California ISO
Your Link to Power

California Independent
System Operator Corporation

September 28, 2007

Hon. Kimberly D. Bose, Secretary
Federal Energy Regulatory Commission
888 First Street, NE
Washington, DC 20426

**RE: California Independent System Operator Corporation**
**Docket No. ER06-615-____**

Dear Secretary Bose:

Pursuant to certain Commission orders in Docket No. ER06-615 regarding the terms and conditions of the California Independent System Operator Corporation ("CAISO") FERC electric tariff to implement the CAISO's Market Redesign and Technology Upgrade ("MRTU"), and the Commission's August 8, 2007 "Notice of Extension of Time," the CAISO respectfully submits an original and five copies of proposed revisions to its MRTU Tariff. Specifically, this filing consists of tariff language to comply with two Commission mandates as to which the CAISO sought and obtained an extension of time until September 28, 2007 to comply with. The CAISO is also tendering two copies of this filing to be time and date stamped and returned to our courier.

## I. BACKGROUND

Since September of last year, the Commission has issued a number of major orders addressing the terms and conditions of the CAISO's MRTU Tariff, including orders issued on September 21, 2006, April 20, 2007, and June 25, 2007.[1] In these three orders, the Commission required the CAISO to make a number of modifications to its MRTU Tariff in accordance with various timelines. With respect to three of these required modifications, the CAISO, on August 3, 2007, filed with the Commission a request for extension of time in order to file the required tariff language revisions ("August 3 Motion for Extension"). Specifically, the CAISO requested an extension of

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1 Order Conditionally Accepting the CAISO's MRTU Tariff, *Cal. Indep. Sys. Operator Corp.*, 116 FERC ¶ 61,274 (2006) ("September 21 Order"); Order Granting in Part and Denying in Part Requests for Clarification and Rehearing, *Cal. Indep. Sys. Operator Corp.*, 119 FERC ¶ 61,076 (2007) ("April 20 Order"); Order on Compliance Filings, *Cal. Indep. Sys. Operator Corp.*, 119 FERC ¶ 61,313 (2007) ("June 25 Order").

time until September 28, 2007 to comply with the following mandates: (1) the requirement, set forth in Paragraph 452 of the September 21 Order, that the CAISO develop and file interim measures to address the potential economic incentive for Load Serving Entities ("LSEs") to underschedule in the Day-Ahead Market until the successful implementation of convergence bidding; (2) Paragraph 175 of the June 25 Order, which directed the CAISO, upon completion of a stakeholder process, to submit revised tariff sheets reflecting the ability to allow Metered Subsystem ("MSS") resources to designate Reliability Must-Run ("RMR") units as Load-following; and (3) Paragraph 59 of the June 25 Order, which directed the CAISO to work with the Sacramento Municipal Utility District ('SMUD") to ensure that SMUD's concern with respect to capacity sold on a firm basis to a hub and then resold to a third party external to the CAISO grid is resolved.

On August 8, 2007, the Commission issued a Notice of Extension of Time in this docket granting the CAISO's request to file these three items with the Commission on September 28, 2007. As explained in the separate Motion for Extension filed today, the CAISO identified at the end of this week an implementation issue involving the Tariff revisions to allow MSS resources to designate RMR units as Load-following. The CAISO is requesting additional time to discuss this implementation issue with Northern California Power Agency ('NCPA"), who represented the only Load-following MSS and the only MSS with an RMR Contract. The CAISO hopes that an additional seven days will be sufficient time to discuss this implementation issue with NCPA and to finalize the Tariff language in compliance with Paragraph 175 of the June 25 Order.

## II. CONTENTS OF FILING

This filing comprises:

This Transmittal Letter,

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| Attachment A | MRTU Tariff Sheets Blacklined Against MRTU Tariff Sheets Filed on August 3, 2007 |
| Attachment B | MRTU Tariff Sheets Clean |
| Attachment C | August 29, 2007, Memo and Attachments to the CAISO Board of Governors Concerning Underscheduling Proposal |
| Attachment D | August 2, 2007, White Paper on Refinements to Under Scheduling Proposal |
| Attachment E | July 2, 2007, Opinion of the Market Surveillance Committee on "Interim Measures to Address Day-Ahead Underscheduling Under MRTU" |

Attachment F July 9, 2007, Report of the Department of Market Monitoring to the CAISO Board of Governors

## III. COMMUNICATIONS

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The CAISO respectfully requests waiver of Rule 203(b)(3), 18 C.F.R. § 385.203(b)(3), to permit each of the persons listed above to be included on the service list for this proceeding.

## IV. DESCRIPTIONS OF MODIFICATIONS TO MRTU TARIFF

### A. Interim Measures to Address Potential Underscheduling

#### 1. Background

In the September 21 Order, the Commission directed that the CAISO implement convergence bidding within twelve months after the implementation of MRTU because, as it had previously found in prior orders, convergence bidding improves market performance by: (1) providing the effect of expanding the number of competitors and the number of bids into the Day-Ahead Market, which helps to prevent the exercise of market power; (2) reducing the price differences between the real-time and the day-ahead markets, which thereby reduces the incentive for buyers or sellers not bidding physical schedules in day-ahead markets in expectation of better prices in the real-time markets; (3) facilitating the CAISO's management of grid operations through a tariff mechanism that allows the CAISO to distinguish clearly between physical and financial bids; and (4) improving day-ahead and real-time price convergence and reducing the exercise of market power. Recognizing that earlier implementation of "the substantial benefits of MRTU outweigh[s] the potential benefits that are to be gained by implementing convergence bidding in Release 1," the Commission did not require the implementation of convergence bidding simultaneously with the start of MRTU. September 21 Order at PP 449-52. The Commission did, however, require that Release 1 of MRTU "must include provisions to offset LSEs' incentive to underschedule in the day-ahead market" and directed the CAISO to develop and file interim measures, no later than 180 days prior to the effective date of MRTU Release 1 to address the potential economic incentive for LSEs to underschedule in the day-ahead market until the successful implementation of convergence bidding has been achieved, the tariff provisions for which the Commission also required be filed for Commission review for the implementation within twelve months after the effective date of MRTU Release 1. *Id.* at P 452.

In its April 20 Order, in response to requests for rehearing and clarification of the Commission's Sept 21 Order, the Commission reiterated its directive that the CAISO must develop and file interim measures to address the potential exercise of demand-side market power within 180 days prior to the effective date of MRTU Release 1. The Commission stated that it had not directed what form the interim measures should take and found it premature to evaluate whether these interim measures will necessarily be unduly burdensome to the CAISO, or prevent the CAISO from implementing convergence bidding as directed and reserved its judgment on the effectiveness of the CAISO's proposal until after the proposal is filed with the Commission. The Commission also noted that the interim measures it contemplated "are not intended to prevent LSEs from taking steps to reduce the costs of serving their load" but should instead be designed to prevent uneconomic behavior. Therefore, the Commission concluded that it expected the "interim measures to address the problem of persistent underscheduling in the day-ahead market on occasions when energy prices suggest that it would be economic to buy in the day-ahead market." April 20 Order at PP 118 -19.

As noted above, on August 3, 2007, the CAISO submitted a motion requesting an extension of time for its compliance with the requirement in Paragraph 452 of the September 21 Order, to develop and file, no later than 180 days prior to the initial implementation of MRTU, interim measures to address the potential economic incentive for LSEs to underschedule in the Day-Ahead Market until the successful implementation of convergence bidding. At that time the CAISO had already conducted a robust stakeholder process aimed at developing the most appropriate measures to address potential incentives for LSEs to underschedule in the Day-Ahead Market under MRTU. The CAISO had originally planned to conclude this process and present a final underscheduling proposal to its Board of Governors by mid-July. However, based on stakeholder feedback, the CAISO determined that this issue would benefit from additional consideration and stakeholder input. The Commission granted this request for extension on August 8, 2007. Upon further consideration of the interim underscheduling measures the CAISO developed with its stakeholders, on September 6, 2007, the CAISO obtained approval by its Board of Governors of the proposal submitted herein.

### 2. Stakeholder Process

Subsequent to the September 21 Order, the CAISO conducted an extensive stakeholder process that spanned over five months to develop the form of the interim underscheduling measures required by the Commission. The CAISO began the development of the interim measures with a discussion of the issues related to such requirements at the February 13, 2007, Market Surveillance Committee meeting. On April 27, 2007, the CAISO posted on its website an Issue Paper, "Proposal for Implementing a Day Ahead Scheduling Requirement under MRTU," which included four proposed options for complying with the Commission's directive concerning underscheduling. Stakeholders submitted written comments on these four options on May 7, 2007, and the CAISO held a stakeholder conference call to discuss the options on May 9, 2007. After considering stakeholder input and further analyzing the potential benefits and implementation feasibility of the four options, the CAISO narrowed the proposals under consideration to two options which it discussed in a white paper posted on May 23, 2007. The CAISO held a second stakeholder conference call to discuss this paper and implementation details on May 29, 2007, and held an in-person stakeholder meeting on June 6, 2007. The proposals considered in this process ranged from simple reporting mechanisms to automated penalty structures. All of the options considered with its stakeholders are summarized in Attachment A to the August 29, 2007 memorandum to the CAISO Board of Governors in Attachment C to this filing. The CAISO presented a "final" straw proposal in a paper posted on June 15, 2007. On July 3, the CAISO posted draft tariff language on underscheduling for stakeholder comment. On July 10, the CAISO posted revised tariff language. Comments were received from stakeholders on the draft tariff language on July 12.

As discussed above, the CAISO had originally planned to conclude this process and present a final underscheduling proposal to its Board of Governors by mid-July. However, based on stakeholder feedback, the CAISO determined that this issue would benefit from additional consideration and stakeholder input and delayed its request for approval by its Board of Governors of its proposal for addressing underscheduling to its until the September 6, 2007, Board of Governors meeting.

