

ISSUE 23: ELIMINATION OF CONSTRAINED-OFF PAYMENTS UNCERTAINTY WITH RESPECT TO THE FUTURE OF CONSTRAINT PAYMENTS

Date Raised

Raised in October 2002 by the Market Surveillance Panel (MSP) in its first *Monitoring Report on the IMO-Administered Electricity Markets*, and later considered in February and July 2003 as part of the MSP's review of Congestion Management Settlement Credits in the IMO-Administered Electricity Market. Prompted by the review conducted by the IMO's Market Surveillance Panel in October 2002 and raised again in August 2004 by the IMO Market Pricing Working Group

Description

As part of its ongoing analysis of the efficiency of the design and operation of the IMO-Administered electricity market, the Ontario Market Surveillance Panel (MSP) undertook an examination of the role played by constrained off Congestion Management Settlement Credit (CMSC) payments in facilitating the efficiency of the market. In particular, the MSP urged reconsideration of the conceptual and operational rationale and appropriateness of constrained off payments for energy to generators and imports and, furthermore, posed whether constrained off CMSC payments should be eliminated in the service of market efficiency or, at the very least, whether they could be eliminated without any reduction to market efficiency. A general concern has been expressed by market participants over the future prospect and impact of changes to Ontario's constraint payment regime. Insofar as the existing constraint payment system is a fundamental feature of Ontario's overall market design, changes to it would impact on the market as a whole. The concerns are captured within the various discussions held over the past few years with respect to the role and appropriateness of constraint payments. Such discussions include the IMO Market Surveillance Panel's (MSP) first *Monitoring Report on the IMO-Administered Electricity Markets* (October 2002) and subsequent review of Congestion Management Settlement Credits (CMSC) in the IMO-Administered Electricity Market (February and July 2003), and more recently, the IMO Day-Ahead Market (DAM) Working Group's deliberations on the role of CMSC within the context of an Ontario DAM design.

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conceptual and operational rationale and appropriateness of constrained off payments for energy to generators and imports and, furthermore, posed whether constrained off CMSC payments should be eliminated in the service of market efficiency.

In the Day-Ahead Market Working Group, the issue of CMSC was discussed in terms of whether Ontario's existing CMSC regime could be feasibly and effectively applied in the DAM.

Background

Due to transmission constraints and other factors, aspects of the transmission system within Ontario may from time to time result in the need to rebalance generation within the province in order to ensure that electricity can get to where it is needed. This is done by “constraining off” from the grid some participants who have indicated that they are willing to produce at the market clearing price, when their output cannot flow to where it is needed, and “constraining on” other participants onto the grid even though their offers indicated that they were not willing to produce at the market price. These rebalancing actions result in CMSC payments, which are recovered from all energy users through hourly uplift charges.

When a generator is constrained on or off, it receives a corresponding CMSC payment. CMSC payments reflect the difference between the Market Clearing Price (MCP) and offer price in a given interval, and are meant to ~~pay~~ ensure that generators receive at least their offer price (above the MCP) when they are constrained on, and to compensate generators when they are constrained off. CMSC payments can also be issued to dispatchable loads that are dispatched on or off.

~~As mentioned above, the~~ The current IMO-Administered electricity market features a uniform market pricing approach to energy and operating reserves. The Ontario Market Design Committee (MDC) recommended this uniform-price market as part of a regime entailing a CMSC system designed to keep market participants whole with respect to profits implied by their market schedules where those market participants have been subject to a constraining dispatch instruction. Alternatives to a uniform pricing approach were examined by the MDC, but in part due to the fact that nodal-based alternatives were then barely nascent in other jurisdictions, analyses of the merits and demerits of a multi-zonal approach were arguably still inconclusive, and in light of various other domestic considerations, the MDC was unable to recommend any of those alternatives.

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The uniform pricing and CMSC regime recommended by the MDC was viewed as transitional as it was expected that Ontario's market design would move towards a nodal pricing approach (which was to be examined following 18 months of market operation) which, in turn, would eliminate the need for CMSC payments. Under this expectation, and the expectation that the payments would not be significant, CMSC payments were judged to be an acceptable interim solution.

Why a Pricing Issue

~~CMSC in general is a pricing issue since CMSC payments concern final consumers who ultimately pay them through uplift, both because these payments are real money and because there is no way to hedge them. Additionally, there are concerns that participants could increase CMSC costs through strategic offering and bidding, and that wholesale market participants insulated by CMSC payments from the real-time costs of congestion are not sent the appropriate market signals that might better inform their location decisions or incentivise them to advocate or pay for transmission expansions. Further, the more specific question of whether constrained-off CMSC payments should be eliminated relates to the discussion of the role of those payments in supporting short-term and long-term market efficiency and reliability as well as to the general discussion of the dynamics and outcomes of a uniform pricing regime. CMSC payments are an integral feature of Ontario's uniform pricing system. The intent and immediate impact of the CMSC payments (i.e. whether constrained-on or constrained-off payments) within that system is to keep market participants whole with respect to the profits implied by their market schedules where those market participants have been subject to a constraining dispatch instruction. Concerns over the impacts of CMSC payments relate to, among other things, the possibility that participants could increase CMSC costs through strategic offering and bidding, and that wholesale market participants insulated by CMSC payments from the real-time costs of congestion are not sent the appropriate market signals that might better inform their location decisions or provide them with incentives to advocate or pay for transmission expansions¹. Further, CMSC payments concern final consumers, who ultimately pay them through uplift.~~

¹ Some of the MSP's concerns with respect to CMSC payments have been addressed through recent Market Rule changes pertaining to constrained-off payments resulting from deviations from dispatch instructions and limitations on CMSC payments related to negative offers and bids.

