



Urgent Market Rule Amendment Proposal

PART 1 – MARKET RULE INFORMATION

Identification No.: MR-00239-R00	
Subject: Congestion Management Settlement Credit (CMSC) Payments	
Title: Eliminate CMSC Payments Associated with Negative Priced Offers	
Nature of proposal (please indicate with X): <u> </u> Alteration <u> </u> Deletion <u> X </u> Addition	
Chapter: 9	Appendix:
Sections: 3.5	
Sub-sections proposed for amending: 3.5.6; 3.5.7 (all new)	

PART 2 – PROPOSAL HISTORY

Version	Reason for Issuing	Version Date
1.0	Submit to Technical Panel for Stakeholder Review	13 June 2003
2.0	Submit to Urgent Rule Amendment Committee for Approval	25 June 2003
3.0	Approved by Urgent Rule Amendment Committee	26 June 2003
Approved Amendment <i>Publication Date</i>:		26 June 2003
Approved Amendment <i>Effective Date</i>:		5:00 p.m. EST 26 June 2003

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

It is proposed to limit congestion management settlement credit (CMSC) payments under specified circumstances. Specifically, when a market participant is eligible for a constrained off CMSC payment for a generation facility in Ontario and has an offer with negative prices, the offer price(s) used in the CMSC payment calculation would be the lesser of \$0/MWh and the applicable energy market price.

Rule amendments are required to eliminate significant CMSC payments to market participants that are not consistent with the intent of CMSC payments. Although CMSC payments involving negative priced offers have occurred since market commencement, the magnitude of the payments has increased in recent months. This rule amendment is considered to be urgent as it meets the following statutory criteria: “It would avoid, reduce or mitigate the effects of an unintended adverse effect of a market rule.” The magnitude of the CMSC payments to market participants experienced recently would be an unintended adverse effect of the CMSC payment market rules.

CMSC Background

The original intent of CMSC payments within the regime of Ontario uniform pricing is to keep a market participant whole with respect to the profit implied by its market schedule where the market participant has been subject to a constraining dispatch instruction and thereby encourage compliance with dispatch instructions¹. It was recognized during development of CMSC market rules that CMSC payments may occur in regards to negative priced offers. However, the CMSC regime was viewed as transitional as it was expected that the market would be moving to locational marginal pricing, which would eliminate the need for CMSC payments. Under this expectation, and the expectation that the payments would not be significant, these types of CMSC payments were judged to be acceptable.

Offers Priced at Negative MMCP

Market participants have the authority under market rules to submit offers with prices as low as negative MMCP (i.e. –2000 \$/MWh). A market participant may have legitimate operational reasons to submit offers with negative prices for a resource, for example, to achieve a desired dispatch. The market design in regards to the CMSC payment calculation implicitly assumes that market participant costs are reflected in their offer prices.

A negative offer price implies that the market participant would be willing to pay the market that price in order to avoid being shutdown or constrained off. This would be the case if the market participant were to incur costs if they shut-down, including if they are “constrained off”. However, the price may not be reflective of costs, but merely reflective of a desired dispatch.

If a market participant’s market schedule quantity is not equal to its constrained schedule quantity,

¹ Strawman - Congestion Management Settlement Credit, IMO Staff and NERA, 9 Dec 99 (Technical Panel document IMOTP 26-6b)

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CMSC payments are determined on the basis of the difference between the offer price and the market clearing price. This difference is assumed to be an implied or notional operating profit. If a market participant has submitted offers with negative prices, the end result is that CMSC payments will equal $(MCP - (\text{negative offer price}))$ times the MW difference between the two schedules.

Discussion

The intent of this rule amendment is to limit constrained off CMSC payments associated with negative offer prices for Ontario generators.

These CMSC payments are not consistent with the intent of the CMSC payment regime because the compensation to participants is neither checked by market competition or subject to a review or “claw back” by the IMO. If the market participant was willing to accept market clearing prices to produce, it is reasonable that market clearing price should be adequate compensation for not producing. Under this rule amendment, the CMSC payment would be equal to the market clearing price times the MW amount constrained off.

Under the current provisions regarding local market power, the IMO is empowered only to investigate and “claw back” CMSC payments that result from transmission constraints. Excessive or inappropriate CMSC payments that may result from dispatch deviations and negative priced offers are therefore not subject to any existing investigation or “claw back” provision.

The need for this urgent rule amendment is to prevent excessive CMSC payments by eliminating the negative offer price portion of CMSC compensation. The proposed change should not change market participant incentives to follow dispatch instructions. Participants with negative priced offers that are constrained off would receive a CMSC payment equal to the market clearing price times the MW amount constrained off.

Description of Proposed Rule Amendments

The proposed adjustments (sections 3.5.6 and 3.5.7) would only be applied to generation facilities within Ontario with negative offer prices that are eligible for constrained off payments. It is only under these circumstances that the possibility of the CMSC payments of concern can arise.

