## **Comments on Straw Proposal for the Design of Convergence Bidding**

## **Department of Market Monitoring**

### July 24, 2009

#### Background

As noted in comments of the Department of Market Monitoring (DMM) in 2007,<sup>1</sup> DMM believes that convergence bidding offers potential for improved market efficiency under the type of two-settlement energy market being implemented under MRTU. However, we have cautioned that if not carefully designed, convergence bidding may also create the potential for market manipulation through exploiting market design or modeling flaws to the detriment of market efficiency and other participants.

In our November 2007 recommendations, we suggested that implementing convergence bidding at a load aggregation point (LAP) level initially would capture many of the potential benefits of convergence bidding, while limiting the potential adverse effects of convergence bidding at a more granular level. However, we also outlined specific mitigation rules and monitoring requirements necessary to address the potential adverse impacts of nodal convergence in the event that the ISO decides to start out with nodal convergence bidding. We indicated that with these measures in place, it would support the implementation of convergence bidding at a nodal level. As noted in our November 2007 comments, "while [a nodal convergence bidding] design would require extensive enhancements to MRTU software, and may create potential gaming opportunities which necessitate much more significant mitigation and monitoring provisions, there may be additional efficiencies to be gained through a nodal convergence bidding design."

DMM supports the ISO's *Straw Proposal for the Design of Convergence Bidding*, which includes implementation of nodal convergence bidding initially, for several reasons:

- Most importantly, the ISO's Straw Proposal for the Design of Convergence Bidding incorporates at least in principle all of the measures identified by DMM as being important to implement in conjunction with nodal convergence bidding. However, the details of several aspects of these mitigation measures need to be further developed and considered. These include treatment of virtual bids in the pre-Integrated Forward Market (IFM) market power mitigation (MPM) processes, and settlement rules for owners of Congestion Revenue Rights (CRRs) participating in convergence bidding.
- In addition, after three months of experience under the new nodal market design, DMM is encouraged by the performance of this new market design, as well as the progress of the ISO's efforts to identify problems and implement market or operational enhancements to further improve market performance. While further improvements are needed and challenges remain, we are optimistic that significant improvements can be made prior to the

<sup>&</sup>lt;sup>1</sup> Convergence Bidding: Department of Market Monitoring Recommendations, November 2007, Department of Market Monitoring, <u>http://www.caiso.com/1c8f/1c8ff5f46c90.pdf</u>

implementation of convergence bidding. Specifically, prior to MRTU startup, we noted that significant price divergences between day-ahead and real-time prices could result from modeling errors or inconsistencies in the Full Network Model (FNM) used in the IFM, compared to the Real Time Market software and conditions. While nodal convergence bidding may help to resolve some of these divergences, nodal virtual bidding would also tend to "mask" these price divergences and could make it more difficult for the ISO to identify and address the root cause of such price divergences. We believe that it is important for the ISO to continue to identify and address the root cause of such price divergence of such price divergences prior to implementing nodal convergence bidding.

• Finally, we note that the more extended timeline that will be needed for development and testing of nodal convergence bidding also provides greater assurances that additional details and potential unanticipated problems associated with nodal virtual bidding can be identified and mitigated prior to implementation.

The remaining sections of these comments address key provisions of the ISO's straw proposal.

# Position Limits

DMM continues to support the use of position limits upon implementation of nodal virtual bidding. The ISO's straw proposal incorporates our prior recommendations for an initial position limit of 10 percent of the maximum rated generation or load at each node. However, we note that in order to achieve the fundamental objective of position limits, such limits need to be applied by *participant* rather than by Scheduling Coordinator (SC), as described in the straw proposal. Thus, a participant with multiple SC\_IDs would be subject to position limits for the combined total of bids submitted by all of these SC\_IDS. Similarly, entities engaging in virtual bidding should be required to disclose all affiliations with other entities and SCs, in the same manner that the ISO requires such disclosure for entities engaging in the CRR auction. Affiliated entities would then be subject to the position limits for the combined total of bids submitted by all of ensure that this feature was incorporated in the technical requirements that have been developed over the last year by the ISO. In addition, we note that this same aggregation of SC\_IDs (and any affiliated entities) would also be used when applying the settlement rule for CRR holders that engage in convergence bidding at nodes that may increase their payments for CRR holdings.

One new issue arising at the stakeholder meeting was whether or how position limits would be set for trading hubs if virtual bidding at trading hubs was incorporated in the final market design. For the same reason DMM did not view position limits necessary for convergence bidding at a LAP level, we do not believe position limits would be necessary at a trading hub level. Specifically, the amount of physical supply and demand at the nodal and hub level (combined with additional convergence bids) is sufficient to ensure a highly liquid market at this level and make it extremely difficult for any participant to significantly move market prices even in the absence of position limits.

