Comments on Convergence Bidding of Western Power Trading Forum, the Independent Energy Producers, San Diego Gas and Electric, and EPIC Merchant Energy

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Introduction

Western Power Trading Forum (WPTF), on behalf of its more than 60 member organizations, The Independent Energy Producers (IEP), San Diego Gas and Electric (SDG&E) and EPIC Merchant Energy, hereafter referred to as “The Parties”, welcome this opportunity to offer the CAISO some additional thoughts on convergence bidding.

At its most fundamental level, convergence bidding is a self-regulating mechanism that drives price convergence between Day-Ahead and Real-Time wholesale electricity markets. It is employed by every organized wholesale electricity market in the US where a two settlement system is in use\(^1\). ERCOT has included convergence bidding in the Texas Nodal market design scheduled for implementation in December, 2008. The CAISO has made a commitment to implement convergence bidding no later than 12 months after the MRTU implementation date.

Convergence bidding provides a number of important benefits for retail and wholesale market participants:

- It makes California’s wholesale electricity markets a more attractive place to do business, thereby inviting more participation and improving the depth and liquidity of the CAISO’s Day-Ahead and Real-Time markets.

- Market participants gain better control over their congestion costs and their exposure to Day-Ahead and Real-Time prices.

- Parties can more easily hedge the near-term risks associated with load forecast uncertainty, generator forced outages, and transmission outages.

- It discourages strategies that implicitly manipulate the relationship between Day-Ahead and Real-Time prices. Convergence bidding will be far more effective at limiting both underscheduling by LSEs and any possible countervailing actions by suppliers than activity rules and financial penalties.

- It provides a simple, explicit mechanism to facilitate price convergence, thereby increasing confidence in both Real-Time and Day-Ahead prices and largely rendering moot any questions about which one is a more reliable reference price.

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1 The PJM RTO, New York ISO, ISO New England and Midwest ISO all provide for convergence bidding, also sometimes referred to as Virtual Bidding.
• Even without special settlement or activity rules, when implemented at the nodal level it severely limits a market participant’s ability to reap windfall profits by leveraging positions in another ISO product market (e.g. CRRs). It does so by allowing Market participants to step in instantly with offsetting trades when prices move contrary to their expectations or when Day-Ahead and Real-Time prices systematically diverge as they would have to in order for a market participant to leverage its position in CRRs or a Seller’s Choice contract.

Since the CAISO is now committed to implementing convergence bidding as part of MRTU, we focus our comments on the important design and implementation details that still need to be agreed upon.

**LAP-level vs Nodal-level Bidding**

This is perhaps the most controversial design element of the CAISO’s convergence bidding implementation, and for many market participants it is the most important one.

The CAISO has a dual responsibility to operate a reliable bulk power grid and also operate fair, transparent, efficient, competitive wholesale electricity markets. Nodal-level convergence bidding provides the CAISO and market participants with an elegant, simple tool to achieve both objectives.

The large majority of market participants - generators, Metered Subsystems that elect net CAISO settlement, merchant energy firms, trading firms that provide risk management services, participating loads - and their sizable share of all wholesale trading will benefit from nodal-level convergence bidding because their exposures are either solely to nodal prices or heavily weighted toward nodal prices. Only the loads of the three IOUs, ESPs and any Metered Subsystems (MSS) that elect gross CAISO settlement can realistically benefit from LAP-level convergence bidding.

Market participants that *must* settle at nodal prices *can not* use LAP prices to hedge effectively. Even if nodal and LAP prices were highly correlated, and they are not, the cost and difficulty of using LAP prices to hedge nodal price exposures make doing so impractical.

There are specific benefits to nodal-level convergence bidding that are not available with LAP-level convergence bidding. Unique benefits of nodal-level convergence bidding include the following.

- Effective hedges become available to all market participants:
  - With LAP-level convergence bidding, *only* bundled customers can cleanly hedge their risk. Granular convergence bidding allows generators, suppliers, and others to hedge risks “cleanly” (no issues with correlation between a LAP price and its component nodal prices)
  - Loads can choose the level of their Day-Ahead purchases more selectively (and thereby protect themselves from paying too much)
Intra-LAP (Intra-zonal) congestion prices become tradable and this supports a range of tailored products for all market participants. The ability to trade Intra-LAP congestion is a key enabler for full retail access at the nodal level.