The adjustments to the negative offer prices are proposed to be to the lesser of 0 \$/MWh and the energy market price. This qualification on the adjustment (i.e. using the energy market price) is necessary to avoid charging the market participant an inappropriate negative CMSC payment that would result if the applicable energy market price is less than 0.00 \$/MWh and the participant’s offer prices were adjusted to 0 \$/MWh.

Implementation

In order to implement this rule amendment as soon as possible, the proposed amendment would maintain the existing CMSC payment calculations but enable the IMO to “claw back”, by means of a manual adjustment at the end of a billing period, inappropriate CMSC payments for the previous billing period. The net effect would be that the net CMSC payment (i.e. the original CMSC payment and the “claw back”) would be equal to a CMSC payment calculated with a “floor” price on the market participant’s offer prices. This manual adjustment would be used until the IMO can develop the software capability to make the adjustments at the time of original CMSC payment calculation. Since there is an existing study tool which performs these calculations, except where the constrained off magnitude is less than 1 MW, and the manual process is temporary, it is recommended that the manual process need not be applied to magnitudes less than 1 MW.

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The manual adjustment process is proposed to be done at the end of a billing period for the previous billing period (e.g. at the end of August, the IMO would determine and claw back the adjustments for July). This time lag is appropriate to ensure that the CMSC adjustments are based on final settlement statement data and would reduce the need for subsequent adjustments. Under the automated implementation, the adjustments would be made at any time that CMSC payments are determined.

PART 4 – PROPOSED AMENDMENT

3.5 Hourly Settlement Amounts for Congestion Management

3.5.1 The *dispatch instructions* provided by the *IMO* to *market participant k* will sometimes instruct *k* to deviate from its *market schedule* in ways that, based on *market participant k's offers and bids*, imply a change to *market participant k's net operating profits relative to the operating profits implied by market participant k's market schedule*. When this occurs and *market participant k* responds to the *IMO's dispatch instructions*, *market participant k* shall, subject to Appendix 7.6 of Chapter 7, receive as compensation a *settlement credit* equal to the change in implied operating profits resulting from such response, calculated in accordance with section 3.5.2. If *market participant k* does not fully or accurately respond to its *dispatch instructions* from the *IMO*, the compensation paid to *market participant k* shall be altered as set forth in this section 3.5, or as otherwise specified by the *IMO*.

3.5.2 Subject to [sections 3.5.6 and 3.5.7](#) and [subject to](#) Appendix 7.6 of Chapter 7, the hourly congestion *management settlement credit* for *market participant k* for *settlement hour h* (“ $CMSC_{k,h}$ ”) shall be determined by the following equation:

Let ‘BE’ be a matrix of *n price-quantity pairs* offered by *market participant k* to supply *energy* during *settlement hour h*

Let ‘BR_r’ be a matrix of *n price-quantity pairs* offered by *market participant k* to supply class *r operating reserve* during *settlement hour h*

Let ‘BL’ be a matrix of *n price-quantity pairs* bid by *market participant k* to withdraw *energy* by a *dispatchable load* during *settlement hour h*

Let OP(P,Q,B) be a profit function of Price (P), Quantity (Q) and an *n x 2 matrix* (B) of offered *price-quantity pairs*:

$$OP(P, Q, B) = P \cdot Q - \sum_{i=1}^{s^*} P_i \cdot (Q_i - Q_{i-1}) - (Q - Q_{s^*}) \cdot P_{s^*+1}$$

Where:

s^* is the highest indexed row of B such that $Q_{s^*} \leq Q \leq Q_n$ and where, $Q_0=0$

B is matrix BE, BR_r, or BL (see above)

Using the terms below, let CMSC be expressed as follows:

$$CMSC_{k,h} = OPE_{k,h} + OPR_{k,h} + OPL_{k,h}$$

Where:

$OPE_{k,h}$ represents that component of the *congestion management settlement credit* for *market participant* k during *settlement hour* h attributable to a constraint on *energy* production subject to section 3.5.1 and is calculated as follows:

$$OPE_{k,h} = \sum_{m,t} \left[\begin{array}{l} OP(EMP_h^{m,t}, MQSI_{k,h}^{m,t}, BE) - \\ \text{MAX}(OP(EMP_h^{m,t}, DQSI_{k,h}^{m,t}, BE), OP(EMP_h^{m,t}, AQEI_{k,h}^{m,t}, BE)) \end{array} \right]$$

Where:

$$\text{MAX}[X,Y] = \text{Maximum of X or Y}$$

During any *metering interval* t within *settlement hour* h in which the mathematical sign of $DQSI_{k,h}^{m,t} - MQSI_{k,h}^{m,t}$ is not equal to the mathematical sign of $AQEI_{k,h}^{m,t} - MQSI_{k,h}^{m,t}$, the component of $OPE_{k,h}$ at location m, determined in accordance with section 3.1.4A, or *intertie metering point* m for that *metering interval* t shall equal zero.