Two issues were the focus of the stakeholder process in August and September: (1) the level of the "bright line trigger" discussed below, and (2) issues concerning the small Load exemption from the Interim Scheduling Charge. The CAISO posted a white paper on outstanding issues on August 2. The CAISO conducted an additional in-person stakeholder meeting with the Market Surveillance Committee on August 10, 2007. A fourth round of written stakeholder comments were filed on August 14, 2007. The CAISO Board of Governors then approved the instant proposal, including the resolution of outstanding issues, on September 6, 2007. The CAISO believes this extensive stakeholder process has led to an improved proposal and that further stakeholder discussions would not lead to additional improvements or greater consensus.

### 3. Discussion

Guided by its robust stakeholder process on this matter and by the Commission's directives in the September 21 Order and the April 20 Order, the CAISO has developed interim measures that are fully compliant with the Commission's directives and that address many of the additional issues identified by stakeholders. The Interim Scheduling Report and Charge are designed to mitigate the potential economic incentive for LSEs to underschedule in the Day-Ahead Market in order to lower the Day-Ahead Market clearing price below economically efficient levels through the exercise of market power. The CAISO believes that this proposal also balances the diverse stakeholder perspectives on the design of an appropriate interim measure and represents a just and reasonable approach to complying with the September 21 Order.

As described more fully below, this approach involves the creation of confidential weekly reports by the CAISO, a bright line rule to define persistent underscheduling, and the ability to apply an Interim Scheduling Charge to a Scheduling Coordinator that the CAISO has determined is persistently underscheduling in an uneconomic manner. This bright line rule provides a clearly-defined standard for the application of this charge which will leave little room for varying interpretation. The measures are also designed to balance interests among both the load and supplier communities, to develop a rate that is just and reasonable, but to also not jeopardize the integrity and benefits of the MRTU markets. In addition, and importantly, the proposed design of the Interim Scheduling Report and Charge is intended to be simple and fully implementable under the current MRTU design, without causing risk of delay of MRTU past its targeted implementation date. As directed by the Commission, because convergence bidding is expected to eliminate the ability of LSEs to under schedule Load in the Day-Ahead Market to depress Day-Ahead Market prices in a manner inconsistent with efficient market operation, the Interim Scheduling Report and Charge will cease to apply when convergence bidding is implemented, which the Commission has directed must be by the first anniversary of the start of MRTU. The interim measures proposed here represent a balance of stakeholder interests that were developed through an extended five-month stakeholder process and targeted to specifically address the issues identified in the Commission's September 21 Order. Moreover, this interim measure is designed so that it could be easily re-configured to address any concerns that may arise after some time of experience with market behavior under MRTU (*i.e.,*, by adjusting the thresholds or charge levels) without altering the fundamental structure of the interim measure.

#### a. Description of the Interim Report and Charge

The Interim Scheduling Report and Charge as provided in proposed Section 11.24 of the Tariff submitted in Attachment B to this filing contain the following elements:

### i. Interim Scheduling Report

The CAISO will produce a report for each Scheduling Coordinator's scheduling performance based on the metered data received by the time each report is produced. The reports will be provided on a confidential basis to each applicable Scheduling Coordinator on a weekly basis. The report will reflect the scheduling thresholds described below and as reflected in Section 11.24.2 and will trigger the Interim Scheduling Charges described below and as also reflected in 11.24.2.

### ii. Bright Line Rule

In the event that in any given month a Scheduling Coordinator's Net Negative CAISO Demand Deviation[2] in its applicable Load Aggregation Point ("LAP") exceeds fifteen percent (15%) of the Scheduling Coordinator's cleared total CAISO Demand as represented in its Day-Ahead Schedule in its applicable LAP for five percent (5%) or more of the total Trading Hours for that given month, the CAISO will apply the Interim Scheduling Charge described below. Once this bright line rule is triggered, the Interim Scheduling Charges would be incurred on a going-forward basis through the applicable month from the time the CAISO has determined that the Scheduling Coordinator exceeds the bright line criteria for the applicable month. These charges will not be imposed on a retroactive basis.

The level of the bright line trigger was one of the issues discussed at length in the August stakeholder process. The CAISO's August 2, 2007, white paper, provided as Attachment D to this filing, presented two options – a five percent monthly exemption or a five percent annual exemption. The CAISO ultimately concluded that the monthly exemption was preferable because it provides incentives for Scheduling Coordinators to improve their scheduling behavior on a month-by-month basis and reduces the potential for overscheduling to avoid the charge.

### iii. Interim Scheduling Charge Thresholds

Different dollar values for the Interim Scheduling Charge will apply based on the magnitude of each Scheduling Coordinator's underscheduling. For the month for which the Interim Scheduling Charge will apply, for any given Trading Hour in which the Scheduling Coordinator's Net Negative Deviation of CAISO Demand in its applicable LAP is greater than fifteen percent (15%) and less than twenty percent (20%) of the Scheduling Coordinator's cleared total CAISO Demand as represented in its Day-Ahead Schedule in its applicable LAP, the Scheduling Coordinator shall pay $150 /MWh for its Net Negative Deviation of CAISO Demand that is greater than fifteen percent (15%) and less than twenty percent (20%) of its cleared total CAISO Demand as represented in its Day-Ahead Schedule in the applicable LAP in that Trading Hour. For any given Trading

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2 Net Negative CAISO Demand Deviation is defined in the CAISO Tariff as filed on August 3, 2007 as: "The difference between metered CAISO Demand and the total CAISO Demand scheduled in the Day-Ahead Schedule, if positive."

Hour in the applicable month in which the Scheduling Coordinator's Net Negative Deviation of CAISO Demand in its applicable LAP is greater than or equal to twenty percent (20%) of the Scheduling Coordinator's cleared total CAISO Demand as represented in its Day-Ahead Schedule in its applicable LAP, the Scheduling Coordinator shall pay $250 /MWh for its Net Negative Deviation of CAISO Demand greater than or equal to twenty percent (20%) of its cleared total CAISO Demand as represented in its Day-Ahead Schedule in the applicable LAP in that Trading Hour.

#### iv. Exemptions from the Interim Scheduling Charge

The CAISO has included in its proposal the following exemptions to the Interim Scheduling Charge to address certain concerns raised by stakeholders to ensure the charge is implemented in a fair manner and to tailor the charge to meet the Commission's directives.

> Demand Forecast: For any given Trading Day for each applicable LAP in which that Trading Day's CAISO's daily peak Demand Forecast is 95% or less than actual metered CAISO Demand in the respective northern and southern regions of the CAISO Control Area (as further described in the Business Practice Manuals), Scheduling Coordinators in the applicable LAP shall not be subject to the Interim Scheduling Charge.
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> Small Load: For any given Trading Hour when a Scheduling Coordinator's peak metered CAISO Demand is less than or equal to 500 MW in a particular LAP, that Scheduling Coordinator shall not be subject to the Interim Scheduling Charge.
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> Participating Load: All metered CAISO Demand by Participating Loads shall not be subject to the Interim Scheduling Charge. By definition this exemption would apply to Aggregated Participating Load.
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> Load Following Meter Sub-System: All metered CAISO Demand that is MSS Load Following Demand shall not be subject to the Interim Scheduling Charge.
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> Price Difference: For any given Trading Hour when the Hourly Real-Time LAP Price is less than the Day-Ahead LAP Price for the same Trading Hour, the Interim Scheduling Charge will not apply in the applicable LAP.

There was a lack of stakeholder consensus on the exemption for small Load. As discussed in greater detail below, the CAISO conducted an analysis of historical data, which confirmed that small Load-Serving Entities have a limited ability to influence prices in the Day-Ahead Market. The CAISO's analysis shows that the proposed 500 MW exemption will not limit the effectiveness of the Interim Scheduling Charge and will ensure that small Load-Serving Entities are not unfairly penalized when a small MW deviation could result in a large percentage of unscheduled Load.

v. **Allocation of Revenue Collected Under the Interim Scheduling Charge**

Any revenues collected with the assessment of the Interim Under-Scheduling Charge will be treated as "Other Revenues" as indicated in Schedule F, of Part C of the CAISO Tariff and will be used to offset the revenue requirement associated with the Market Usage Charge.

b. **The Interim Scheduling Charge and Report Provides a Just and Reasonable Measure to Comply with the September 21 Order While Addressing Concerns Raised By Market Participants and the Commission in the Absence of Convergence Bidding**

In fulfillment of the Commission's directive to offset incentives of LSEs to underschedule in the Day-Ahead Market, the CAISO proposes a measure that appropriately balances stakeholder concerns and removes economic incentives to underschedule in the Day-Ahead Market that potentially would result in the exercise of demand-side market power. The elements of the Interim Scheduling Report and Charge as described above were designed specifically to meet the objectives set forth by the Commission in its September 21 Order and then reiterated in the April 20 Order. As described more fully below, the elements of the Interim Scheduling Report and Charge as proposed all work together to insure that the market power concerns created by persistent underscheduling are addressed without creating other perverse incentives or creating unnecessary burdens for certain stakeholders or the CAISO.

Further, the proposed Interim Scheduling Report and Charge strikes a proper balance between the many competing interests that have been expressed both in this proceeding and subsequently in the stakeholder process. The CAISO recognizes that the Commission's directive for the adoption of such interim measures was in response to concerns raised by certain market participants whom argued that the lack of convergence bidding in Release 1 could allow LSEs to strategically under-schedule and artificially suppress the Day-Ahead Energy price. These entities contend that the penalties for under-scheduling implicit in the Residual Unit Commitment ("RUC") process may not be sufficient to prevent under-scheduling particularly since Resource Adequacy generation units are required to bid zero into the RUC process. However, other market participants argued both in their pleadings in through the stakeholder process that additional mechanisms to limit underscheduling under MRTU are not necessary and that the CAISO's new market design has sufficient financial incentives that discourage under-scheduling. The interim measure proposed by the CAISO provides an additional incentive for scheduling in the Day-Ahead that is targeted to address persistent underscheduling that would result in the market power concerns but is not excessively burdensome for parties whose Day-Ahead scheduling practices are consistent with sound economic practices.