- Granular bidding drives comprehensive price convergence, which deters undesirable behavior at individual nodes
  - A robust market limits incentives to withhold supply Day-Ahead, and it also curbs incentives to under-schedule load at scheduling points other than LAPs
  - More liquidity leads to less volatility and more activity leads more efficient price discovery

- Attempts to exercise market power or manipulate prices are more readily contained by the market participants themselves. Market participants who engage in convergence bidding either improve market efficiency or lose money (and exit). Market participants also quickly spot attempts to exercise market power or manipulate nodal prices and use virtual bids to compete them away.

Nodal-level convergence bidding provides market participants with an important tool to identify and take advantage of the lowest cost sources for producing and delivering energy. DC Energy examined a specific case in New York City where the absence of nodal-level convergence bidding cost consumers more than $10 million during a 15 week period between mid-September and the end of December, 2005. In this specific case, which was also presented at the August 10th MSC meeting, Real-Time prices in the Astoria load pocket were on average $6/MWh below the average Day-Ahead price for that same interval even though prices for the New York City zone were almost identical. Because this all took place within a subset of the New York City zone, LAP-level convergence bidding was not able to drive the nodal-level prices at Astoria together, and the majority of load was unable to realize the benefits of the additional supply in the Day-Ahead market.

Some parties have voiced concerns about the potential for exercise of market power at nodes with little competition if nodal-level convergence bidding is allowed. This concern is unfounded for several reasons.

- In today’s world market power is currently concentrated in the hands of market participants who control physical load and generation at individual nodes. These parties will be uniquely positioned to exercise their market power if a LAP-level structure is implemented. Thus, nodal convergence bidding can only serve to reduce market power.2
- Nodal-level convergence bidding will stimulate trading that adds liquidity and depth at nodes where there are disparities between Day-Ahead and Real-time prices, which has the beneficial effect of increasing competition at those nodes.

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2 Our review of the DMM’s August 10, 2007 paper suggests that concerns about potential exercise of market power depend on the ability to control physical assets (load and/or generation) and that these concerns have nothing to do with convergence bidding. In their answers to questions at the joint MSC/CAISO August meeting, DMM generally agreed. With respect to the desired level of granularity, the key point at issue is whether the CAISO wants to tacitly encourage implicit convergence bidding at the nodal level, which will happen if LAP-level convergence bidding is implemented, or to implement explicit nodal convergence bidding and thereby ensure that attempts to exercise market power are quickly defeated.
• Nodal-level convergence bidding provides market participants with information and tools they can use to protect themselves from price manipulation where they are exposed to nodal prices.

The CAISO correctly points out that LAP-level convergence bidding would minimize any incentives for LSEs to under-schedule their load and concludes that achieving this goal is sufficient. LAP-level convergence bidding certainly solves a potential reliability problem for the CAISO but it does nothing to address other equally important commercial issues for the majority of market participants and their significant share of all trading volume in the CAISO’s markets. The CAISO and MSC have also pointed out that nodal-level convergence bidding complicates the Seller’s Choice contracts that are a large part of the DWR portfolio that was assembled during the Energy Crisis. The discussion has centered on two specific concerns; one pertaining to the impact convergence bids may have on congestion costs and one regarding a virtual bidder’s ability to increase scheduled output at a generating node by using one or more virtual demand bids. The first of these issues has already been discussed extensively and can easily be avoided by using proven CRR settlement rules. Regarding the second, DMM staff acknowledged during the August 10th MSC meeting that this would not be an issue since physical trades at generator nodes are already limited by the aggregate Pmax values for generators at those nodes and in any event, the scheduled output of generators at nodes where seller’s choice contracts are delivered are already subject to certain limitations.

The CAISO suggests in its most recent paper that LAP-level bids would enhance market liquidity. That would certainly be the case as the LSEs would be able to do explicitly what they are currently prohibited from doing implicitly, which is to raise or lower their Real-Time price exposure in the Day-Ahead time frame. However, nodal-level convergence bidding would attract even more liquidity because it would appeal to the much broad group of market participants with significant trading volumes at individual nodes that cannot make effective use of LAP-level convergence bidding.

