

**MEETING MINUTES OF THE CALIFORNIA INDEPENDENT SYSTEM
OPERATOR (CAISO) MARKET SURVEILLANCE COMMITTEE**

Meeting Date: February 8, 2008, 9:00 a.m.

Held at: Offices of the CAISO
North and South Lake Tahoe Conference Room
151 Blue Ravine Road
Folsom, California 95630

A meeting of the Market Surveillance Committee (MSC) was held at the time and place referenced above, pursuant to the Public Notice (final released February 5, 2008), posted on the CAISO Web site at <http://www.caiso.com/pubinfo/BOG/documents/market/msc/>.

COMMITTEE MEMBERS ATTENDING

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|----------------|--------------------|
| Frank Wolak | Committee Chairman |
| James Bushnell | Committee Member |
| Benjamin Hobbs | Committee Member |
| Absences: | None |

GENERAL SESSION

Chairman Frank Wolak officially called the meeting to order at approximately 9:00 a.m. with all MSC committee members in attendance in person.

Chairman Wolak also advised the meeting was being Web cast to participants, as had been noted on the Public Notice.

The meeting then proceeded with a discussion of various MRTU Release 1A market design issues, as follows:

1. Cost Allocation for Convergence Bids

The MSC Committee members and stakeholders discussed a Revised Proposal for Cost Allocation for Convergence Bids. It was noted that various factors must be balanced to determine the appropriate charges to apply to convergence bids. In this regard, setting these charges too high could lead to systematic differences between the day-ahead and real-time prices. This is because market participants will only submit convergence bids in order to capture the difference between the day-ahead and real-time prices when they expect to earn more from this transaction than the costs they would incur to complete it.

Alternatively, setting the charges for accepted convergence bids too low could result in a situation where the CAISO does not receive sufficient transaction revenues from the market participants submitting convergence bids to cover the costs that the CAISO incurs in processing those convergence bids and managing real-time system operation.

In addition, MSC Committee members and stakeholders discussed was how to determine the magnitude of the market operation and system reliability costs associated with convergence bids. This became a major topic of conversation. One MSC member argued that, in order to maximize the market efficiency benefits of convergence bidding, the CAISO should limit the magnitude of costs allocated to convergence bids to those that can be causally attributed to the volume of convergence bids.

2. Relaxing the DEC Bidding Rule on Final Day Ahead Schedules.

An MRTU rule currently in place requires that decremental energy bids submitted to the hour-ahead scheduling procedure (HASP) and real-time market must be above the bid curve submitted to the day-ahead market. The rule is intended to prevent a supplier from over-scheduling in the day-ahead market and then selling this energy back in the HASP or real-time market at a substantially lower price.

In a discussion of the profitability of this strategy, several MSC members expressed the concern that the rule might cause suppliers to not submit DEC bids, resulting in a thinning of the market for decremental energy, which would increase the likelihood that the CAISO would need to accept decremental energy at the offer floor if it needs to reduce schedules in the HASP or real-time market. These members urged the CAISO not to apply the “DEC bidding rule” at the onset of MRTU, but, rather, to observe initial market activity to see if the behavior described above materialized, which would make this rule on DEC bids necessary.

3. Pricing Logic for Constrained Output Generation (COG).

Next, MSC Member Ben Hobbs gave a presentation regarding Constrained-Output Generation (COG) units. Mr. Hobbs explained that the CAISO is reevaluating its current rules for how to model certain units known as constrained-output generation (COG) units in the real-time market. The change would characterize the units as “flexible” and allow them to set the real-time market-clearing price. Hobbs’ presentation was intended to provide guidance for determining conditions under which the CAISO should model COG units as flexible and allow them to set the price in the real-time market.

In his presentation, Mr. Hobbs first explained that MRTU will model all generation units as flexible in the day-ahead scheduling process. This means that units which can only be run at full capacity or turned-off, such as combustion turbine units, will be modeled as flexible, in the sense that the day-ahead market can accept any amount of output from the unit between zero and its capacity.