The current proposal as filed herein also is largely consistent with the recommendations provided by the Market Surveillance Committee ("MSC") and the Department of Market Monitoring, whose opinions and comments are attached in Attachments E and F to this filing, respectively.

### i. The Interim Scheduling Report and Charge Provides a Clearly Defined Rule that Resolves Potential Economic Incentives to Exercise Market Power

In developing the interim measures, the CAISO endeavored to develop a measure that addressed the concern that in the absence of convergence bidding, the market rules contemplated to be in place at the start of MRTU did not adequately ensure that market participants would have sufficient disincentives to underschedule in the day-ahead timeframe in an effort to exercise its ability to move prices (*i.e.*, market power) to benefit from the price differentials between the DAM and RTM. In developing such measures, however, the CAISO also endeavored to avoid creating measures that prevent LSEs from taking appropriate actions in the market that are related with their legitimate goal to reduce the costs of serving load through the market opportunities that are made available through MRTU. Based on FERC's guidance and stakeholder input, the CAISO believes it is appropriate to adopt measures that are meant to truly prevent the exercise of market power but not to discourage appropriate market behavior where market power is not being exercised.

The graduated thresholds in the CAISO's proposal are designed to meet this goal. After a Scheduling Coordinator triggers the threshold in the "bright line rule," a certain degree (fifteen percent) of variability of their schedules between the Day-Ahead and Real-Time is not penalized to allow for the Day-Ahead Market to function economically. But for amounts above that threshold, the penalties provide graduated penalties. This penalty structure will provide disincentives towards deviations above the established thresholds to dissuade parties from persistently underscheduling in order to take advantage of any impact such underscheduling may have on CAISO market prices. In particular, the CAISO believes that the scheduling threshold should not be so tight that market participants may have an alternative perverse incentive to over-schedule in the Day-Ahead simply to avoid the penalties. However, given the fifteen percent threshold, scheduling behavior outside this range should be considered and assessed a significant change in order to discourage persistent uneconomic underscheduling. The combination of a threshold of fifteen percent in conjunction with a high \$/MWh charge for the higher levels of variability provides a strong incentive to schedule Load in the Day-Ahead Market.

The adoption of the fifteen percent threshold also ensures that market participants are not required to take on significant risk in order to simply comply with the interim scheduling measures. The CAISO considered lower thresholds as suggested by some stakeholders, but believes that lower thresholds would be unnecessarily excessive and would not allow LSEs any latitude to account for occasional load forecast errors by LSEs or supply deviations due to derates or outages.

As directed by the Commission and as supported by the stakeholder process, the CAISO found that persistent underscheduling is what posed the more significant market power concerns. Therefore, the CAISO developed its bright line rule to address persistent underscheduling. The CAISO found that persistent underscheduling in the Day-Ahead Market when prices indicate that it would be more appropriate to schedule the bulk of its load in the DAM, is an indication that the underscheduling market participants are engaging in behavior to improperly alter prices (*i.e.*, attempting to exercise market power) by under-representing the actual Demand expected in Real-Time.

Stakeholders for the most part agreed with this principle, but urged the CAISO to define exactly what is meant by "persistent." Therefore, after the July Board of Governors meeting, the CAISO sought stakeholder input to develop a bright line rule to define "persistent" underscheduling to alleviate the potential for any ambiguity and uncertainty as to when the charge would apply. The CAISO considered stakeholder feedback on two proposed options for the bright line trigger and recommends a value of 36 hours per month (which equates to five percent of the hours per month for a month with 30 days) to limit scheduling behavior outside of the charge threshold.

The CAISO's exemptions to the charge are designed to address similar economic concerns. The CAISO does not believe it is necessary to provide a disincentive to underscheduling for those circumstances that market participants are clearly acting economically to optimally serve their load without engaging in an improper exercise of market power. Therefore, the CAISO has provided for an exemption to the charge in those instances that the threshold has been met but the CAISO has found that the Real-Time price is less than the Day-Ahead Market price so that such economic behavior is not penalized.

The CAISO also provides an exemption from the charges for small Loads that do not have the ability to impact prices through their scheduling practices. As stated in the September 21 Order and reiterated in the April 20 Order, the Commission has found that participants with market power may have the ability to price discriminate between the Day-Ahead and Real-Time Markets, resulting in a forward price that is systematically different than the expected Real-Time price. Therefore, the CAISO believes it is not necessary to have measures in place that penalize underscheduling in the Day-Ahead Market when there is no adverse economic impact that can accrue from such behavior. The CAISO established this threshold at 500 MW based on its analysis of the level of underscheduled Demand that could have a significant price impact on the Day Ahead Market price.[3]

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3 A more detailed explanation of this analysis is provided in Attachment D

The CAISO examined a typical summer day supply curve from the California Power Exchange ("PX"), which operated a day-ahead energy market from 1998 through 2000, which is the appropriate time period to observe for this purpose as it is the last available period for a day-ahead supply curve in California that was not impacted by the severe market dysfunction of 2000 and 2001. The CAISO found that, even at 1,000 MW levels of load, the individual LSEs would have a limited ability to significantly impact the DAM clearing price. The CAISO also found that underscheduling during higher demand levels would have a more significant impact on the Day-Ahead energy price. However, under higher demand levels it is also likely that the price of energy in the Real-Time Market will be higher; thus resulting in a disincentive for LSEs to rely on the Real-Time Market. The CAISO also found that even if even if all of the smaller-sized Scheduling Coordinators in a particular LAP were to underschedule their entire Load, which as described above would not be a profitable strategy, historical analysis of 2006 data shows that such behavior would almost always have a smaller impact on price than if the large Scheduling Coordinator (Scheduling Coordinators greater than 500 MW) in a particular LAP were to underschedule 15 percent of their load requirements, which would be allowed under the interim scheduling charge.

The small load exemption is also proposed to ensure that smaller LSEs that do not possess the load diversity of larger LSEs and that tend to have more volatile loads and nonconforming loads are not adversely impacted given the more uncertain nature of their loads. For example, a small LSE that serves only a few large industrial loads could easily see its load fluctuate significantly in response to a change in operations at one of the industrial facilities that it serves. Such an occurrence could easily push the small LSE past the fifteen percent Day-Ahead scheduling requirement threshold for reasons that have nothing to do with uneconomic behavior but would yet have a minimal impact on the DAM price as demonstrated above. A similar event would have a much smaller impact on the load deviation of a large LSE that serves a diverse customer base.

Finally, the CAISO has also tailored its charge to ensure that the charge would only apply to those hours when an LSE purposefully underschedules in the Day-Ahead Market, and not during hours of underscheduling as a result of load forecast error. Therefore, the interim measure includes an exemption for all hours in which the CAISO's Day-Ahead Demand Forecast is 5 percent or less than the actual Real-Time Demand in any particular LAP.

#### ii. The Interim Scheduling Report and Charge Measure Can be Implemented at the Start of MRTU Without Adversely Affecting the MRTU Implementation Schedule

In developing the interim underscheduling measures, the CAISO maintained a critical goal of developing an interim measure that would be feasible for implementation at the start of MRTU. This was necessary as the CAISO is committed to begin its operations under MRTU and provide benefits to customers as soon as practicable.

Significant efforts are already underway to test its software and business procedures necessary to implement MRTU by the MRTU implementation date of March 31, 2008. The Commission's directive in the September 21 Order clearly indicated that the underscheduling measures are to be in effect at the start of MRTU until such time as (*i.e.*, twelve months after MRTU start-up) convergence bidding has been implemented. Moreover, the Commission was clear in the September 21 Order that the mechanism to address underscheduling concerns should not delay the many benefits of MRTU start-up. Therefore, the CAISO sought measures that offered simplicity in terms of both the integration of these measures into its existing software and into the business development processes in support of MRTU. The report and implementation of the charge when the bright line rule is triggered requires the implementation of certain business procedures to implement as would any additional requirements implemented at this time. However, the Interim Scheduling Report and Charge do not require the development of additional software features in support of the market functionality that would have to be integrated into the market engine, business processes and validation rules. Therefore, the adoption of the Interim Scheduling Report and Charge does not post a threat to the implementation of MRTU on the CAISO's targeted date.

Through the stakeholder process, certain market participants suggested the adoption of more complex rules that required elaborate measures to identify more specifically the level of impact any load schedules shifted from the Day-Ahead Market to the Real-Time Market actually had on prices. Such measures would require additional stakeholder review and the design of testing procedures which the CAISO believes are unnecessary, as the issue of having economic incentives to underschedule in the Day-Ahead Market is addressed equally well by the *ex ante* measures the CAISO is proposing to implement. Moreover, given that these measures are designed to be interim measures in place for no more than a year, the CAISO believes it is more prudent at this time to expend any additional resources to address the market power concerns the Commission is trying to address through the development of its convergence bidding features, which the Commission has expressed are the best measures to deal with the relevant economic incentives and market power concerns.[4]

### iii. The Interim Scheduling Report and Charge Provides an Easily Configurable Measure Without the Need for Additional Design

The CAISO recognizes that the Interim Scheduling Report and Charge does not fulfill every request made by every market participant in the stakeholder process. As discussed above, the CAISO strongly believes that the Interim Scheduling Report and Charge mechanism does provide a balanced measure that complies with the Commission's directives and addresses the issues raised by stakeholders. In the event that actual experience shows that certain aspects of the measure prove to be too severe or lenient in deterring persistent underscheduling, the bright line rule, the graduated charges

4 September 21 Order at PP 450-51 and April 20 Order at P 118.

and the specific exemptions can be adjusted to better address any behavior that appears to be either more or less pervasive than the CAISO, market participants or the Commission had anticipated. Such adjustments can be accomplished while retaining the basic structure of the Interim Scheduling Report and Charge.

