

Memorandum

To: ISO Board of Governors
From: Keith Casey, Director Market Monitoring
Date: July 9, 2007
Re: *Market Monitoring Report*

This is a status report only. No Board action is required.

Executive Summary

This month's Market Monitoring Report provides a brief update on three key issues:

Interim Load Scheduling Charge under MRTU – As described in a separate memo to the Board, the CAISO is proposing a potential Interim Load Scheduling Charge under MRTU to comply with a FERC directive to develop and file interim measures to discourage uneconomic under-scheduling by Load Serving Entities (LSEs). DMM is generally supportive of the CAISO proposal and provides some specific comments and recommendations.

Initial Assessment of Amendment 72 Modifications – On January 24, 2007, the Board approved certain proposed modifications to the day-ahead load scheduling requirements initially established under CAISO Tariff Amendment 72. On April 24, 2007, FERC issued an order accepting most of these changes, including the change to lower the scheduling requirement in off-peak hours from 95 to 75 percent of forecasted load. This memo provides an initial assessment of the impact these changes have had on load scheduling practices and on Real Time Market performance. The key findings are favorable in that the reduced scheduling requirement for off-peak hours appears to have reduced the need to reduce generation schedules in real-time (dispatch decremental energy). Additionally, the 75 percent requirement has not resulted in an over-reliance on the Real Time Market in off-peak hours, which was an identified concern with this change.

Implementation of Penalties for Outage Reporting Violations – On July 1, DMM began enforcing penalties for non-compliance with the requirements in the CAISO tariff for reporting generating unit forced outages. Under these tariff provisions, forced generation outages must initially be reported to the CAISO within 30 minutes and generators must also provide an explanation of the cause of forced outages within two working days. This memo provides a brief overview of these new penalty provisions and the various stakeholder outreach and communications that the CAISO and DMM undertook prior to July 1.

Each of these three issues is discussed in greater detail below.

Summary of Key Issues

1. MRTU Interim Load Scheduling Charge

As described in a separate memo to the Board, the CAISO is proposing to establish a potential Interim Load Scheduling Charge under MRTU to comply with a FERC directive requiring the CAISO to develop and file interim measures to discourage uneconomic under-scheduling by Load Serving Entities (LSEs) in the Day Ahead Market.¹ These provisions would remain in effect until implementation of Convergence Bidding. The CAISO proposal includes a very detailed proposal for imposing charges to load that is under-scheduled in the Day Ahead Market. However, these charges would only be applied prospectively in cases where there is a finding by FERC that uneconomic load under-scheduling is significant and problematic. To assist FERC in routinely assessing load scheduling practices, the CAISO is proposing to file informational reports on the volume and frequency of under-scheduling.

FERC directed the CAISO to file interim measures to discourage uneconomic under-scheduling out of concern that without Convergence Bidding, LSEs might try to suppress day-ahead prices by submitting relatively low-priced demand bids in the Day Ahead Market. Although such a strategy could increase the volume and price of load served in the Real Time Market, this type of load bidding strategy could reduce the overall purchase costs of serving load by creating a divergence between day-ahead and real-time prices.² Convergence bidding would allow other market participants to arbitrage away any systemic price differences between these markets. However, until convergence bidding is implemented, FERC is concerned that such behavior could disadvantage sellers in the Day Ahead Market and create inefficient market outcomes.

As an initial matter, DMM does not believe that this type of load bidding strategy is likely to be prevalent under MRTU for a variety of reasons:

1. First and foremost, DMM expects a high percentage of the load served by major LSEs to be covered under fixed priced forward energy contracts, so that these LSEs will have limited incentive to strategically under-schedule to reduce procurement costs because most of their load will not ultimately be subject to CAISO energy prices.
2. Secondly, LSEs will have an incentive to schedule load in the Day Ahead Market in order to more fully capture the hedging benefits of their Congestion Revenue Rights (CRRs), which are settled based on day-ahead prices.
3. Third, various costs associated with meeting any load not scheduled through the Day Ahead Market will be allocated to unscheduled load under MRTU, which will serve to further deter under-scheduling.

In addition, DMM believes that LSEs should have some flexibility to bid in the Day Ahead Market in a manner that allows them to seek to minimize costs, given expectations about the price and availability of energy in the Hour Ahead Scheduling Process (HASP) and Real Time Market. If the portion of load that

¹ See Memorandum from Chuck King, et al, *Re: MRTU Compliance Filing: Proposal for Scheduling Requirement Until Convergence Bidding*, July 9, 2007.

² For example, consider a scenario where 1,000 MW of load cleared at the same competitive price of \$60/MWh, which would result in a total purchase cost of \$60,000. Now assume an LSE was able to split its purchases between the Day Ahead and Real Time Markets such that 600 MW cleared the Day Ahead Market at \$40/MWh and 400 MW cleared the Real Time Market at \$80/MWh. In this case, the total purchase costs would be \$56,000. By submitting low-priced demand bids to the Day Ahead Market, the LSE was able to suppress the Day Ahead Market price and save \$4,000 in its procurement cost.

