cost Guarantee

5.7.1 A generation facility shall be eligible for the generation cost guarantee on a per-start basis for a given dispatch hour, provided that:

5.7.1.1 the generation facility is scheduled for the dispatch hour in the the pre-dispatch schedule determined 3 hours ahead of the dispatch hour;

5.7.1.2 the generation facility is not already synchronized at the time of the publication of the pre-dispatch schedule referred to in section 5.7.1.2;

5.7.1.3 the generation facility notifies the IMO of its intention to synchronize and then run for at least the minimum run-time in accordance with applicable market manual and, if dispatched, does in fact both synchronize and run for at least the minimum run-time.

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Market Rule Amendment Proposal

PART 1 – MARKET RULE INFORMATION

Identification No.: MR-00235-R02	
Subject: Systems Operation and Physical Market	
Title: Market Pricing Issues - Spare Generation On-Line and Including Control action Sources of Operating Reserve in the Market	
Nature of proposal (please indicate with X): ___Alteration___ Deletion ___x___ Addition	
Chapter: 7	Appendix:
Sections: 6.3A (new)	
Sub-sections proposed for amending: 6.3A.1, 6.3A.2 (new)	

PART 2 – PROPOSAL HISTORY – PLEASE REFER TO MR-00235-R00

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Refer to MR-00235-R00.

Consequential to MR-00235-R00 there is a need to specify in the market rules with respect to the real-time scheduling of generation facilities eligible for the generation cost guarantee that the facility must be synchronized before the end of the given dispatch hour and that the IMO shall constrain on the facility at its minimum loading point in order to respect the submitted minimum run-time for the facility. It is therefore proposed to insert a new section 6.3A to facilitate these actions.

PART 4 – PROPOSED AMENDMENT

6.3A Real-Time Scheduling of Generation Facilities Eligible for the Generation Cost Guarantee

6.3A.1 A generation facility eligible for the generation cost guarantee shall, after notifying the IMO of its intent to synchronize pursuant to section 5.7 of Chapter 7, and, if dispatched, synchronize before the end of the specified dispatch hour and run for the minimum run-time.

6.3A.2 The IMO shall, in order to respect the minimum run-time submitted by the market participant for the generation facility, constrain on the facility at its minimum loading point for the specified minimum run-time.

PART 5 – IMO BOARD COMMENTS



Market Rule Amendment Proposal

PART 1 – MARKET RULE INFORMATION

Identification No.: MR-00235-R03	
Subject: Systems Operation and Physical Market	
Title: Market Pricing Issues - Spare Generation On-Line and Including Control action Sources of Operating Reserve in the Market	
Nature of proposal (please indicate with X): <u> </u> Alteration <u> </u> Deletion <u> x </u> Addition	
Chapter: 9	Appendix:
Sections: 4.7B (new)	
Sub-sections proposed for amending: 4.7B.1, 4.7B.2, 4.7.B.3 (new)	

PART 2 – PROPOSAL HISTORY – PLEASE REFER TO MR-00235-R00

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Consequential to MR-00235-R00 there is a need to clarify how the generation cost guarantee is calculated and the conditions by which such payments shall be made to the eligible generation facility. Guarantee payments will be determined monthly for all starts for each eligible facility. Any guarantee payments will be made to generators on a monthly basis. Costs for the guarantee payments shall be recovered from load market participants as part of monthly uplift charges. Monthly payments and collections are proposed due to the manual processes required to be used to implement this initiative.

PART 4 – PROPOSED AMENDMENT**4.7B Generation Cost Guarantee Payments**

4.7B.1 The *IMO* shall determine on a *per-start* basis, for each *generation facility* that has met the eligibility criteria for the *generation cost guarantee* specified in sections 2.2, 5.7 and 6.3A of Chapter 7, the following:

4.7B.1.1 the sum of the following market revenues earned by the *generation facility* during the period of its *minimum run-time* and the time from synchronization to the *IMO-controlled grid* to achieving *minimum loading point*: *net energy market settlement credit*, *operating reserve settlement credit*, and any applicable congestion management settlement credit payments.; and

4.7B.1.2 the combined guaranteed costs submitted by the market participant for the specified *generation facility* for all of the *minimum run-times* specified in section 4.7B.1A.

4.7B.2 If for each eligible *generation facility* the sum of the revenues calculated pursuant to section 4.7B.1A is greater than or equal to the *combined guaranteed costs* referred to in section 4.7B.1B, then no additional payments are made in respect of the eligible *generation facility* by the *IMO*.

4.7B.3 If for each eligible *generation facility* the sum of the revenues calculated pursuant to section 4.7.1A is less than the *combined guaranteed costs* referred to in section 4.7B.1B, then the *IMO* shall calculate that difference and shall include that

amount in the form of additional payments made in respect of the eligible generation facility.