For example, as discussed above, certain market participants have raised the concern that the charge is too lenient and should be higher in order to deter the more significant economic incentives to underschedule in the DAM. The CAISO believes its proposed interim charge is well tailored to meet the level of persistent underscheduling it has observed in the past and strikes the proper balance between the potential for underscheduling to exercise market power as opposed to economic behavior adopted by market participants in optimally serving their load. Should there be a need to consider a higher level of deterrence because observed levels of underscheduling threaten the optimal outcome of the CAISO Markets, the charges may be increased and the thresholds are easily configurable to apply a more stringent penalty for such behavior. Similarly, market participants have raised a concern that the small load exemption may be inappropriate as it is not certain that the scheduling practices of load below the 500 MW threshold has no impact on prices. Based on the analysis performed to date, as explained above, the CAISO believes it has struck the proper balance in adopting a measure that is tailored to address behaviors that has market power implications while not penalizing economic behavior by participants for whom evidence suggests there is no ability to influence prices. Nonetheless, the CAISO's proposal does allow the specific exemptions to be adjusted if justified based on actual experience.

### B. Report Concerning Capacity Re-Sales

In response to the CAISO's November 20 and December 20, 2006 compliance filings, SMUD asserted that it was "unclear how, or whether, the CAISO will ensure that capacity sold on a firm basis to a hub and then resold to a third party external to the CAISO grid, has the same priority as CAISO demand."[5] The Commission responded to SMUD's concerns at Paragraph 59 of the June 25 Order by correctly recognizing that the question of "whether" was resolved - under MRTU Self-Scheduled exports explicitly sourced by non-Resource Adequacy Capacity and internal CAISO Demand receive equal scheduling priority.[6] However, the Commission also conceded that "this treatment is dependent upon the CAISO's ability to identify the capacity as non-RA capacity" and therefore found that SMUD's concern appropriately raises an "issue of visibility within the CAISO's software system." The Commission directed the CAISO to work with SMUD to ensure that SMUD's concern is resolved and submit a report in conjunction with the August 3 compliance filing.[7]

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5 June 25 Order at P 57.

6 *See* Section 31.4.

7 June 25 Order at P 59.

In the August 3 Request for Extension, the CAISO explained that it had engaged in discussions with SMUD concerning this issue, and believed that it has crafted a solution that resolves SMUD's concern, but needed additional time to confirm with SMUD that its proposal did, in fact, satisfy SMUD's concern. Therefore, the CAISO requested that the Commission grant it an extension of time until September 28, 2007 to submit a report concerning this issue. The Commission granted this request in its August 8 Notice of Extension of Time.

The CAISO has actively coordinated with SMUD and other entities in a regional-wide effort, through the WECC Seams Issues Subcommittee ("SIS"), to address a spectrum of issues associated with export transactions from both Resource Adequacy Capacity and non-Resource Adequacy Capacity.[8] In addition, as part of its broader communication with Market Participants regarding MRTU implementation efforts, the CAISO has noted its development and successful testing of functionality in its Scheduling Infrastructure and Business Rules ("SIBR") that identifies non-Resource Adequacy Capacity for purposes of establishing the priority for exports supported by such capacity. The Scheduling Coordinator submitting the export Self-Schedule triggers the priority by "flagging" the source as non-Resource Adequacy Capacity. This functionality is sufficient to permit tracking of the explicit non-Resource Adequacy Capacity from a firm sale to a hub that is subsequently resold to a third party external to the CAISO. As such, all the validations necessary to determine which exports should receive the export priority equal to internal CAISO Demand and which exports should not will be performed by SIBR. To the extent SMUD or any other entity continues to have concerns regarding the CAISO's treatment of exports under MRTU, the CAISO remains committed to working with such entities individually and through the CAISO's broader implementation activities and monthly workshops. If required, the CAISO's discussions with SMUD on this matter will continue to be documented in the CAISO's "Joint Quarterly Seams Reports" required pursuant to the Commission September 21 Order.

## V. REQUEST FOR WAIVER OF ORDER NO. 614 REQUIREMENTS

Although the clean MRTU Tariff sheets provided in Attachment B to this filing letter do contain header and footer information, the CAISO requests waiver of the requirements of Order No. 614[9] to the extent this information does not fully comport with these requirements. As the CAISO explained in the February 9, 2006 MRTU Tariff filing and the November 20 compliance filing in this proceeding, this waiver is justified because the portions of the current ISO Tariff that serve as the basis of the MRTU Tariff are likely to be amended in the normal course of business between the filing date and the

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8 See, California Independent System Operator Corporation Joint Quarterly Seams Report for the Second Quarter of 2007, *California Independent System Operator Corporation,* Docket No. ER06-615-002 (July 30, 2007).

9 *Designation of Electric Rate Schedule Sheets*, FERC Stats. & Regs., Regs. Preambles ¶ 31,096 (2000).

proposed MRTU implementation date. Moreover, in light of the recent change in the MRTU implementation date, the CAISO will need to make a filing to correct the effective date of the MRTU tariff sheets filed previously. Therefore, prior to the MRTU implementation date, the CAISO will submit tariff sheets containing the MRTU Tariff provisions approved by the Commission that fully comply with Order No. 614.

## VI. CONCLUSION

For the reasons set forth above, the CAISO respectfully requests that the Commission accept its proposed modifications to the MRTU Tariff and report concerning capacity re-sales, in compliance with the Commission's September 21 and June 25 Orders.

Respectfully submitted,

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# ATTACHMENT A

**Attachment A – Clean Sheets**

**MRTU Tariff Compliance Filing – September 28, 2007**

**P. 452 of September 2006 Order – Interim Measures for Underscheduling in the Day-Ahead Market**

**11.24 Interim Scheduling Report, Charge and Allocation.**

**11.24.1 Interim Scheduling Report.**

The CAISO will provide to each Scheduling Coordinator on a weekly basis a report of the difference between a Scheduling Coordinator's metered CAISO Demand and the total CAISO Demand scheduled by the Scheduling Coordinator in its Day-Ahead Schedule, based on available Meter Data. The CAISO shall treat such reports as confidential in accordance with Section 20. Such reports shall be prepared as provided in the applicable Business Practice Manual.

**11.24.2 Interim Scheduling Charge.**

In the event that a Scheduling Coordinator's Net Negative CAISO Demand Deviation in its applicable LAP exceeds fifteen percent (15%) of the Scheduling Coordinator's cleared total CAISO Demand as represented in its Day-Ahead Schedule in its applicable LAP for five percent (5%) or more of the total Trading Hours in any given month, the Scheduling Coordinator shall pay through the end of the applicable calendar month the monthly Interim Scheduling Charge as follows:

(a) For any given Trading Hour in which the Scheduling Coordinator's Net Negative CAISO Demand Deviation in its applicable LAP is greater than fifteen percent (15%) and less than twenty percent (20%) of the Scheduling Coordinator's cleared total CAISO Demand as represented in its Day-Ahead Schedule in its applicable LAP, the Scheduling Coordinator shall pay $150/MWh for its Net Negative CAISO Demand Deviation that is greater than fifteen percent (15%) and less than twenty percent (20%) of its cleared total CAISO Demand as represented in its Day-Ahead Schedule in the applicable LAP in that Trading Hour.

(b) For any given Trading Hour in which the Scheduling Coordinator's Net Negative CAISO Demand Deviation in its applicable LAP is greater than or equal to twenty percent (20%) of the Scheduling Coordinator's cleared total CAISO Demand as represented in its Day-Ahead Schedule in its applicable LAP, the Scheduling Coordinator shall pay $250/MWh for its Net Negative CAISO Demand Deviation greater than or equal to twenty percent (20%) of its cleared total CAISO Demand as represented in its Day-Ahead Schedule in the applicable LAP in that Trading Hour.

**11.24.3 Exemptions from the Interim Scheduling Charge.**

The Interim Scheduling Charge shall not apply to the following circumstances:

(a) For any given Trading Day for Scheduling Coordinators in each applicable LAP in which the CAISO's daily Day-Ahead peak CAISO Forecast of CAISO Demand is ninety-five percent (95%) or less than daily actual metered CAISO Demand in the respective northern and southern regions of the CAISO Control Area as further described in the Business Practice Manuals.

(b) For any given Trading Hour when a Scheduling Coordinator's peak metered CAISO Demand is less than or equal to 500 MW in a particular LAP, that Scheduling Coordinator shall not be subject to the Interim Scheduling Charge.

(c) For metered CAISO Demand by Participating Loads.

(d) For metered CAISO Demand that is MSS Load following Demand.

(e) For any given Trading Hour when the Hourly Real-Time LAP Price is less than the Day-Ahead LAP Price for the same Trading Hour in the applicable LAP.

**11.24.4 Allocation of Revenue Collected Under the Interim Scheduling Charge.**

Any revenues collected with the assessment of the Interim Scheduling Charge shall be treated as "Other Revenues" as described in Part C of Schedule 1 of Appendix F. The Interim Scheduling Charge revenues will be used to offset the revenue requirement associated with the Market Usage Charge.

**11.25 [NOT USED]**

**11.26 Wheeling Through and Wheeling Out Transactions.**

The CAISO shall calculate, account for and settle charges and payments for Wheeling Through and Wheeling Out transactions in accordance with Section 26.1.4 and Appendix N, Part C of this Tariff.

