

Stakeholder Process: Multi-Stage Generating Unit Modeling

Summary of Submitted Comments

Stakeholders submitted three rounds of written comments to the CAISO on the following dates:

- Round One, 11/21/08
- Round Two, 03/04/09
- Round Three, 04/24/09

This matrix summarizes comments provided on the Revised Straw Proposal, which were due April 24, 2009.

Stakeholder comments are posted at: <http://www.caiso.com/2078/2078908392d0.html>

Other stakeholder efforts include:

- Stakeholder Conference Calls:
 - November 14, 2008
 - February 25, 2009
 - April 17, 2009

Management Proposal	Calpine Corp.	J.P. Morgan Ventures Energy Corp.	Pacific Gas & Electric	Reliant Energy	San Diego Gas & Electric	Southern California Edison	Management Response
MSG units limited initially to those units that have Forbidden Operating Regions in the Master File	No Comment	No Comment	Conditional Plans to evaluate the dispatch of pump storage hydro units under new market. May seek MSG modeling for those units.	No Comment	No Comment	Conditional Encourages the ISO to set a timeline for extending MSG modeling to units without Forbidden Operating Regions.	The initial implementation of MSG modeling is intended to mitigate the suspension of the Forbidden Operating Region (FOR) functionality. Those units with FOR will be addressed first. The ISO will work to establish a timeline for opening the functionality to other units. It is management's position that the MSG modeling should ultimately be extended to all units it would enable to be accurately modeled. This goal needs to be balanced against software performance limitations which are not fully known at this time.
Up to <i>ten</i> configurations of an MSG unit can be bid into the DA market . One must meet RA obligation.	Support Supports configuration-based modeling of MSG units. Comfortable with limiting DA configurations to ten.	Support	Support	Notes that the transition matrix needs to include the maximum number of times per day that a unit can be transitioned between two configurations.	Support Notes that the transition matrix is the key to accurate modeling	Support	Management agrees that ten configurations will adequately capture the operating configurations of MSG units. Capturing the cost and operational considerations associated with all feasible transitions is indeed essential to successful MSG modeling. The maximum number of times a transition can occur within a day will be included in the transition matrix.
Up to <i>three</i> configurations can be bid into the RT market . One must meet RA and RUC obligation, one must meet DA schedule, and all must honor DA A/S awards.	Support Limitation to three configurations balances desired flexibility with processing time constraints.	Conditional Seeks clarification that MSG resources will not face offer obligations or restrictions not imposed on other generating units.	Support Notes that one configuration's bid should meet the DA and RUC schedules and be feasibly transitioned to from the previous interval's configuration.	No Comment	Seeks clarification on the requirement that configurations bid into the RT market be feasibly transitioned between one another.	Support	MSG resources that receive a DA schedule must bid a configuration into RT that can fulfill that schedule. The RT bid for the energy and/or A/S capacity can be different from the bid submitted in DA. Specifically, the RT bid can be structured to reflect changes in operating conditions and/or opportunity costs. If different configurations bid in to successive intervals, the transition

Management Proposal	Calpine Corp.	J.P. Morgan Ventures Energy Corp.	Pacific Gas & Electric	Reliant Energy	San Diego Gas & Electric	Southern California Edison	Management Response
							matrix should indicate that the transition between these two configurations is feasible.
<p>Forbidden Operating Region Functionality will be evaluated for re-instatement in the RT market.</p>	No Comment	No Comment	No Comment	<p>Conditional</p> <p>Seeks confirmation that MSG modeling would be appropriately used for units such as a steam turbine which is currently modeled as having a Forbidden Operating Region..</p>	No Comment	No Comment	<p>MSG modeling can effectively be used to model combined-cycle units, steam units, and steam-injected gas turbine units. There may be other generation technologies that could also be accurately modeled and dispatched using MSG functionality.</p> <p>For some units, however, the Forbidden Operating Region functionality will better capture their operating constraints than MSG modeling would. Additionally, it is possible that some MSG units will have true FORs within a configuration. Therefore, the proposal is to re-instate FOR functionality in the RT market once MSG functionality is in place..</p>
<p>Self-Schedules must be for a configuration that satisfies RA obligation. Any additional market bids must be for the same configuration as the Self-Schedule</p>	<p>Support</p> <p>Given the structure of the market optimization, this limitation is understandable and acceptable, though not ideal.</p>	No Comment	No Comment	No Comment	No Comment	Does not Support	<p>If an MSG unit self-schedules a configuration, it is thus indicating that it must be dispatched in that configuration. To then submit a market bid for a different configuration is at odds with the iterative logic and structure of the optimization software. Participants can structure their market bids so that RA capacity is offered, and the desired schedule is protected.</p>
<p>Bid Cost Recovery is calculated based on the configuration dispatched in RT</p>	Support	No Comment	No Comment	<p>Conditional</p> <p>Seeks clarification as to the limitations to changes in scheduled configurations while retaining eligibility for</p>	No Comment	<p>Conditional</p> <p>Would not support a BCR scheme in which a unit committed in the DA and not in the RT would not be eligible for BCR.</p>	<p>The final proposal clarified that a unit committed in DA and not in RT would be eligible for BCR based on the DA commitment costs.</p>