LSEs must meet through bids clearing the Day Ahead Market is extremely high, the only way LSEs can ensure that such requirements are met is to submit very high “price taking” bids in the Day Ahead Market. This could prevent LSEs from taking advantage of lower priced energy in the HASP or Real Time Market, and could also create the potential for the exercise of market power by suppliers in the Day Ahead Market. It should also be noted that to the extent some under-scheduling in the Day Ahead Market does occur under MRTU, it would not create a reliability problem, since any additional capacity needed to meet expected loads will be committed through the Residual Unit Commitment (RUC) process.

While DMM does not believe the under-scheduling concerns raised by FERC will be a significant issue under MRTU, DMM believes the CAISO’s proposal represents a reasonable approach to complying with the FERC directive. Below are some specific comments and recommendations on the CAISO’s proposal:

- The CAISO’s filing should include a commitment to provide informational reports to FERC with the shortest possible lag once metered load data are available. In practice, since settlement-quality metered load data are not available until 45 days after the operating date, there may be a two month lag before comparisons of load schedules and meter data can be provided. Given this lag, the CAISO should consider providing reports to FERC on a weekly basis as metered data become available in order to provide the most timely data possible.
- The CAISO’s filing should clarify that charges would be incurred on a going forward basis if activated by FERC, rather than being imposed on a retroactive basis. This would help mitigate the uncertainty that participants face in terms of what type of load bidding behavior FERC may deem to constitute persistent and uneconomic load under-scheduling. Presumably, the charge could be triggered by FERC for individual participants or on a market-wide basis.
- In the event that the scheduling charge is triggered, DMM believes the various thresholds and exemptions incorporated in the proposal ensure the provisions would be applicable to relatively large LSEs, and that these LSEs would still retain significant flexibility to bid in the Day Ahead Market in a way that allows them to take advantage of lower priced energy in the HASP or Real Time Market, and mitigate the potential exercise of market power by suppliers in the Day Ahead Market. While the Scheduling Charge creates the potential for adverse consequences under some market conditions, DMM believes this potential is limited given the various thresholds and exemptions incorporated in the proposal.
- Finally, DMM notes that in the event that the Interim Load Scheduling Charge proposed by the CAISO does result in significant inefficiencies or inequities, it should be relatively easy to identify and address these on an expedited basis by modifying the Load Scheduling Charge. For example, any significant unforeseen impacts of the Load Scheduling Charge may be identified based on aggregate market data that are immediately available, as opposed to the more detailed level of data and analysis that may be necessary to find that load bidding of individual SCs is “abusive.” Any such problems may be addressed by making incremental changes to the Load Scheduling Charge such as modifying the various exemptions, threshold and charges initially implemented. For these reasons, DMM believes the CAISO’s proposal represents a reasonable way of ensuring that the CAISO complies with this FERC directive, while mitigating the potential detrimental impacts of the various options for complying with this directive.

2. Amendment 72 Update

On April 24, 2007, FERC issued an order accepting several key changes to the day-ahead load scheduling requirements initially established under Amendment 72. The major change taking effect lowered the scheduling requirement in off-peak hours from 95 to 75 percent of forecasted load. In addition, another change provides an exemption during all hours for *de minimus* deviations below the scheduling requirement (i.e., the minimum of 3 MWh or 5 percent of forecasted demand). The changes were proposed by the CAISO in response to concerns expressed by load-serving entities and to reduce over-scheduling of load, particularly during off-peak hours, which can create operational challenges in real time.

The modifications in day-ahead load scheduling provisions appear to have resulted in a moderate decrease in over-scheduling and a reduced need to routinely decrement energy in the Real Time Market. These impacts have occurred primarily during off-peak hours, as was expected due to the lower 75 percent requirement now in effect for off-peak hours. As shown in Table 1, analysis of scheduling and dispatch data in the weeks before and after these changes went into effect shows a reduction in three key indicators of over-scheduling and excessive energy in real time:

- **Day Ahead Over-scheduling.** The amount of day-ahead over-scheduling – measured by the degree to which day-ahead load schedules exceed the CAISO’s day-ahead load forecast – dropped by an average of about 218 MW during off-peak hours and about 34 MW during peak hours. This represents an average drop in day-ahead over-scheduling of about 1 percent of total CAISO load during off-peak hours.
- **Percent of Hours with Net Decremental Energy Dispatched in Real Time Market.** The percentage of off-peak hours during which the total energy dispatched by the CAISO in the Real Time Market was negative – indicating a net dispatch of decremental energy (i.e., a net dispatch that requires generation to operate at levels below what was originally scheduled) – dropped from 82 percent to 58 percent of hours since the lower 75 percent scheduling requirement has been in effect for off-peak hours. Meanwhile, the percent of peak hours with a net decremental energy dispatch in the Real Time Market has dropped only slightly – from 78 percent to 75 percent of hours.
- **Average Net Energy Dispatched in Real Time Market.** In the CAISO’s Real Time Energy Market, the CAISO dispatched an average of 409 MW of net decremental energy during off-peak hours before the changes, but dispatched an average of only 22 MW of net decremental energy since the modifications. During peak hours, the average amount of real-time energy dispatched dropped from 462 MW of net decremental energy to an average of 345 MW of net decremental energy.