**11.27 Voltage Support and Black Start Charges.**

The CAISO shall calculate, account for and settle charges and payments for Voltage Support and Black Start as set out in Sections 11.10.1.4, 11.10.1.5, 11.10.5, 11.10.6, and the SABP Charge Computation Manual – Appendix N, Part G of this CAISO Tariff.

**11.28** The CAISO shall calculate, charge and disburse all collected default Interest in accordance with the CAISO Tariff.

**11.29 Billing and Payment Process.**

The CAISO will calculate for each charge the amounts payable by the relevant Scheduling Coordinator, CRR Holder, Black Start Generator or Participating TO for each Settlement Period of the Trading Day, and the amounts payable to that Scheduling Coordinator, CRR Holder, Black Start Generator or Participating TO for each charge for each Settlement Period of that Trading Day and shall arrive at a net amount payable for each charge by or to that Scheduling Coordinator, CRR Holder, Black Start Generator or Participating TO for each charge for that Trading Day. Each of these amounts will appear in the Initial Settlement Statement T+38BD, Initial Settlement Statement Reissue, Recalculation Settlement Statement and the Recalculation Settlement Statement T+76BD that the CAISO will provide to the relevant Scheduling Coordinator, CRR Holder, Black Start Generator or Participating TO.

# ATTACHMENT B

**Attachment B – Blacklines**

**MRTU Tariff Compliance Filing – September 28, 2007**

**P. 452 of September 2006 Order – Interim Measures for Underscheduling in the Day-Ahead Market**

* * *

**11.24 Interim Scheduling Report, Charge and Allocation.**

**11.24.1 Interim Scheduling Report.**

The CAISO will provide to each Scheduling Coordinator on a weekly basis a report of the difference between a Scheduling Coordinator's metered CAISO Demand and the total CAISO Demand scheduled by the Scheduling Coordinator in its Day-Ahead Schedule, based on available Meter Data. The CAISO shall treat such reports as confidential in accordance with Section 20. Such reports shall be prepared as provided in the applicable Business Practice Manual.

**11.24.2 Interim Scheduling Charge.**

In the event that a Scheduling Coordinator's Net Negative CAISO Demand Deviation in its applicable LAP exceeds fifteen percent (15%) of the Scheduling Coordinator's cleared total CAISO Demand as represented in its Day-Ahead Schedule in its applicable LAP for five percent (5%) or more of the total Trading Hours in any given month, the Scheduling Coordinator shall pay through the end of the applicable calendar month the monthly Interim Scheduling Charge as follows:

(a) For any given Trading Hour in which the Scheduling Coordinator's Net Negative CAISO Demand Deviation in its applicable LAP is greater than fifteen percent (15%) and less than twenty percent (20%) of the Scheduling Coordinator's cleared total CAISO Demand as represented in its Day-Ahead Schedule in its applicable LAP, the Scheduling Coordinator shall pay $150/MWh for its Net Negative CAISO Demand Deviation that is greater than fifteen percent (15%) and less than twenty percent (20%) of its cleared total CAISO Demand as represented in its Day-Ahead Schedule in the applicable LAP in that Trading Hour.

(b) For any given Trading Hour in which the Scheduling Coordinator's Net Negative CAISO Demand Deviation in its applicable LAP is greater than or equal to twenty percent (20%) of the Scheduling Coordinator's cleared total CAISO Demand as represented in its Day-Ahead Schedule in its applicable LAP, the Scheduling Coordinator shall pay $250/MWh for its Net Negative CAISO Demand Deviation greater than or equal to twenty percent (20%) of its cleared total CAISO Demand as represented in its Day-Ahead Schedule in the applicable LAP in that Trading Hour.

**11.24.3 Exemptions from the Interim Scheduling Charge.**

The Interim Scheduling Charge shall not apply to the following circumstances:

(a) For any given Trading Day for Scheduling Coordinators in each applicable LAP in which the CAISO's daily Day-Ahead peak CAISO Forecast of CAISO Demand is ninety-five percent (95%) or less than daily actual metered CAISO Demand in the respective northern and southern regions of the CAISO Control Area as further described in the Business Practice Manuals.

(b) For any given Trading Hour when a Scheduling Coordinator's peak metered CAISO Demand is less than or equal to 500 MW in a particular LAP, that Scheduling Coordinator shall not be subject to the Interim Scheduling Charge.

(c) For metered CAISO Demand by Participating Loads.

(d) For metered CAISO Demand that is MSS Load following Demand.

(e) For any given Trading Hour when the Hourly Real-Time LAP Price is less than the Day-Ahead LAP Price for the same Trading Hour in the applicable LAP.

**11.24.4 Allocation of Revenue Collected Under the Interim Scheduling Charge.**

Any revenues collected with the assessment of the Interim Scheduling Charge shall be treated as "Other Revenues" as described in Part C of Schedule 1 of Appendix F. The Interim Scheduling Charge revenues will be used to offset the revenue requirement associated with the Market Usage Charge.

* * *

# ATTACHMENT C

California ISO
Your Link to Power

California Independent
System Operator Corporation

# Memorandum

**To:** ISO Board of Governors

**From:** Charles A. King, P.E., Vice President, Market Development & Program Management

**Date:** August 29, 2007

**Re:** **MRTU Compliance Filing: Decision on Proposal to Address Potential Load Underscheduling Until Implementation of Convergence Bidding**

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***This memorandum requires Board action.***

## EXECUTIVE SUMMARY

The Federal Energy Regulatory Commission ("FERC") has directed the CAISO to develop interim measures to mitigate the potential economic incentive for Load Serving Entities ("LSEs") to underschedule in the Day-Ahead Market. These interim measures are designed to address incentives for underscheduling that may exist prior to implementation of Convergence Bidding. While the CAISO was required to submit this compliance filing no later than 180 days prior to implementation of MRTU, the CAISO requested an extension to work with stakeholders to seek resolution on final details of the proposal.

To develop these interim measures, the CAISO conducted a five-month stakeholder process that considered several proposals, ranging from simple reporting mechanisms to automated penalty structures. To address the diverse stakeholder perspective on the design of an appropriate interim measure, Management recommends adoption of an approach that is generally consistent with the recommendations of the Market Surveillance Committee ("MSC"). This approach involves the creation of confidential weekly reports by the CAISO, a bright line rule to define persistent underscheduling, and the ability to apply an Interim Scheduling Charge. The charge would be triggered if the CAISO determines that a particular Scheduling Coordinator is persistently underscheduling. This bright line rule provides a clearly defined standard for the application of this charge which would leave little room for varying interpretation.

In designing the proposal, the CAISO has worked within tight implementation constraints and has diligently considered stakeholder input to balance interests among both the load and supplier communities to present thresholds and rates that are fair, meet the intent of the FERC directive, and do not jeopardize the integrity of the MRTU markets and reliability. The proposed design of the Interim Scheduling Charge is intended to be simple and address the potential incentives for loads to underschedule in the Day-Ahead Market. Underscheduling has the effect of depressing Day-Ahead prices in a manner inconsistent with efficient market operation. Once convergence bidding is implemented, on the first anniversary of MRTU, the interim measures would end.

Though the CAISO is not typically required to bring issues of a compliance nature before the Board of Governors for decision, the controversial nature of this feature was deemed to be worthy of a thorough stakeholder process, and subsequent Board decision, as a means of building a complete public record to forward on to the FERC for its consideration.

## MOTION

> ***Moved, that the ISO Board of Governors approve the* "Proposal to Address Potential Load Underscheduling Until Implementation of Convergence Bidding,"** ***as outlined in this memorandum, and related attachments; and***
>
> ***That the ISO Board of Governors authorize Management to make all the necessary and appropriate filings with the Federal Energy Regulatory Commission to implement this proposal.***

## ISSUE STATEMENT

In the FERC proceeding on MRTU, a number of market participants have argued that the lack of convergence bidding in Release 1 could allow LSEs to strategically under-schedule and artificially suppress the Day-Ahead energy price. These entities contend that the penalties for under-scheduling implicit in the Residual Unit Commitment (RUC) process may not be sufficient to prevent under-scheduling particularly since Resource Adequacy generation units are required to bid zero into the RUC process.

Other stakeholders are not in favor of additional mechanisms to limit under-scheduling under MRTU, and have argued that the CAISO's new market design has sufficient financial incentives that discourage under-scheduling because RUC costs are allocated to the load-serving entities that under-schedule in the Day-Ahead Market. In addition to the RUC charges that are assigned to LSEs, there are also several other Real Time uplift charges that are assessed to under-scheduled Demand, as well as significant forward contracting in place by LSEs today as required under California's Resource Adequacy program that further reduces the incentives for LSEs to under-schedule in the Day-Ahead Market.

In response to these opposing viewpoints, FERC has required the CAISO to develop interim measures (until convergence bidding is in place) to prevent "uneconomic behavior" that specifically deals with "persistent under-scheduling" in the Day-Ahead time frame. The issue on which the CAISO has worked with stakeholders over the past few months is to define the nature and applicability of these short-term measures under the tight MRTU implementation constraints.

Although the CAISO believes there are already sufficient mechanisms and financial disincentives built into the new market design to deter Day-Ahead under-scheduling, the CAISO has developed an administrative solution that meets the FERC's directives, provides clear thresholds and exemptions so that LSEs can submit economic bids in the Day-Ahead Market, yet provides for a reasonable but effective charge if those thresholds on under-scheduling are crossed in a manner that is deemed to be persistent..

## OPTIONS TO SOLVE FERC'S REQUIREMENT TO ADDRESS UNDER-SCHEDULING

During the stakeholder process, several options of enforcement mechanisms were reviewed with varying levels of complexity and severity. **Attachment A** includes a summary of the options analyzed, which include mandatory self scheduling of load, submittal of forecast data, bidding requirements, and issuance of reports to FERC.