$OPR_{k,h}$ represents that component of the *congestion management settlement credit* for *market participant* k during *settlement hour* h attributable to a constraint on the provision of *operating reserve* subject to section 3.5.1 and is calculated as follows:

$$OPR_{k,h} = \sum_{m,t,r} \left[\begin{array}{l} OP(PROR_{r,h}^{m,t}, SQROR_{r,k,h}^{m,t}, BR_r) - \\ \text{MAX}(OP(PROR_{r,h}^{m,t}, DQSR_{r,k,h}^{m,t}, BR_r), OP(PROR_{r,h}^{m,t}, AQOR_{r,k,h}^{m,t}, BR_r)) \end{array} \right]$$

During any *metering interval* t within *settlement hour* h in which the mathematical sign of $DQSR_{r,k,h}^{m,t} - SQROR_{r,k,h}^{m,t}$ is not equal to the mathematical

sign of $AQOR_{r,k,h}^{m,t} - SQROR_{r,k,h}^{m,t}$, the component of $OPR_{k,h}$ at location m , determined in accordance with section 3.1.4A, or *intertie metering point* m for that *metering interval* t shall equal zero.

$OPL_{k,h}$ represents that component of the *congestion management settlement credit* for *market participant* k during *settlement hour* h attributable to a constraint on the withdrawal of *energy* by a *dispatchable load* subject to section 3.5.1. $OPL_{k,h}$ utilizes the negative of each output from each component Operating Profit (OP) function so as to correct for negative revenue streams (owing to withdrawals of *energy*).

$OPL_{k,h}$ is calculated as follows:

$$OPL_{k,h} = \sum_{m,t} \left[\begin{array}{l} -1 \times OP(EMP_h^{m,t}, MQSW_{k,h}^{m,t}, BL) - \\ \text{MAX}(-1 \times OP(EMP_h^{m,t}, DQSW_{k,h}^{m,t}, BL), -1 \times OP(EMP_h^{m,t}, AQEW_{k,h}^{m,t}, BL)) \end{array} \right]$$

During any *metering interval* t within *settlement hour* h in which the mathematical sign of $DQSW_{k,h}^{m,t} - MQSW_{k,h}^{m,t}$ is not equal to the mathematical sign of $AQEW_{k,h}^{m,t} - MQSW_{k,h}^{m,t}$, the component of $OPL_{k,h}$ at location m , determined in accordance with section 3.1.4A, or *intertie metering point* m for that *metering interval* t shall equal zero.

3.5.3 [Intentionally left blank]

3.5.4 Subject to section 5.3.4 of Chapter 5, during instances where $CMSC_{k,h}$ is calculated at an *intertie metering point* at which a *market participant* is conducting an import or export transaction for a *physical service* that is subject to a *constrained off event* that is reflected in *dispatch instructions* issued by the *IMO* as a result of a request initiated by an entity other than the *IMO*, the *IMO* shall not calculate any portion of $CMSC_{k,h}$ pertaining to the affected transaction for those *metering intervals* within *settlement hour* h in which such conditions exist, and for greater certainty, during any *metering interval* in which:

3.5.4.1 $MQSIk, hm, t$ is not equal to $DQSIk, hm, t$ as a result of such a constrained off event;

- 3.5.4.2 M_{QSWk,hm,t} is not equal to D_{QSWk,hm,t} as a result of such a constrained off event; or
- 3.5.4.3 S_{QRORr,k,hm,t} is not equal to D_{QSRr,k,hm,t} as a result of such a constrained off event;

and irrespective of whether or not a *constrained on event* or a *constrained off event* was affecting the transaction in any preceding *metering interval*.

- 3.5.5. A DQSI, DQSW or DQSR, quantity as the case may be, that departs from its corresponding *market schedule* quantity due to the circumstances described in section 3.5.4 shall be denoted as such within the supporting data provided to the affected *market participant* as part of the content of *settlement statements* described in sections 6.5.3.1 and 6.5.3.2.

3.5.6 Subject to section 3.5.7, the IMO shall adjust, in the matrices specified in section 3.5.2 and for the purposes of determining the applicable congestion management settlement credit payments, any offer price that:

3.5.6.1 is associated with a generation facility located within Ontario; and

3.5.6.2 is less than a specified lower limit where such limit is the lesser of 0.00 \$/MWh and the energy market price for the applicable dispatch interval;

to that lower limit.

3.5.7 Until such time that the IMO has the software capability to make the adjustments specified in section 3.5.6 at the time of the determination of the CMSC payments, the IMO shall, at the end of each billing period, for all circumstances where an applicable facility's DQSI quantity and AQEI quantity are at least 1 MW less the corresponding MQSI quantity, adjust the applicable market participant's CMSC payments for the previous billing period to the amount that would have been determined had section 3.5.6 been applied in first instance. This section shall cease to have effect and shall be noted as "[intentionally left blank]" when such software capability has been put into service.

PART 5 – IMO BOARD COMMENTS