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## Market Rule Amendment Proposal

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### PART 1 – MARKET RULE INFORMATION

<b>Subject:</b> IMO Administration		
<b>Title :</b> Local Market Power Rule Amendments – Deletion of On-Peak and Off-Peak Terminology and Calculation of Price Limits for Negative Reference Prices		
<b>Nature of proposal</b> (please indicate with X on the right): Alteration – <input checked="" type="checkbox"/> Deletion <input type="checkbox"/> Addition <input type="checkbox"/>		
<b>Chapter:</b> 7	<b>Appendix:</b> 7.6	
<b>Sections :</b> 1.3		
<b>Sub-sections proposed for amending:</b> 1.3.3, 1.3.4, 1.3.5, 1.3.7, and 1.3.8		

### PART 2 – PROPOSAL HISTORY

Issue	Reason for Issue	Issue Date
	Amendment submission reviewed by Technical Panel (TP-108)	July 16, 2002
1.0	Technical Panel Consultation (IMOTP 109-3c)	August 14, 2002
2.0	Technical Panel Consideration and Vote (IMOTP 110-2b)	September 4, 2002
3.0	Approved by the Technical Panel (TP-110)	September 10, 2002

**Approved Amendment Publication Date:**

**Approved Amendment Effective Date:**

**PART 3 – EXPLANATION FOR PROPOSED AMENDMENT**

Provide a brief description of the following:

- The reason for the proposed amendment and the impact 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*.

It is proposed to amend the applicable sub-sections of section 1.3 of Appendix 7.6 by:

1. deleting the defined terms on-peak and off-peak and replace them with descriptions of the respective time periods;
2. adding an equation which will account for negative reference prices and its correct application to the price limits as referred to in section 1.3.2 of Appendix 7.6; and
3. correct italicizing of defined terms.

In regards to the first of these proposed amendments, some market participants indicated concern that the reference to on-peak periods and off-peak periods, used in Appendix 7.6 as defined in Chapter 11, have been leading to confusion and contracting difficulties in the marketplace (this issue was previously documented under MR-00197-Q00). The definitions of on-peak and off-peak in Chapter 11 are not consistent with other industry and market definitions or notions of what is “on-peak” and “off-peak”. Although the definition and intended use of these terms in the market rules is specific to Appendix 7.6, this nevertheless can be misleading for those entities which rely on the definitions in the market rules regarding their transactions.

The terms “on-peak” and “off-peak” are only used in Appendix 7.6 for the establishment of two averages representative of a facility’s prices over the previous 90 days (see section 1.3.3). These averages are referred to as the on-peak historical reference price and the off-peak historical reference price. The on-peak historical reference price is an average of prices accepted in the market schedule during weekday hours – from 7:00 EST to 21:00 EST on business days. The off-peak historical reference price is an average of prices accepted during other or non-weekday hours.

It is proposed that the term on-peak be replaced by the phrase “business days between the hours of 07:00 and 23:00 EST” and that off-peak refer to as all other time periods. This terminology is consistent with the existing market rules definitions of on-peak and off-peak, so there is no change in the local market power mitigation provisions.

In regards to the second of the proposed amendments, section 1.3.8 describes how the IMO calculates the acceptable energy offer and bid price limits based on reference prices and high end and low end factors. These price limits are used, along with other criteria (see sections 1.3.1 and 1.3.9), to screen congestion management settlement credit (CMSC) payments to determine whether they may have resulted from an abuse of local market power. When a reference price is negative, application of the high end and low end price limits results in the irrational result of the upper price limit being below the reference price and the lower end limit being higher than the reference price. Therefore, these ranges are rendered ineffective when reviewing an investigated (negative) price (see sections 1.3.2 to 1.3.8 for application of the price limits). The calculation of the upper and lower price limits need to be modified to account for negative reference prices. This proposed change would enable the IMO to properly apply

the price limit screen.

An example of the problem is illustrated below.

If the reference price is -\$40/MWh and the upper price limit (price duration) factor is 1.25, multiplying the two values leads to an upper price limit of  $1.25 \times (-\$40/\text{MWh}) = -\$50/\text{MWh}$ , which is lower than the reference price. Thus, if a market participant offered a price of -\$40/MWh, equal to the reference price, such a price would be higher than the calculated limit and could fail the price screen which is clearly not the intended outcome.

In such a case, a more appropriate calculation would lead to a price limit which is 25% above the reference price, or in this case, -\$30/MWh which is \$10/MWh above the reference price.

Instead of applying the calculation:

$$\text{RP} * \text{factor} \quad (1)$$

(where RP is the reference price), it is more reasonable to calculate the limit as:

$$\text{RP} + \text{abs} [\text{RP}] * (\text{factor} - 1) \quad (2)$$

(where abs [RP] is the absolute value of RP, which is a positive number)

When RP is positive, equation (2) becomes equivalent to equation (1). However, when RP is negative equation (2) will lead to:

- i) upper ranges above the reference price, as the term (factor -1) will be greater than 1 since the high end factors are > 1; and
- ii) lower ranges below the reference price, as the term (factor -1) will be less than 1 since low end factors are <1.