4.8 Additional Non-Hourly Settlement Amounts

4.8.1 The *IMO* shall, at the end of each *energy market billing period*, recover from *market participants*, on a pro-rata basis across all allocated quantities of *energy* withdrawn at all *RWMs* and *intertie metering points* during all *metering intervals* and *settlement hours* within that *energy market billing period*, the following amounts:

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4.8.1.7 any funds borrowed by the *IMO* and any associated interest costs incurred by the *IMO* in the preceding *energy market billing period* pursuant to section 6.14.5.2; ~~and~~

4.8.1.8 any compensation paid in that *energy market billing period* by the *IMO* pursuant to section 4.7A.; ~~and~~

4.8.1.9 any compensation paid in that *energy market billing period* by the *IMO* pursuant to section 4.7.B3.

PART 5 – IMO BOARD COMMENTS



Market Rule Amendment Proposal

PART 1 – MARKET RULE INFORMATION

Identification No.: MR-00235-R04	
Subject: Systems Operations and Physical Markets - Market Pricing Issues	
Title: Market Incentives to Increase Spare Generation On-Line/Including Control action Sources of Operating Reserve in the Market	
Nature of proposal (please indicate with X): <input type="checkbox"/> Alteration <input type="checkbox"/> Deletion <input type="checkbox"/> Addition	
Chapter: 11	Appendix:
Sections:	
Sub-sections proposed for amending:	

PART 2 – PROPOSAL HISTORY – PLEASE REFER TO MR-00235-R00

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Consequential to MR-00235-R00 there is need to add a number of new definitions to Chapter 11 of the market rules to facilitate the generation cost guarantee.

PART 4 – PROPOSED AMENDMENT

quick start facility means a generation facility whose electrical energy output can be provided to the IMO-controlled grid within 5 minutes of the IMO's request and is provided by equipment not synchronized to the IMO-controlled grid when the request to start providing energy is made;

minimum run-time means the time period specified by the market participant, for which a generation facility having reached its minimum loading point must run in accordance with the technical requirements of the facility;

combined guaranteed costs means all fuel costs, as defined in the applicable market manual, incurred by a generation facility to achieve synchronization and once synchronized with the IMO-controlled grid to move to the generation facility's minimum loading point and once at its minimum loading point to stay at that point for the generation facility's specified minimum run-time."

minimum loading point means the minimum output of energy specified by the market participant that can be produced by a generation facility under stable conditions without ignition support.

per-start means the act of achieving synchronization to the IMO-controlled grid, ramping to the minimum loading point and operating at the minimum loading point for the minimum run-time.

PART 5 – IMO BOARD COMMENTS



Market Rule Amendment Proposal

PART 1 – MARKET RULE INFORMATION

Identification No.: MR-00235-R05	
Subject: Systems Operations and Physical Markets - Market Pricing Issues	
Title: Market Incentives to Increase Spare Generation On-Line/Including ‘Control action’ Sources of Operating Reserve in the Market	
Nature of proposal (please indicate with X): ___Alteration___ Deletion ___x___ Addition	
Chapter: 5	Appendix:
Sections: 4.5.6A (revised)	
Sub-sections proposed for amending: 4.5.6A.1, 4.5.6A.2, 4.5.6A.3 (new)	

PART 2 – PROPOSAL HISTORY – PLEASE REFER TO MR-00235-R00

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Refer to MR-00235-R00.

In order to facilitate the inclusion of ‘control action’ sources of operating reserve in the IMO-administered markets (please refer to MR-00235-R00) it is necessary to revise section 4.5.6A of Chapter 5 to place an obligation on the IMO to put these offers into the market. However, in some circumstances it may be necessary for reliability reasons for the IMO to remove these offers, however, when the IMO takes such action there is an additional obligation on the IMO in subsection 4.5.6.A.1 to promptly notify market participants and the IMO Board of such actions and the reasons therefor. Subsection 4.5.6.A.2 articulates the offer prices and quantities for this ‘control action’ operating reserve shall be set by the IMO Board and subsection 4.5.6.A.3 obligates the IMO to publish when these offers are scheduled.

PART 4 – PROPOSED AMENDMENT**4.5 Operating Reserve**

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4.5.6A ~~The IMO may include the reduction in load that would result from a 3% or 5% voltage reduction to meet the operating reserve requirements to the extent that there are or, in the IMO’s reasonable estimation, there will likely be insufficient market based resources of operating reserve available. The IMO shall, unless for a specified period of time there is an adverse impact on the reliable operation of the IMO-controlled grid, include voltage reductions, and reductions in the thirty-minute operating reserve requirements within allowable reliability standards as standing offers in the operating reserve markets.~~

4.5.6A.1 If the IMO does not include the offers pursuant to section 4.5.6A the IMO shall notify market participants and the IMO Board of such action including the reasons therefor.

4.5.6A.2 The offer prices and quantities in section 4.5.6A shall be set by the IMO Board and these offer prices and quantities shall be published by the IMO.

4.5.6A.3 The IMO shall publish the times and quantities of the voltage reductions and reduction in thirty-minute operating reserve when these sources of operating reserve are scheduled to provide operating reserve.

PART 5 – IMO BOARD COMMENTS