Management Proposal	Calpine Corp.	J.P. Morgan Ventures Energy Corp.	Pacific Gas & Electric	Reliant Energy	San Diego Gas & Electric	Southern California Edison	Management Response
				BCR. Also, requests summary of difference in BCR between MSG and non-MSG units.			
RA must-offer obligations must be met in the DA and RT by submitting a configuration that can supply the obligated MWs	Support Clarifies that the obligation of RA units to offer A/S bids is not in effect at this time. This obligation will not be specific to MSG units.	No Comment	Conditional Notes that the requirement that RA units bid in A/S capacity is not yet approved by FERC.	Conditional Seeks clarification that there is not a requirement that long-start RA units bid into the RT market. Seeks clarification that satisfaction of the RA obligation is not calculated based on the <i>incremental</i> capacity made available by a configuration.	No Comment	No Comment	Management confirms that RA units are not currently required to offer A/S capacity. This requirement is pending approval by FERC. It will not be limited to MSG RA units. Long-start MSG units with RA obligations must offer their RA capacity into the DA market. If the unit is not taken in the DA market, it is not required to offer into the RT market. Its obligation would be met by the DA bid or self-schedule. The RA obligation would be met by offering in a bid or self-schedule for a configuration such that the MW value meets or exceeds the RA obligation. Thus, the satisfaction of the obligation is based on the total capacity of the configuration and not the incremental increase from a lower configuration.
RMR units will be dispatched and paid according to their contractual arrangements	Conditional Recommends more study, particularly in the case of units with partial RMR contracts	No Comment	No Comment	No Comment	No Comment	No Comment	Management appreciates this thoughtful observation. This issue will be studied further. As with the whole of the MSG modeling proposal, it is designed to limit the extent to which treatment of MSG units differs from non-MSG units.
Local Market Power Mitigation	Conditional Poses clarifying questions which the final draft proposal will seek	No Comment	No Comment	No Comment	No Comment	No Comment	An additional example was added to the appendix of the Draft Final Proposal to help clarify this issue. In short, bids are only mitigated down (not up). Thus, the mitigated price is the higher of the accepted price or

Management Proposal	Calpine Corp.	J.P. Morgan Ventures Energy Corp.	Pacific Gas & Electric	Reliant Energy	San Diego Gas & Electric	Southern California Edison	Management Response
	to address.						the DEB, but <i>not</i> higher than the submitted bid.
Outage and de-rate reporting	No Comment	No Comment	Conditional Is supportive of the goal to save participants the task of entering outages and de-rates by configuration, but has implementation feasibility concerns.	Conditional Seeks confirmation that outages and de-rates can be submitted on an hourly basis, and that participants can ensure that RT dispatches are consistent with outages.	No Comment	Does Not Support Does not support the goal of automated extrapolation from unit level outage information to configuration availability. Supports configuration-level outage reporting which places more of a burden on stakeholders and less on the SLIC system.	Management is mindful that unit-level outage reporting, and automated extrapolation of that information to configurations may not be feasible. This was proposed to alleviate the burden that configuration-level reporting could place on participants. If the proposal is not feasible, then configuration-level outage reporting will be implemented. Management appreciates Stakeholder willingness to take on configuration-level outage reporting.
Uninstructed deviations (UD) will be monitored to assess the need to seek authority to charge penalties	No Comment	No Comment	No Comment	No Comment	No Comment	Objects to the notion that successful implementation of MSG modeling is a step toward implementing UD penalties.	Under MSG modeling, dispatches will be more accurate, and thus UD should decrease. Management recognizes that MSG units operating in the wrong configuration have the potential to cause reliability problems. Management simply recommends monitoring of UD, and points out that, if UD are problematic, penalties could be sought.