The equation listed above (2) is applicable to positive and negative reference prices, as the case may be.

As per the *Electricity Act, 1998*, these rule amendments satisfy the IMO's statutory objective to establish and operate the IMO-administered markets so as to promote the purposes of the *Act*.

## PART 4 – PROPOSED AMENDMENT

### 1.3 Initial Local Market Power Screens

- 1.3.1 The *IMO* shall review the inputs and outputs of the *dispatch algorithm* for the *dispatch intervals* to which the *investigated price* relates, and such other information as the *IMO* determines appropriate, for the purpose of determining whether a transmission flow constraint on the *IMO-controlled grid* or a *security limit* resulted in a *constrained on event* or a *constrained off event*.
- 1.3.2 The *IMO* shall determine whether the *investigated price* falls within the range determined in accordance with section 1.3.8 using the *reference prices* referred to

in section 1.3.3 and the factors derived from the methodology approved by the *IMO Board* pursuant to section 1.3.5.

1.3.3 For the purposes of section 1.3.2, the *reference prices* shall be:

1.3.3.1 the ~~on-peak~~ *historical reference price representing business days between the hours of 07:00 and 23:00 EST for the investigated facility*;  
or

1.3.3.1A the ~~off-peak~~ *historical reference price representing all time periods other than those specified in section 1.3.3.1 for the investigated facility*;  
~~investigated facility~~

as the case may be depending on whether the ~~investigated price~~ *investigated price* was submitted for ~~the time period indicated in section 1.3.3.1 or section 1.3.3.1A~~ *an on-peak period or an off-peak period*, referred to as  $P_h$ , or

1.3.3.1B; ~~—~~ where permitted by section 1.3.4, such alternative ~~reference price~~ *reference price*, if any, as may be established by the *IMO Board* and published pursuant to section 1.3.4, referred to as  $P_a$ ; and

1.3.3.2 the market price for *energy* determined for the *dispatch interval* to which the *investigated price* relates, referred to as  $P_m$ ,

provided that, if *dispatch data* that has been accepted by the *IMO*, as reflected in the *market schedules* for that *investigated facility*, is not available in respect of the *investigated facility* for at least fifteen of the ninety days comprising the period over which the relevant *historical reference price* referred to in sections 1.3.3.1 and 1.3.3.1A is calculated, sections 1.3.3.1 and 1.3.3.1A shall not apply and only the *reference price* referred to in section 1.3.3.2 shall be used for the purposes of section 1.3.2.

1.3.4 The *IMO Board* may establish the alternative *reference price* referred to in section 1.3.3.1 B based on an average of the price contained in all *energy offers* or *energy bids* submitted by the *registered market participant* for an *investigated facility* and accepted by the *IMO*, as reflected in the most recent *market schedules* for that *investigated facility*, during ~~on-peak periods or off-peak periods~~, the time periods specified in section 1.3.3.1 or the time periods specified in section 1.3.3.1A as the case may be, in respect of a given increment or increments of supply or consumption. No such alternative *reference price* shall be used by the *IMO* for the purposes of section 1.3.3.1 B until the manner of determination of such *reference price* and the conditions in which it may be applied have been *published* by the *IMO*.

1.3.5 The *market surveillance panel* shall, for the purposes of section 1.3.2 and in accordance with sections 1.3.6 and 1.3.7, establish the methodology for

determining a pair of high end factors and a pair of low end factors for each type of *reference price* referred to in section 1.3.3, including the alternative *reference price* referred to in section 1.3.3.1B, if any. Such methodology shall:

- 1.3.5.1 be submitted to the *IMO Board* for approval; and
- 1.3.5.2 be *published* by the *IMO* in the form approved by the *IMO Board*.

...

1.3.7 The methodology referred to in section 1.3.5 for determining the pair of high end factors and the pair of low end factors may differ for, and the resulting pairs of factors may also differ for, each of the *reference prices* referred to in section 1.3.3, including the alternative *reference price*, if any, referred to in section 1.3.3.1B. For each such *reference price*:

- 1.3.7.1 the high end factors shall decrease as either the number of consecutive hours or the number of cumulative hours referred to in sections 1.3.6.1 and 1.3.6.2, respectively, increase, provided that neither of such factors shall be less than the value 1.0; and
- 1.3.7.2 the low end factors shall increase as either the number of consecutive hours or the number of cumulative hours referred to in sections 1.3.6.1 and 1.3.6.2, respectively, increase, provided that such neither of such factors shall be greater than the value 1.0.

