

# Memorandum

**To:** ISO Board of Governors  
**From:** Benjamin F. Hobbs, Member, ISO Market Surveillance Committee  
**Date:** May 11, 2011  
**Re:** *MSC Activities from March 8, 2011 to April 29, 2011*

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*This memorandum does not require Board action.*

The Market Surveillance Committee dealt with several issues during the past two months. The first is proposed changes to the current local market power mitigation procedures. The second topic is the predictably lower hour-ahead versus real-time prices that contribute to uplift charges allocated to load. The third concerns modifications of the California Independent System Operator Corporation's participating intermittent resource program and other market rules related to renewables integration. The final topic is the recent Federal Energy Regulatory Commission order on compensation to demand response resources. The MSC adopted a formal opinion on this topic at its April 29, 2011 meeting.

## *Local market power mitigation*

In preparation for FERC-mandated changes to incorporate demand bids in local market power mitigation procedures, MSC members have been consulted by ISO staff regarding two proposals:

- (1) To trigger energy bid mitigation in day-ahead, hour-ahead scheduling process, and real-time markets on the presence of a positive local market power component contributed by noncompetitive paths from a single market run. This would replace the present two step procedure which includes separate runs with competitive constraints and all-constraints enforced.
- (2) To dynamically identify noncompetitive paths based on daily and hourly market conditions, rather than the current approach of designating path competitiveness based on quarterly studies.

In the April 29, 2011 MSC meeting, the latest versions of the proposals were reviewed. Individual MSC members made recommendations concerning two issues. One recommendation was for testing of the ultimate impacts of the changes upon prices. Such testing is desirable because the relationship between path designation and mitigation decisions and, ultimately,

energy prices is complex. However, such tests are constrained by the availability of software for simulating market outcomes, especially in the hour-ahead and real-time markets. The other recommendation concerned definition of the swing bus(es) in the calculation of the noncompetitive path component of locational marginal prices, as this definition affects the magnitude and even sign of that component at generation buses. The MSC advised that the location of the bus(es) would ideally be where shift factors relative to noncompetitive prices were smallest in magnitude.

The MSC plans to issue a formal opinion on the local market power mitigation proposals prior to the June 2011 Board meeting.

### ***Price divergence and convergence bidding***

During recent months, prices in the hour-ahead market used to settle imports and exports have often been significantly lower than prices during the same hour in the real-time market. This results in uplift charges that are currently assigned to loads. The first source of uplift is caused by the ISO market software selling energy (via exports) at a low price in the hour-ahead market that often requires additional energy to be purchased in the real-time market at a significantly higher price. The second is the result of actions by convergence bidders to profit from lower prices in the hour-ahead market versus the real-time market by making two simultaneous virtual transactions in the day-ahead market: a virtual demand purchase at locations inside the ISO control area and a virtual supply sale into the ISO control area from an intertie. This has the net effect of buying virtual energy in the hour-ahead market (settling the day-ahead virtual supply) and selling it in the real-time market (settling the day-ahead virtual demand). The magnitude of the uplift has been at least \$10 million per month in 9 of the 12 months from April 2010 to March 2011.

At the April 29, 2011 meeting, ISO staff, stakeholders, and MSC members discussed alternatives for reducing the magnitude of this uplift. Ideally, market forces would result in hour-ahead and real-time energy prices converging, but there are fundamental limitations in the scope of the hour-ahead market that make that difficult or impossible. Staff presented a proposal involving adjustments in settlements to individual scheduling coordinators if they have matching virtual supply and demand bids. This would address the major source of uplift in the past few months, but could possibly be circumvented with physical supply and demand bid strategies or coordination between separate convergence bidders. One possibility discussed included settling day-ahead intertie supply bids using the real-time price rather than the hour-ahead price. A MSC member pointed out that this could be justified since the source of power required to replace the virtual supply would likely be acquired in the real-time market and paid the real-time price.

The MSC anticipates issuing a formal opinion on proposals for changing the real-time energy imbalance offset system in the near future.

### ***Reforms to energy market and participating intermittent resource program rules and procedures***

At previous MSC meetings, the MSC has discussed the participating intermittent resource program and reductions in the energy bid floor, and other issues relating to renewable

integration. These topics were discussed at the March 18, 2011 MSC meeting, when the MSC reviewed the ISO's "Revised Straw Proposal on Reforms to Energy Market and PIRP Rules and Procedures." The relationship of the bid floor to renewable energy tax benefits and renewable energy credits was reviewed. The desirability of reforms to renewable energy legislation in order to remove the motivation for negative bids was discussed. A MSC member presented a numerical example of how acceptance of negative bids for renewable producers when energy prices are negative can result in higher costs to consumers as well as higher air pollution emissions.

A formal MSC opinion on these topics is planned.

### ***FERC Order 745, demand response payments***

On March 11, 2011, the Federal Energy Regulatory Commission issued Order 745 on "Demand Response Compensation in Organized Wholesale Energy Markets." The MSC supports the general goal of full participation by the demand-side in power markets because of the large potential for economic, reliability, and environmental benefits and market power mitigation that could result. However, the MSC reviewed this Order and identified several issues of concern, including:

- Incentives for inefficient deployment of demand response and distributed generation,
- A benefit-cost test for demand response that focuses on market benefits to a particular set of market parties rather than overall market efficiency
- Restrictions on the ability of the California ISO and other ISOs to implement minimum bid standards and some other means to ensure that consumers only bear the cost of paying for actual demand reductions.

A formal opinion supporting the request of the ISO for rehearing of the Order, and asking that the FERC reconsider elements of its order and reverse some of the mandates, was adopted unanimously at the April 29, 2011 MSC meeting. A copy of the opinion is included with this memo as Appendix A. A more extensive opinion providing more detail on the MSC's concerns is in preparation.

### ***Changes in MSC membership***

After more than a decade as chair of the MSC, Professor Frank Wolak stepped down at the end of March 2011. At the March 18, 2011 MSC meeting, which was Dr. Wolak's final meeting, the MSC approved a resolution thanking him for his crucial leadership through the period of the crisis and subsequent design and implementation of the ISO's new nodal market design. Stakeholders and staff also enthusiastically (and musically) expressed their appreciation for his service.

In April 2011, the MSC's existing members (Professors Jim Bushnell and Benjamin Hobbs) were joined by two new appointees: Scott Harvey of FTI Consultants and Steven Stoff, a private consultant based in Berkeley, CA. As President and CEO Yakout Mansour described in his Dec. 7, 2010 memo to the Board of Governors, both bring valuable expertise in wholesale power

market design to the MSC. Dr. Harvey has extensive experience with market design questions in the eastern ISO markets, and has been assisting the ISO since 2004 with design and implementation of the market redesign and technology upgrade. Prior to joining FTI, he was a Managing Director at LECG, and was previously a consultant at Putnam, Hayes, and Bartlett, Inc., and an economist at the Federal Trade Commission. Dr. Stoft has wide consulting experience with the eastern ISOs and California, and has earned international recognition for his text book on *Power System Economics: Designing Markets for Electricity*. He has also worked on power market issues at FERC and the University of California, Berkeley.