After considering many different approaches, Management recommends an approach that includes an Interim Scheduling Report, a Bright Line Rule, and an Interim Scheduling Charge that could be imposed upon specific Scheduling Coordinators if necessary. This proposal is similar in many respects to the recommendation of the Market Surveillance Committee ("MSC") and is described generally in this memorandum and more specifically in **Attachment B**.

## ATTRIBUTES AND PRINCIPLES CONSIDERED IN THE DEVELOPMENT OF A SOLUTION

Throughout the stakeholder process, the CAISO has considered the following principles for addressing the issue of potential Day-Ahead underscheduling under MRTU until Convergence Bidding is implemented. The first five principles directly address FERC's concerns. The last two are additional goals that have been added by the CAISO.

1) The measures can be implemented at the start of MRTU. As such, any system requirements cannot be overly complex and cause a delay in the start of MRTU. The CAISO does not have supplemental resources to assign to this initiative. The interim measures, therefore, must not deter from other critical projects supporting the implementation of MRTU.

2) The measures are "interim" until Convergence Bidding is implemented. Again, simplicity is encouraged, as the measures are meant to be temporary.

3) They do not prevent LSEs from taking steps to reduce the costs of serving load.

4) They strive to prevent uneconomic behavior.

5) They address "persistent" underscheduling in the Day-Ahead Market on occasions when energy prices suggest that it would be economic to buy in the Day-Ahead Market (The exact intent of the term "persistent" has been debated throughout the stakeholder process, as it is not a defined term in the MRTU tariff).

6) They do not produce a situation where there is the potential for the exercise of market power on the supply side.

7) The rules do not negatively influence the integrity of the CAISO markets and grid reliability.

**MANAGEMENT RECOMMENDATION**

Management recommends that the CAISO implement an Interim Scheduling Charge that would be assessed to load serving scheduling coordinators that breach explicit Day-Ahead Market scheduling thresholds. The CAISO will implement the Interim Scheduling Charge when a particular Scheduling Coordinator is engaging in persistent and uneconomic load under-scheduling as defined by the bright line rule. The CAISO would provide load serving SCs with a confidential weekly "Interim Scheduling Report" to inform them of their performance in relation to the scheduling charge thresholds.

The Interim Scheduling Charge would consist of a rate of $150/MWh when metered load is 15% greater than a Scheduling Coordinator's cleared Day-Ahead demand, and increase to $250/MWh when metered load exceeds 20% of cleared demand in the Day-Ahead Market. The CAISO Management also proposes targeted exemptions to this charge so as not to unfairly penalize LSEs for load forecast error or participation in the Real Time Market for legitimate economic reasons and to keep the design simple and implementable for the period of time when these scheduling requirements are in place.

Once triggered, any Interim Scheduling Charges would be assessed on a going forward basis, rather than being imposed on a retroactive basis. The revenues collected from this charge would reduce a component of the CAISO's Grid Management Charge (GMC) so that all market participants would benefit, and not just load which pays most of the GMC.

The specific characteristics of the charge, which would be assessed monthly, are included as Attachment B. These measures would be terminated at the initiation of convergence bidding. The proposed design of this new charge is intended to be straight-forward and capable of being implemented at the start of MRTU.

**RECOMMENDATIONS FROM THE MSC AND THE DEPARTMENT OF MARKET MONITORING**

Members of the MSC have participated in the stakeholder process and considered the competing proposals. On July 2, the MSC unanimously adopted a formal opinion recommending a hybrid approach. The opinion is provided to the Board in conjunction with this memorandum.

The Department of Market Monitoring (DMM) also provided written comments that helped inform Management's decision, and are included as part of their monthly report to the Board.

## POSITIONS OF THE PARTIES

A matrix that summarizes stakeholder views on the options that were considered and the various features of this proposal is included as **Attachment D**. General comments related to the design of the Interim Scheduling Charge include:

Thresholds and Rates The design of the charge does not completely satisfy all concerns raised by stakeholders. Some have conveyed that the threshold should be 5% to prevent any potential leverage of prices in the Day-Ahead Market. LSEs, on the other hand, have conveyed that the bandwidth should be much larger so as not to deter legitimate economic bidding, and to better address only "persistent" underscheduling. LSEs are concerned that with strict rules, they would be forced to Self Schedule to avoid the charge, thus resulting in unpredictable and economically inefficient outcomes. With regard to the proposed $/MWh rates, they are perceived as too high by LSEs, and too low by the supplier community.

Management's recommended approach strikes a balance between these perspectives. The combination of a threshold of 15% in conjunction with a high $/MWh charge provides a strong incentive to schedule load in the Day-Ahead Market while providing enough flexibility for LSEs to economically bid their load requirements.

Bright Line Rule: After the July Board of Governors meeting, the CAISO sought stakeholder input to develop a bright line rule to define "persistent" underscheduling. Creation of the bright line rule would alleviate the potential for any ambiguity and uncertainty, and would be a clearly defined standard which would leave little room for varying interpretation. The CAISO considered stakeholder feedback on two proposed options for the bright line trigger. Ultimately, the CAISO recommends a value of 36 hours per month (which equates to five percent of the hours per month) to limit scheduling behavior outside of the charge threshold.

Small Load: Energy Service Providers (ESPs) contend that the thresholds should be based on system-wide net load deviations, and not by Load Aggregation Point (LAP). ESPs, in particular, schedule in all three LAPS, and therefore believe the threshold should be system-wide. Since prices under MRTU are computed on a LAP basis, the CAISO does not believe that it is appropriate to net deviations on a system wide basis. An SC could significantly underschedule in one LAP in an attempt to lower the price while overscheduling in another LAP to prevent the application of the charge. However, the CAISO acknowledges that small LSEs have limited ability to influence prices in the Day-Ahead Market. Therefore, in working through the stakeholder process and conducting analysis on historical data, the CAISO has proposed a small load exemption of 500 MW per hour per LAP. The CAISO's analysis has shown that such an exemption would not limit the effectiveness of the Interim Scheduling Charge and would ensure that small LSEs are not unfairly penalized where a relatively small MW deviation could result in a large percentage of underscheduled load.

Further explanation and justification of this new value is included as **Attachment C.**

Load Forecast Exemption: Many LSEs conveyed that the load forecast exemption should be by Utility Distribution Company ,not system wide. Often, the regional load forecast data does not coincide with the CAISO-system wide forecast, making the system wide exemption ineffective. The CAISO agrees that a system-wide load forecast error exemption creates too much risk for LSEs, and has therefore, modified its proposal to include the exemption by region.

Price Exemption: The CAISO also added an exemption in its last round of stakeholder meetings to exempt hours when the Real Time Market price is less than the Day-Ahead Market price, so as not to prevent participation in the Real Time Market for true economic reasons.

Some stakeholders have conveyed that they do not prefer the Interim Scheduling Charge, and would prefer other options such as an Interim Scheduling Report to be provided to FERC. Others continued to emphasize that the CAISO should pursue a "market solution" and should rely on financial incentives already built into the MRTU design.

The CAISO agrees that the current financial incentives built into the MRTU design, as well as the RUC process are sufficient tools for maintaining grid reliability and market efficiency. As discussed earlier in this memorandum, however, Management has concluded that additional interim measures are required to meet the intent of the FERC Orders. The management proposal brought forth in this recommendation strikes a just and reasonable balance among a variety of competing alternatives and stakeholder positions, while achieving all of the guidelines articulated by the FERC in this regard.

## CONCLUSION

Management recommends that the Board approve this proposal and authorize Management to file the associated tariff changes with FERC, and to implement these changes as needed to achieve the scheduled startup of MRTU.

## Attachment A

## Options Considered for Scheduling Requirement Under MRTU

"Forecast versus Vertical Demand Bid": Under this option, LSEs would Self Schedule a percentage (e.g. 95%) of their load in the Day-Ahead Market (DAM). The LSE would be a price taker for the amount of load that is Self Scheduled. In addition, the LSE would submit to the CAISO their forecasted load data by a set interval (e.g. hourly) prior to the DAM. To ensure compliance, the CAISO would compare the forecasted load by LAP with the amount that is Self Scheduled to ensure that the correct amount is Self Scheduled in the DAM by LAP. The SC would be subjected to the Enforcement Protocols in the Section 37 of the MRTU Tariff, which is a general requirement that participants comply with all provisions of the CAISO Tariff.

After careful consideration, the CAISO determined that the vertical demand bid option does not meet the objectives outlined in the two FERC Orders. This option reduces the value of the DAM, and would prevent LSEs from taking steps to reduce the costs of serving load. Furthermore, the CAISO identified that this option is not compatible with the new Demand Response initiatives to be implemented at the start of MRTU (i.e., submitting economic load bids designed to accommodate LSE demand response programs).

"Forecast verses Maximum Amount Bid": The CAISO would compare the LSE's DA forecast (by LAP) versus the maximum quantity that is bid in the DAM (by LAP) to ensure that a defined percentage (possibly 90% or 95%) is bid into the DAM. Unlike the "vertical demand curve" option, the LSE could submit Economic Bids (price-quantity bids). This option does not require the bids to clear. In effect, this option is analogous to a "must-bid" requirement for suppliers with a relatively high price cap. The SC would be subjected to the Enforcement Protocols in Section 37 of the MRTU Tariff, which is a general requirement that participants comply with all provisions of the CAISO Tariff.

LSEs preferred this approach and emphasized the benefits of maintaining the integrity of the DAM, and having the ability to submit economic bids. While this option required some exchange and evaluation of forecast data, the added complexity was seen to be a reasonable trade-off to avoid the concerns associated with implementation of a penalty. After further research and consideration of the stakeholder input, the CAISO concluded that without the establishment of a price floor, this option does not meet the standards outlined in the FERC directive, in that it does not address the potential economic incentive for LSEs to underschedule in the DAM. The CAISO also has concluded that reaching consensus on the establishment of a bid-price floor is not feasible at this time.