In his presentation, Mr. Hobbs argued that, to the extent that a market has a significant amount of capacity in COG units and dispatches a significant number of units within an hour, it makes more sense to allow these units to set the market-clearing price. To the extent that a market has very few COG units, and these units are infrequently dispatched in real-time, as is the case in California, it is unlikely that the cost of the software changes needed to allow COG units to set the price in the real-time market is justified by the expected benefits.

4. Demand Response Functionality in Market Release 1A

Jim Price, from the CAISO Department of Market and Product Development, gave a presentation on working group and stakeholder activity on the protocols for final demand to participate actively in the CAISO's markets. In his presentation, he clarified the roles of participating and non-participating loads. In this regard, he explained that Participating Loads can offer into the CAISO's ancillary services markets and the CAISO's real-time energy market. In contrast, a Non-participating Load can simply reduce or increase their demand, but cannot offer into the ancillary services or real-time energy market. These entities can submit a price-responsive bid into the day-ahead energy market. Price reviewed the technical requirements that a customer must satisfy to qualify as a Participating Load. The central message of Price's presentation was that each technical requirement for Participating Loads has a parallel technical requirement for a generation unit owner.

Several MSC members commented that the CAISO should do all it can to set these technical requirements to maximize the amount of participating load, without compromising the ability of these loads to provide the ancillary services and real-time "nega-watts" that they are certified as able to provide.

5. Scarcity Pricing: Interaction with Demand Response and Virtual Bidding

Next, Frank Wolak gave a presentation on the design of a scarcity-pricing mechanism. Wolak's presentation discussed a mechanism that does not interfere with:

- i) the development of active participation of final demand in the wholesale market; or
- ii) market-efficiency-enhancing convergence bidding.

Wolak clarified the distinction between economic scarcity-pricing and administrative scarcity-pricing. In this regard, any time the willingness of the final demand to curtail its purchases sets the market-clearing price, there is economic scarcity pricing. In contrast, under administrative scarcity pricing, the CAISO would set a price when there are "true scarcity" conditions in the California ISO control area. Wolak emphasized that true scarcity conditions only exist when the CAISO's demand for energy plus its demand for reserves exceeds the amount of available generation capacity. By this definition, scarcity conditions can occur in both the day-ahead and real-time market. However, because the CAISO clears the day-ahead market relative to bid-in load, rather than forecast load, and there

are opportunities for convergence bidding, scarcity conditions are unlikely to arise in the day-ahead market.

During those periods when real-time scarcity conditions are likely to occur, less demand is bid into the day-ahead market, or convergence bids are submitted to accomplish the same objective. Wolak noted that scarcity conditions, will occur, if at all, only in the real-time market and will take the form of the CAISO reducing the amount of operating reserves it holds to ensure the real-time energy demand can be met. Accordingly, a properly functioning convergence bidding process should insure that economic, and not administrative, scarcity conditions occur in the day-ahead market. Wolak also noted that, in order for MRTU to operate in this manner, the California Public Utilities Commission (CPUC) and the CAISO must work together to increase the amount of load that can actively participate in the CAISO's ancillary services and energy markets and to eliminate the requirement that demand response resources can only be called if the CAISO declares a system emergency (i.e. a Stage 1 or Stage 2 emergency). Wolak further emphasized that, if demand response resources were triggered based on market prices and during non-emergency conditions, this would allow the CAISO to set real-time prices that are consistent with real-time system conditions and reduce the need to declare system emergencies.

Executive Session

No Executive Session was held.

Adjournment

Whereupon, Chairman Wolak adjourned the MSC meeting at approximately 5:10 pm.

The MSC has approved these Minutes of the February 8, 2008 MSC Meeting at the following MSC Meeting:

Date of approval: Thursday, March 20, 2008