The CAISO recommends taking a “cautious” approach with respect to convergence bidding, arguing that “…it would be highly useful to observe well-functioning performance of markets with LMP operating in California…”. ISO New England, PJM and the MISO all operate with nodal-level convergence bidding today and report no problems. The PJM and New York ISO market monitors are outspoken proponents of nodal-level convergence bidding. In the New York ISO, which has eleven zones and is the sole ISO market with LAP-level (zonal) convergence bidding, the market monitor has repeatedly urged a nodal-level implementation to address price divergence in the highly constrained New York City area.5

3 The most recent and explicit presentation of these issues was offered verbally by the CAISO DMM staff during a joint Stakeholder/MSC session.
Finally, the CAISO states its concerns about the possibility that nodal-level convergence bidding could be used to defeat MRTU’s market power mitigation measures. If MRTU’s market power mitigation measures are a local adaptation of similar measures implemented by PJM and PJM has successfully operated with nodal-level convergence bidding, it is not clear why the CAISO should have any concerns at all unless the market power mitigation measures themselves are flawed. Even if mitigation measures for the Day-Ahead market can be defeated by nodal-level convergence bidding, mitigation measures for Real-Time cannot be defeated in the same way. As soon as Day-Ahead prices diverge from Real-Time prices, nodal-level convergence bidding will drive them back together. If there is a game to be played here, like the CRR strategy it is risky, very short-lived at best, and unrelated to the presence or absence of convergence bidding.

**Position Limits**

In response to the CAISO’s and the MSC’s suggestions regarding position limits, our view is that they are not necessary and that they have no objective design driver. In other words, any limits that are imposed are arbitrary. The self-regulating nature of convergence bidding makes attempts to “corner the market” extraordinarily risky, which may explain why it has not occurred in the eastern markets that have extensive experience with nodal level bidding. Market participants who profitably engage in convergence bidding help the market by providing efficient prices for load and converging Day-Ahead and Real-Time prices. In spite of perceptions to the contrary, these firms are typically risk-averse and tend to limit their potential losses even if it means limiting potential gains. Moreover, to the extent one market participant takes large virtual positions in order to drive Day-Ahead prices to one extreme or the other (and risk losing large sums of money if their price expectations turn out wrong), other market participants stand ready to step in with countervailing trades that drive Day-Ahead and Real-Time prices together again.

Strictly speaking, position limits have potentially adverse side-effects that will: a) impede the ability of asset-based market participants to hedge, and b) limit the ability of all market participants who engage in convergence bidding to maximize the benefits. For these reasons, they will be counterproductive if set too low.

Credit requirements on convergence bidders will also serve to limit any potential gaming opportunities because credit costs are significant. This means convergence bidding participants have a strong financial incentive to avoid tying up too much capital in a single trading position that could easily lose large amounts of money.

**Cost Allocation**

The ISO posed questions in its comment template regarding Cost Allocation. Cost causation is an acceptable way to determine how certain of the CAISO’s costs are allocated to virtual transactions. However if for example, virtual transactions are to bear certain IFM costs, they should similarly receive credit for cost reductions they bring to the RUC process when their actions lead to more cost-effective commitment decisions in the IFM.

Similarly, since ancillary services are procured based on the CAISO load forecast, virtual bids don’t increase the CAISO’s requirement for ancillary service so they don’t increase ancillary services costs. Therefore, virtual transactions should not be assessed any ancillary charges.

**Number of Load Aggregation Points (LAPs)**

There are some advantages to increasing the number of LAPs, but only if retail customers actually pay the prices at these LAPs. However there are several inherent problems with linking more granular convergence bidding to an increase in the number of LAPs:

- Unless the number of LAPS is expanded to include every node in the network, LAP-level convergence bidding doesn’t allow the majority of market participants and the majority of all trading volumes to take advantage of convergence bidding.

- Any increase in the number of LAPs will attract intense opposition from politicians who wish to “protect” consumers in LAPs that are likely to have high prices.

- Even if political objections did not materialize, the CAISO would still have to define a whole new series of considerations like providing CRRs that allow market participants to easily hedge congestion risks between this larger set of LAPs, which will take time to work its way through the stakeholder process.

For these reasons, policies that link expanding the number of LAPs with adoption of granular convergence bidding are inappropriate and counter-productive. The two issues should remain decoupled to avoid creating an impression that proposals to expand the number of LAPs are simply a vehicle for further delaying nodal-level convergence bidding.

**Conclusion**

The Parties appreciate this opportunity to share their views on the CAISO’s proposed design for convergence bidding. We urge the CAISO staff to recommend and the CAISO Governing Board to approve a nodal-level implementation of convergence bidding. We stand ready to meet with the CAISO staff, the CAISO Governing Board and other stakeholders to clear up any misconceptions and address any lingering concerns they may have about nodal-level convergence bidding.