"Incentives Built into MRTU Design" This option highlights the financial incentives already built into MRTU that are sufficient to deter underscheduling, while still allowing LSEs the flexibility to avoid supplier market power. This option also suggested implementation of monitoring provisions for the Department of Market Monitoring (DMM) to ensure that LSE DAM bidding and scheduling practices are not depressing prices below competitive levels. In the event that DMM does find LSE behavior to be problematic, the CAISO could then trigger a penalty.

Many LSEs were in favor of this option. However, some expressed reluctance to fully support this option without explicit details about the "trigger" concept. DMM pointed out the challenges they would face if tasked with identifying whether underscheduling is having a significant impact on DAM prices. Alternatively, some stakeholders were strongly opposed to this option, and they contended in their comments that raising the price of serving Demand in Real Time does not address the "incentive" to under-schedule in the DAM. The CAISO concluded that this option may not be comprehensive enough to be considered by the FERC as a new interim measure to prevent Day-Ahead Underscheduling. The CAISO also concluded that implementation of any financial consequences via a trigger must be based on simple and transparent metrics.

"Interim Scheduling Charge" This option involves the creation of a new settlements charged that would be assessed to underscheduled load. The design of this option went through several iterations during the stakeholder process to refine the parameters to achieve the goals outlined in the FERC directive. Proposed exemptions, bandwidths, and rates were debated. Ultimately, the CAISO settled on a variation of this option as part of a two-step solution, the Interim Scheduling Report and Charge, which is imposed if persistent underscheduling is determined by the bright line rule as further described below and in Attachment B.

"Interim Scheduling Report and Charge with FERC Review" This option includes the same thresholds as the Interim Scheduling Charge, but results in the creation of a report that would be submitted to the FERC and publicly published when net negative load deviations exceed the identified thresholds. Under this scenario, any enforcement actions would be within the sole authority of FERC. The CAISO would maintain the ability to implement the Interim Scheduling Charge, if directed to do so. While some stakeholders preferred this option, others have stated that by leaving the implementation to FERC creates too much uncertainty, and that the CAISO tariff should provide clear thresholds that define appropriate market behavior. It should also define the consequences of exceeding those thresholds, and provide a direct mechanism by which the consequences are imposed. This approach was presented for "information only" at the July 18 CAISO Board of Governors meeting.

"Interim Scheduling Report and Charge with Bright Line Rule" This option includes the same thresholds as the Interim Scheduling Charge, but results in the creation of a report by the CAISO that includes a bright line rule that defines persistent underscheduling. The information would not be submitted to FERC for review, and the CAISO would be responsible for determining whether the Interim Scheduling Charge will be applied. After careful consideration of stakeholder feedback, the CAISO determined that the bright line trigger should be set at 36 hours per month to limit scheduling behavior outside of the charge threshold and to allow for load serving SCs to alter their behavior to avoid future assessments of the charge. If triggered, the CAISO would implement the Interim Scheduling Charge.

# Attachment B

## Design of Interim Scheduling Report and Charge

**Report:**

The CAISO will provide confidential reports to SCs on a weekly basis as metered data become available in order to provide the timeliest data possible.

SCs will be subject to the Interim Scheduling charge if they exceed the value established in the bright line rule. The "bright line" is based on the number of incidents per month in excess of 36 hours, above the 15% threshold.
Any Interim Scheduling Charges would be incurred on a going forward basis from the time the CAISO has determined that the SC exceeds the bright line criteria rather than being imposed on a retroactive basis.

**Rates and Thresholds:**

For any given Trading Hour in which the Scheduling Coordinator's Net Negative Deviation of CAISO Demand in its applicable LAP is greater than fifteen (15) and less than twenty (20) percent of the Scheduling Coordinator's cleared total CAISO Demand as represented in its Day-Ahead Schedule in its applicable LAP, the Scheduling Coordinator shall pay $150 /MWh for its Net Negative Deviation of CAISO Demand that is greater than fifteen (15) and less than twenty (20) percent of its cleared total CAISO Demand as represented in its Day-Ahead Schedule in the applicable LAP in that Trading Hour.

For any given Trading Hour in which the Scheduling Coordinator's Net Negative Deviation of CAISO Demand in its applicable LAP is greater than or equal to twenty (20) percent of the Scheduling Coordinator's cleared total CAISO Demand as represented in its Day-Ahead Schedule in its applicable LAP, the Scheduling Coordinator shall pay $250 /MWh for its Net Negative Deviation of CAISO Demand greater than or equal to twenty (20) percent of its cleared total CAISO Demand as represented in its Day-Ahead Schedule in the applicable LAP in that Trading Hour.

**Exemptions:**

Load Forecast For any given Trading Day for each applicable LAP in which that Trading Day's CAISO's daily peak Demand Forecast is 95% (or less) than actual metered CAISO Demand in the respective northern and southern regions of the CAISO Control Area as further described in the Business Practice Manuals.

Small Load For any given Trading Hour when a Scheduling Coordinator's peak metered CAISO Demand is less than or equal to 500 MW in a particular LAP.

Participating Load All metered CAISO Demand by Participating Load shall not be subject to the Interim Under-Scheduling Charge.

Load Following Meter Sub-System All metered CAISO Demand that is MSS Load Following Demand shall not be subject to the Interim Under-Scheduling Charge.

Price Difference For any given Trading Hours when the Hourly Real-Time LAP Price is less than the Day-Ahead LAP Price for the same Trading Hour.

**Allocation of Revenue Collected Under the Interim Under-Scheduling Charge** Any revenues collected with the assessment of the Interim Under-Scheduling Charge shall be treated as "Other Revenues" as indicated in Schedule F, of Part C of the CAISO Tariff. The Interim Under-Scheduling Charge revenues will be used to offset the revenue requirement associated with the Market Usage Charge

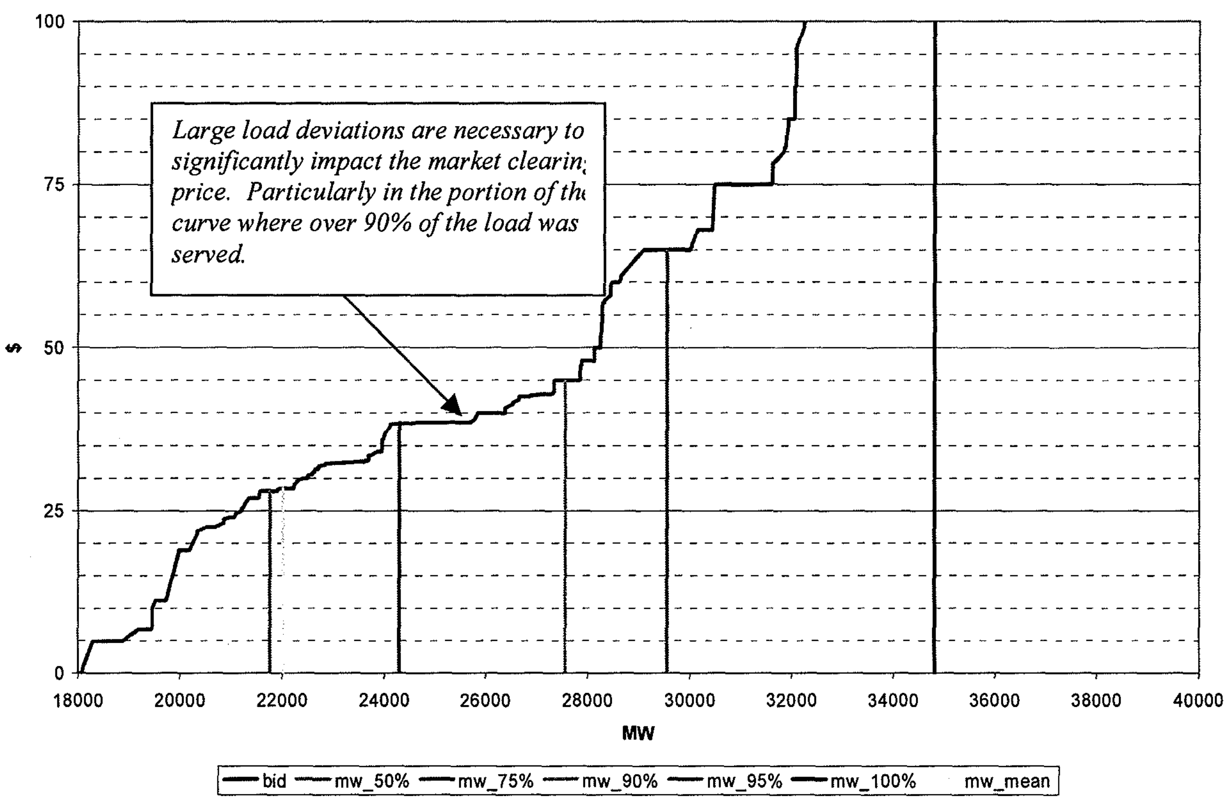
# Attachment C

## Rationale for Small Load Exemption

The FERC in its September 21, 2006 Order, stated its concern that without convergence bidding, participants with market power may have the ability to price discriminate between the Day-Ahead and Real-Time Markets, resulting in a forward price that is systematically different than the expected Real-Time price. The CAISO has structured the Interim Scheduling Charge to address this concern and in doing so has included an exemption from the charge for smaller LSEs that would not have the ability to adversely impact the DAM price. In addition, the small load exemption was included in the design of the charge to ensure that smaller LSEs that tend to have more volatile loads are not adversely impacted given the more uncertain nature of their loads. For example, a small LSE that serves only a few large industrial loads could easily see its load fluctuate significantly in response to a change in operations at one of the industrial facilities that it serves. Such an occurrence could easily push the small LSE past the 15 percent Day-Ahead scheduling requirement threshold, yet have a minimal impact on the DAM price. A similar event would have a much smaller impact on the load deviation of a large LSE that serves a diverse customer base.