While the reduction in over-scheduling and over-generation during off-peak hours has been relatively moderate, this may be in part attributable to the relatively low hydro conditions experienced this year.³ In

³ The overall level of over-generation and decremental energy dispatched by the CAISO was significantly higher in the spring and early summer of last year, largely due to the much higher hydro conditions last year. One of the key reasons for modifying off-peak scheduling requirements was to avoid the problems that the 95 percent scheduling requirement created during off-peak hours under such conditions. However, analysis of the potential impacts of changes in load scheduling requirements in this memo was not based on a comparison of similar periods last year since this could overestimate impacts under actual hydro conditions this year.

addition, DMM notes that concerns that relaxing the off-peak scheduling requirement to 75 percent would cause the need to dispatch significant amounts of incremental energy in real time have not materialized.

Table 1. Key Indicators of Over-scheduling

	Before	After	Reduction
<i>Average Day Ahead Over-scheduling</i>			
Off-Peak Hours	406 MW (1.8%)	188 MW (.8%)	218 MW (1.0%)
Peak Hours	174 MW (.6%)	140 MW (.5%)	34 MW (.1%)
<i>Percent of Hours with Net Decremental Energy Dispatch in Real Time Market</i>			
Off-Peak Hours	82%	58%	-24%
Peak Hours	78%	75%	-3%
<i>Average Net Real Time Dispatch (MW/hour)</i>			
Off-Peak Hours	-409 MW	-22 MW	-387 MW
Peak Hours	-462 MW	-345 MW	-117 MW

Note: Analysis based on comparison of data for six weeks prior to the April 26, 2007, effective date of changes in day-ahead scheduling requirements with data for seven weeks after the effective date of changes.

Since the new scheduling provisions went into place, there has also been a moderate decrease in both the size and frequency of scheduling requirement violations. The frequency of potential violations of the scheduling requirement has dropped from a daily average of 5 off-peak and 11 peak period violations, to daily averages of 3 off-peak and 9 peak period violations. Meanwhile, the average volume of each potential violation during off-peak hours has dropped from about 13 MWh to about 1.5 MWh.

3. Enforcement of Outage Reporting Penalties

On July 1, DMM began enforcing penalties for not complying with the requirements in the CAISO tariff for reporting generating unit forced outages. Under these Tariff provisions, forced generation outages must initially be reported to the CAISO within 30 minutes. Penalties for non-compliance with this requirement increase from \$1,000 up to \$5,000 per outage, depending on the number of violations during each year. Generators must also provide an explanation of the cause of forced outages within two working days. The penalty for not providing a forced outage explanation within two working days is \$500 for each day the explanation is late.

DMM's enforcement of these penalties follows FERC approval of modifications to the forced outage reporting requirements designed to establish more realistic and specific criteria for outage reporting. The changes, which were developed through an extensive stakeholder process, were made to address certain compliance issues identified by market participants after DMM announced preparations to enforce outage reporting requirements at the beginning of last summer. The proposed modifications were approved by the Board on October 18, 2006, and filed with FERC shortly thereafter. In conjunction with the tariff modifications, the CAISO also completed enhancements to the CAISO system used by market participants to report outages (SLIC) to make compliance with the requirements more "user friendly."

Over the past few months, DMM has coordinated with External Affairs and Outage Coordination staff to ensure that market participants were adequately informed about the forced outage reporting penalties and had adequate means to understand and comply with the requirements.

These efforts included:

- Issuing numerous market notices that provided information relating to the status of the forced outage reporting penalties.
- Conducting conference calls with market participants in April and June during which the CAISO provided participants an opportunity to ask questions about the requirements.
- Posting a series of documents summarizing how market participants can comply with the forced outage reporting requirements, and providing answers to questions received from participants.
- Providing market participants with weekly summaries, since early May, of potential violations of the requirements on an advisory basis to help participants understand the requirements and resolve any problems complying with the requirements prior to the time penalties went into effect.

All of these activities were targeted towards facilitating a smooth rollout of the penalty provisions for forced outages. DMM will plan to update the Board in the coming months on the overall compliance with the outage reporting requirements since the penalty provisions took effect on July 1.