# Local Market Power Mitigation

In our November 2007 recommendations, DMM provided a series of examples illustrating how convergence bidding at a nodal level could be used to undermine the local market power mitigation (LMPM) process, and identified two basic options for mitigating this:

- <u>Option 1</u>: In this option, mitigation would be based on ISO forecasted demand. This option closely parallels the current market design. Mitigation would exclude virtual bids altogether. The benefit of this approach is that it will continue to base mitigation solely on forecasted load and bid-in supply and thus the mitigation would not be impacted by the potential circumvention of LMPM by virtual demand bids, as described in Attachment A, Example 1A of DMM's November 2007 white paper.
- <u>Option 2</u>: In the second option, mitigation would be performed using virtual bids and bidin load. This option would be consistent with the Federal Energy Regulatory Commission (FERC) directive to include bid-in demand in the IFM, and is similar to the approach used by the Eastern ISOs.

We find that both of these options appear to be viable and the choice between them will largely depend on the underlying market design, implementation issues, and broader considerations beyond convergence bidding. If the ISO implements the use of bid-in demand in the pre-IFM, we recommend that Option 2 be implemented because it provides for greater checks against possible circumvention of the LMPM process.

The ISO's straw proposal calls for this second option to be implemented. In addition, the straw proposal calls for use of all bids in the IFM market, in addition to only those bids clearing the IFM. We support this approach, but note that thorough testing of these modifications in the current market design should be performed prior to implementation of convergence bidding in order to identify any potential performance issues or unintended consequences that may result under this approach.

## Settlement Rule for Congestion Revenue Rights

As discussed above, under nodal virtual bidding, DMM believes it would be important to implement a settlement rule that automatically limits revenues from CRRs that have been increased by the strategic use of convergence bids. While the settlement rule used by PJM Interconnection (PJM) and ISO New England (ISO-NE) will mitigate much of the concern about use of virtual bids to mitigate gaming of CRRs, this rule is not a "silver bullet."

We are currently seeking additional information from PJM to clarify the details of how this market rule is implemented, and is developing some potential variations of this approach for consideration. We plan to issue a more detailed whitepaper clarifying the details of the rule in effect at PJM and potential modifications to this approach in August. The two basic modifications to the approach employed by PJM under consideration are as follows:

- While the PJM settlement rule is applied based on the shift factor of the nodes at which a CRR holder has virtual bids accepted (relative to a constraint contributing to the value of a CRR that hour), another approach may be to base the trigger for this CRR settlement rule on the estimated contribution of the CRR holder's virtual bids to the flows on the congested constraints (e.g., as a percent of the total flow on the constraint). This approach would allow the impact of multiple virtual bids on flows to be assessed simultaneously.
- Another potential variation of the PJM approach under consideration is to explicitly consider the contribution of congestion on each constraint to the total value of the participants' CRR each hour (in dollars). We think this approach may be a more accurate way of assessing the impact of virtual bidding on CRR payments in cases when congestion on multiple constraints contributes to the value of a CRR during an hour.

## Uninstructed Deviation Penalties

The ISO's straw proposal indicates that if uninstructed deviations are determined to be a problem adversely affecting the market and system reliability it may be necessary to seek authority to activate the Uninstructed Deviation Penalty (UDP) software functionality and provisions of the ISO tariff.

DMM notes that while the ISO may be able activate the UDP provisions of the ISO tariff relatively quickly, our understanding is that, as a practical matter, significant UDP rule modifications and software enhancements would be necessary to actually implement UDP. Consequently, we think it is unrealistic to rely on UDP as an option for quickly mitigating any problems with convergence bidding that could occur due to uninstructed deviations.

# Limitation or Suspension of Convergence Bidding

In its November 2007 recommendations on convergence bidding, DMM suggested that the ISO should have authority to quickly respond to any problems that may occur under nodal virtual bidding by limiting or suspending virtual bidding by participants individually or collectively. While the ISO's straw proposal includes this basic recommendation, additional details need to be developed for the process or circumstances under which the CAISO would exercise this authority. We look forward to comments or suggestions from stakeholders on how the details of such authority might be structured.

In our November 2007 recommendations, we proposed that in the event that virtual bidding, either in general or by any particular participant or group of participants, was found to be detrimentally affecting grid or market operations, contributing to an unwarranted divergence in prices in the IFM and Real Time Market, or otherwise distorting competitive market outcomes, the ISO would have the authority to suspend virtual bidding in general or suspend or limit individual market participants' ability to submit virtual bids.

In the event the ISO suspends or limits virtual bidding, either in general or for an individual market participant or group thereof, the ISO would file supporting documentation with the FERC within ten business days of the suspension. The suspension or limitation would remain in effect for 90 calendar days unless the FERC directs otherwise.

With this approach, the ISO would be able to act promptly to limit or suspend any virtual bidding activity that was creating significant detrimental impacts. Within ten days, the ISO would develop and file more detailed supporting documentation of the specific behavior and impacts leading to the limitation or suspension. This limitation would expire within ninety days or sooner unless expanded by FERC. Within this 90 day period, FERC could consider documentation provided by the ISO as well as any information submitted by market participants subject to the limitations or suspension.

We look forward to comments or suggestions from stakeholders on how the details of such authority might be structured.