Impacts of Issue

Market Impact

~~Broadly speaking, the intent and immediate impact of the CMSC payment in general (i.e. be it a constrained-on or constrained-off payment) within Ontario's uniform system is to keep market participants whole with respect to the profit implied by their market schedules where those market participants have been subject to a constraining dispatch instruction. Changes to Ontario's CMSC regime would likely increase the degree of risk encountered by participants, and would likely lead to changes in offer and bid strategies and behaviours, posing implications on market efficiency and investment incentives². Additionally, changes to Ontario's CMSC regime might require changes to other aspects of Ontario's market design (such as to Ontario's uniform pricing approach). Uncertainty among Ontario stakeholders as to the likelihood of any such changes may create a degree of unease for some, possibly resulting in a delay or postponement of investment decisions.~~

~~While recognizing the theoretical and practical rationale for constrained-on payments, in its review of the role of CMSC payments in Ontario, the MSP specifically revisited the rationale for *constrained-off* payments, and questioned the contribution of such payments to overall market efficiency and fairness. For instance, the MSP first questioned the appropriateness of compensating constrained-off generators or imports for not producing or contributing to market demand, not only in view of the seeming counter-intuitiveness of such compensation, but also in recognition that constrained-off payments in Ontario entail a shift of financial risk associated with transmission and other constraints from generators to electricity consumers.~~

~~Second, the MSP pointed out that the sum of CMSC payments is "substantially less than the transfer of payment from loads to generators that would have occurred had the market price been determined in a way that reflected the~~

² For instance, as discussed in the Larry Ruff/Charles River Associates report cited below, elimination of constrained-off payments would provide "potentially constrained-off generators strong incentives to submit ever-changing strategic bids that are below but otherwise have little to do with real [short-run marginal costs], making the dispatch in constrained-off regions unstable and inefficient and, if there is enough generation using such bid-down strategies across Ontario, depressing the [uniform market clearing price] - in the short run" p.17. Ruff also suggests that as a result of constraining participants on or off without compensation or hedging options, some generation may withdraw from the market: notably, "it may not be the highest-cost capacity that is withdrawn/retired, because the bidding down-game game will result in unstable, arbitrary and inefficient constrained-off decisions" p.17.

~~amount of energy actually available and deliverable to the market”³. While this observation can arguably pertain to both constrained-on and constrained-off payments (i.e. both “artificially” lead to a lower average MCP than would have occurred had the constrained-on units been able to set MCP), the point the MSP goes on to draw from this observation relates specifically to constrained-off payments: namely, “it seems rather strange that the market price [i.e. as per the unconstrained sequence] should be determined by offers that are known not to be available to the market”⁴. Accordingly, the MSP questioned whether the use of such “fictional” offers of energy (i.e. those that are known not to be available to the market) to “push the MCP further below the marginal cost of energy” contributes to overall market efficiency.~~

~~Third, the MSP posited that constrained-off payments reduce the financial consequences of ill-sited generation assets, and further discourage those same generators from advocating or paying for transmission expansions. Finally, the Panel questioned the appropriateness of issuing constrained-off payments to participants when their own actions and decisions create differences between the market schedule and dispatch schedule (e.g. due to deviations from dispatch instructions) or to protect participants from risks inherent to their technology (e.g. ramp rates, need for filtered dispatch instructions), or electric system institutions (e.g. operator constrained-off imports).~~

~~The likely result of eliminating constrained-off payments would be higher wholesale electricity prices, to the extent that certain units would offer less frequently and at higher prices, since they would have to recover their costs over a more limited period of operation.~~

Participant Impact

[To be developed]

IMO Processes and Procedures Impact

~~Changes~~ As mentioned above, changes to the Ontario’s uniform pricing and CMSC approach would need to be addressed within a larger discussion of market design fundamentals (among other considerations). Any changes in this regard would likely require modifications to, the Dispatch Scheduling Optimizer, Commercial Reconciliation System, Market Rules, and would present major impacts on the responsibilities of a variety of the IMO’s business units.

³ Market Surveillance Panel Discussion Paper: *Congestion Management Settlement Credits (CMSC) in the IMO Administered Electricity Market*. February, 2003. p.11

⁴ Ibid., p.12

Related Issues

- 002: Publishing Nodal Price Data
- 004: Use of 12-times Ramp Rate in the Dispatch Unconstrained Algorithm
- 016: Historical Analysis of Nodal Prices
- 022: Pricing Physical Constraints
- 024: Reducing Frequency of Failed Intertie Transactions
- 025: Temporal Optimization in the Real-Time Constrained Sequence but Not in the Real-Time Unconstrained Sequence
- 027: Timing Differences between Unconstrained and Constrained Real-Time Sequences
- 032: Role of Import Offer Guarantee in Certain Hours

Options Considered

[To be developed]

Selected References

Ontario Market Design Committee Discussion Report: *Alternatives for Congestion Pricing LMP and Uniform Pricing Mitigating the Effects of LMP*. March 1997.

http://www.theimo.com/imoweb/historical_devel/mdc/ArchivedDocuments/Ph1/Alternatives%20for%20Congestion%20Pricing.pdf

Market Surveillance Panel: *Monitoring Report on the IMO-Administered Electricity Markets for May to August 2002*

http://www.theimo.com/imoweb/pubs/marketSurv/ms_mspReport_2002oct07.pdf

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http://www.theimo.com/imoweb/pubs/consult/cmssc/cmssc_paper_20030218.pdf

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http://www.theimo.com/imoweb/pubs/marketSurv/ms_CMSC-Consultation_20030703.pdf

[Ruff, Larry. Charles River Associates. *Congestion Management Settlement Credits in Ontario*. December 24, 2003.](#)