1.3.8 The *IMO* shall establish the range referred to in section 1.3.2 in respect of an *investigated price* as follows:

- 1.3.8.1 for the high end of the range the *IMO* shall:
  - a. calculate, for each applicable *reference price* referred to in section 1.3.3, high end values for each of the number of consecutive hours and the number of cumulative hours referred in sections 1.3.6.1 and 1.3.6.2, respectively, using the following equation:  

$$\text{reference price} + \text{absolute value (reference price)} \times (\text{factor} - 1)$$
~~as the product of where~~ the factor used in the above equation is ~~reference price multiplied by~~ the high end factor determined for that type of *reference price* in accordance with sections 1.3.5 to 1.3.7 that corresponds to the appropriate number of consecutive hours or number of cumulative hours referred to in sections 1.3.6.1 and 1.3.6.2, respectively;
  - b. select, in respect of each applicable *reference price*, the lesser of the high end values calculated pursuant to section 1.3.8.1(a); and

- c. select the larger of the high end values based on  $P_m$  or  $P_h$  or, where the alternative *reference price* referred to in section 1.3.3.1 **B** is used, based on  $P_m$  or  $P_a$ ; and

1.3.8.2 for the low end of the range the *IMO* shall:

- a. calculate, for each applicable *reference price* referred to in section 1.3.3, low end values for each of the number of consecutive hours and the number of cumulative hours referred to in sections 1.3.6.1 and 1.3.6.2, respectively, using the following equation:
- $reference\ price + absolute\ value\ (reference\ price) \times (factor - 1)$
- as the product of where the factor used in the above equation is ~~reference price multiplied by~~ the low end factor determined for that type of *reference price* in accordance with sections 1.3.5 to 1.3.7 that corresponds to the appropriate number of consecutive hours or number of cumulative hours referred to in sections 1.3.6.1 and 1.3.6.2, respectively;
- b. select, in respect of each applicable *reference price*, the larger of the low end values calculated pursuant to section 1.3.8.2(a); and
- c. select the lesser of the low end values based on  $P_m$  or  $P_h$  or, where the alternative *reference price* referred to in section 1.3.3.1 **B** is used, based on  $P_m$  or  $P_a$ .

## PART 5 – IMO BOARD COMMENTS




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## Market Rule Amendment Proposal

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### PART 1 – MARKET RULE INFORMATION

<b>Subject:</b> IMO Administration		
<b>Title :</b> Local Market Power Rule Amendments – Amendments to Definitions		
<b>Nature of proposal</b> (please indicate with X on the right): Alteration – X    Deletion    Addition		
<b>Chapter:</b> 11	<b>Appendix:</b>	
<b>Sections :</b>		
<b>Sub-sections proposed for amending:</b>		

<b>PART 2 – PROPOSAL HISTORY – REFER TO MR-00200-R00</b>		
Issue	Reason for Issue	Issue Date

**Approved Amendment Publication Date:**

**Approved Amendment Effective Date:**

### PART 3 – EXPLANATION FOR PROPOSED AMENDMENT

Provide a brief description of the following:

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- Alternative solutions considered
- The proposed amendment, how the amendment addresses the above reason and impact of the proposed amendment on the *IMO-administered markets*.

The proposed changes to the definitions listed in Part 4 are consequential to the proposed changes discussed and listed in MR-00200-R00.

### PART 4 – PROPOSED AMENDMENT

*historical reference price* means ~~an off-peak historical reference price, an on-peak historical reference price or both~~ in respect of an *investigated facility*, the unweighted average of the price contained in all *energy offers* or *energy bids* submitted by the *registered market participant* for that *investigated facility* and accepted by the *IMO*, as reflected in the most recent *market schedules* for that *investigated facility* for the *dispatch intervals* to which such *energy offers* or *energy bids* relate, during all relevant hours in the ninety days preceding the date for which an *investigated price* is submitted by the *registered market participant* for that *investigated facility*;

~~*off-peak historical reference price* means, in respect of an *investigated facility*, the unweighted average of the price contained in all *energy offers* or *energy bids* submitted by the *registered market participant* for that *investigated facility* and accepted by the *IMO*, as reflected in the most recent *market schedules* for that *investigated facility* for the *dispatch intervals* to which such *energy offers* or *energy bids* relate, during all off-peak periods in the ninety days preceding the date for which an *investigated price* is submitted by the *registered market participant* for that *investigated facility*;~~

~~*off-peak period* means a period other than an *on-peak period*;~~

~~*on-peak historical reference price* means, in respect of an *investigated facility*, the unweighted average of the price contained in all *energy offers* or *energy bids* submitted by the *registered market participant* for that *investigated facility* and accepted by the *IMO*, as reflected in the most recent *market schedules* for that *investigated facility* for the *dispatch interval* to which such *energy offers* or *energy bids* relate, during all *on-peak periods* in the ninety days preceding the date for which an *investigated price* is submitted by the *registered market participant* for that *investigated facility*;~~

~~*on-peak period* means the period between and including 07:00 EST and 23:00 EST on a~~

*business day;*

**PART 5 – IMO BOARD COMMENTS**