The CAISO further examined the small load exemption to better understand the level of underscheduled Demand that could have a significant price impact on the Day Ahead Market price. The CAISO examined a typical summer day supply curve from the California Power Exchange (PX), which operated a day-ahead energy market from 1998 through 2000. We believe that this is a reasonable approach to analyzing the potential impact on price of DAM underscheduling as this represents the last available period for a day-ahead supply curve in California that was not impacted by the severe market dysfunction of 2000 and 2001. The actual day-ahead market supply curves under MRTU will likely be extended and have a somewhat lower slope at most load levels due to significant additions of more efficient generation resources over the past eight years and the retirement of several resources that would likely be found on the steeper, higher cost sections of the curve.

**Power Exchange DA Supply Curve - July 14, 1999 HE 17**



As part of the analysis of the PX supply curve shown above, the mean load during served by the day ahead market in 1999 was 22,000 MWs. We also found that 95 percent of the load served by the DA market was served at load levels that were less than 29,500 MWs. Therefore, we found that it was reasonable to focus on portion of the supply curve below this level, represented by the vertical red line in the figure. 90th, 75th, and 50th percentiles are also illustrated on the figure. As illustrated by the curve, load swings of plus or minus 1,000 MWs from the average Demand (e.g., 21,000 MWs or 22,000 MWs), change the price by about $5.00. At this point on the supply curve, therefore, we find that even at the 1000 MW level of LSEs would have a limited ability to significantly impact the DAM clearing price.

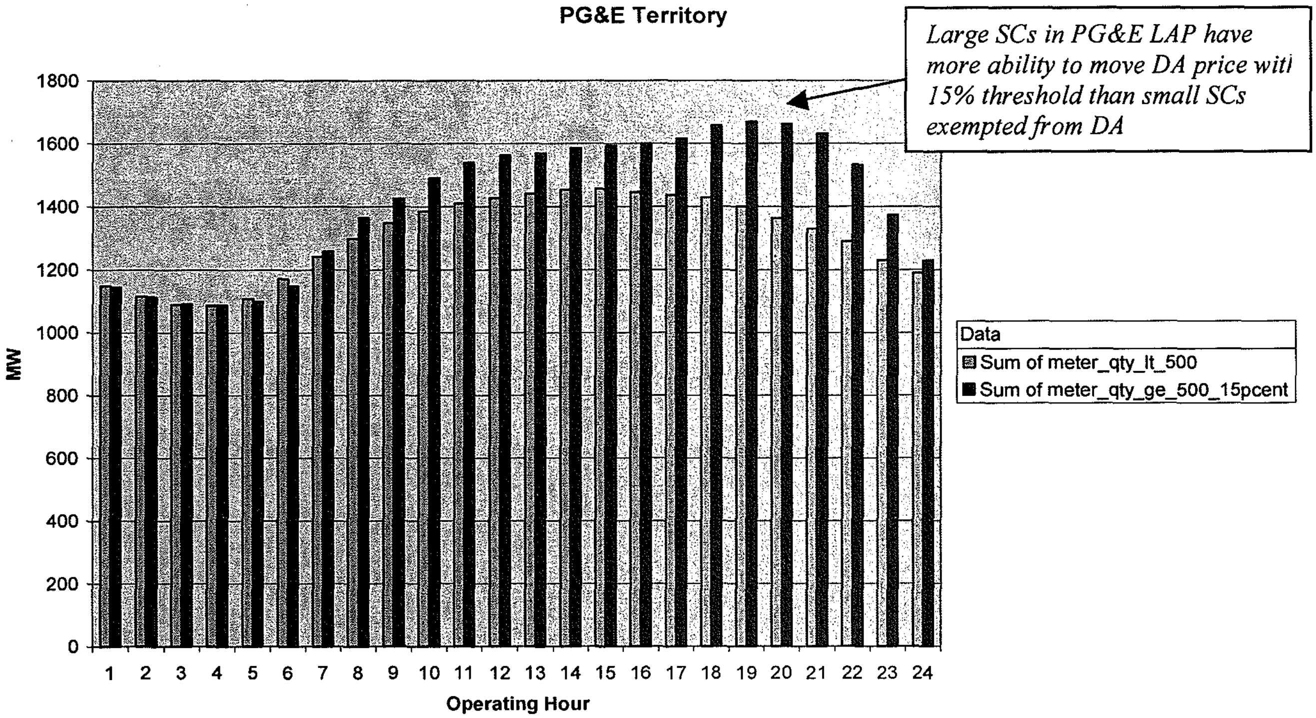
Finally, the slope of the supply curve tends to get steeper at higher load levels and load swings have a greater impact on price. This implies that underscheduling during higher demand levels would have a more significant impact on the Day-Ahead energy price. However, under higher demand levels it is also likely that the price of energy in the Real Time Market will be higher; thus resulting in a disincentive for LSEs to rely on the Real Time Market.

This graph provides an example of why under-scheduling smaller volumes of Demand in the DAM would not have a significant impact on the DA energy price. For this reason, the CAISO is recommending that the small load exemption be revised to be 500 MWs per hour per LAP. Assuming that underscheduling in the DAM market would result in price reductions in the DAM that are similar to price increases in the Real-Time Market, LSEs would effectively be limited to underscheduling less than half of their total load in the DAM for this strategy to be profitable. Therefore the effective small load exemption is well below the 500 MW level proposed in the interim scheduling charge. For example, an LSE with a 500 MW load could only underschedule 250 MW or less in the DAM in an attempt to profitably move prices lower in the DAM provided that there would be a similar increase in the Real-Time Market price.

One stakeholder argued that providing the small load exemption could result in enabling the small LSEs to move DAM prices if all of the LSEs under the exemption were to concurrently underschedule which would result in transferring potentially thousands of MWs from the DAM to Real-Time Market. The CAISO does not find this to be a likely outcome because it would require wide spread collusion among the smaller LSEs that would be illegal under antitrust laws. Such behavior will be closely monitored. Even if all of the SCs in a particular LAP were to underschedule their entire load, which as described above would not be a profitable strategy, historical analysis of 2006 data shows that such behavior would almost always have a smaller impact on price than if the large SC (SCs greater than 500 MW) in a particular LAP were to underschedule 15 percent of their load requirements, as allowed by the interim scheduling requirement. Three charts are shown below that compare the aggregate hourly average load loads of SCs with less than 500 MW load to 15 percent of the load of SCs with greater than 500 MW of load. As shown in the charts, in the PG&E and SCE territories, 15 percent of the large SC load is greater during all hours than the sum of the small SC load. In the SDG&E territory, the sum of the small SC load is greater than the large SC load; however, the loads become comparable during the higher load hours. The CAISO finds that this further demonstrates that the 500 MW exemption level is an appropriate and fair break point for exempting small loads from the application of the Interim Scheduling Charge.

UDC_ID PGAE

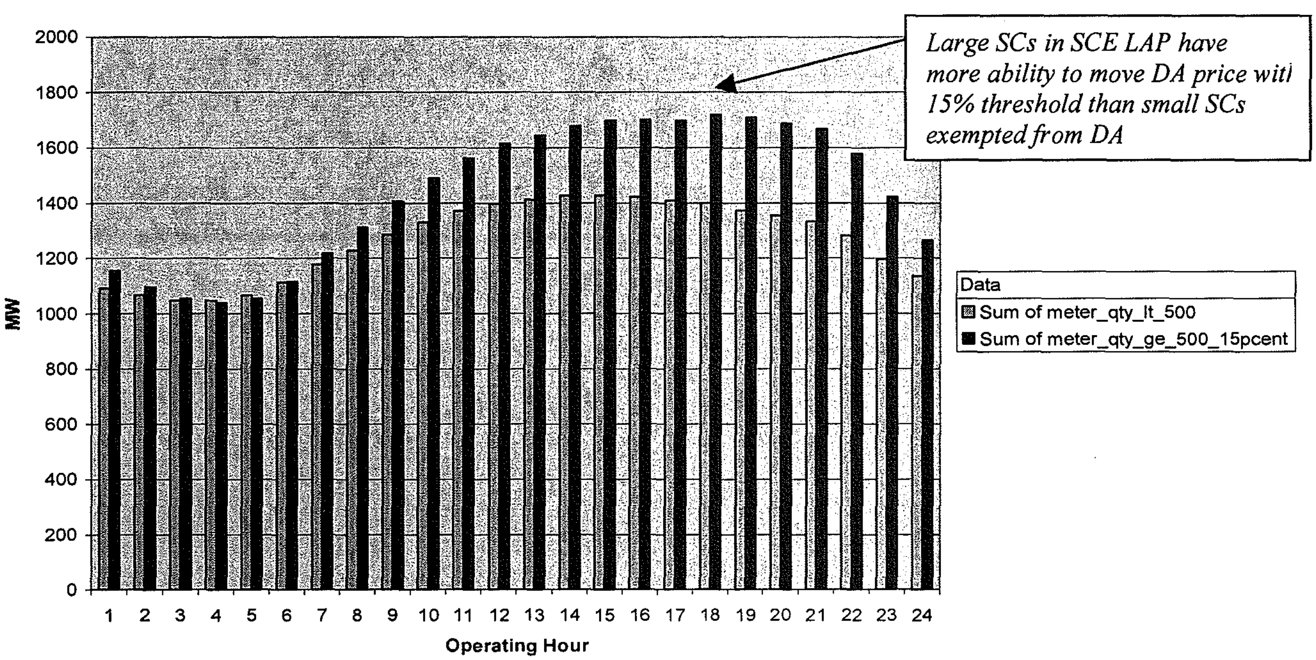
**2006 Small LSE vs. Large LSE Load Analysis**
**PG&E Territory**



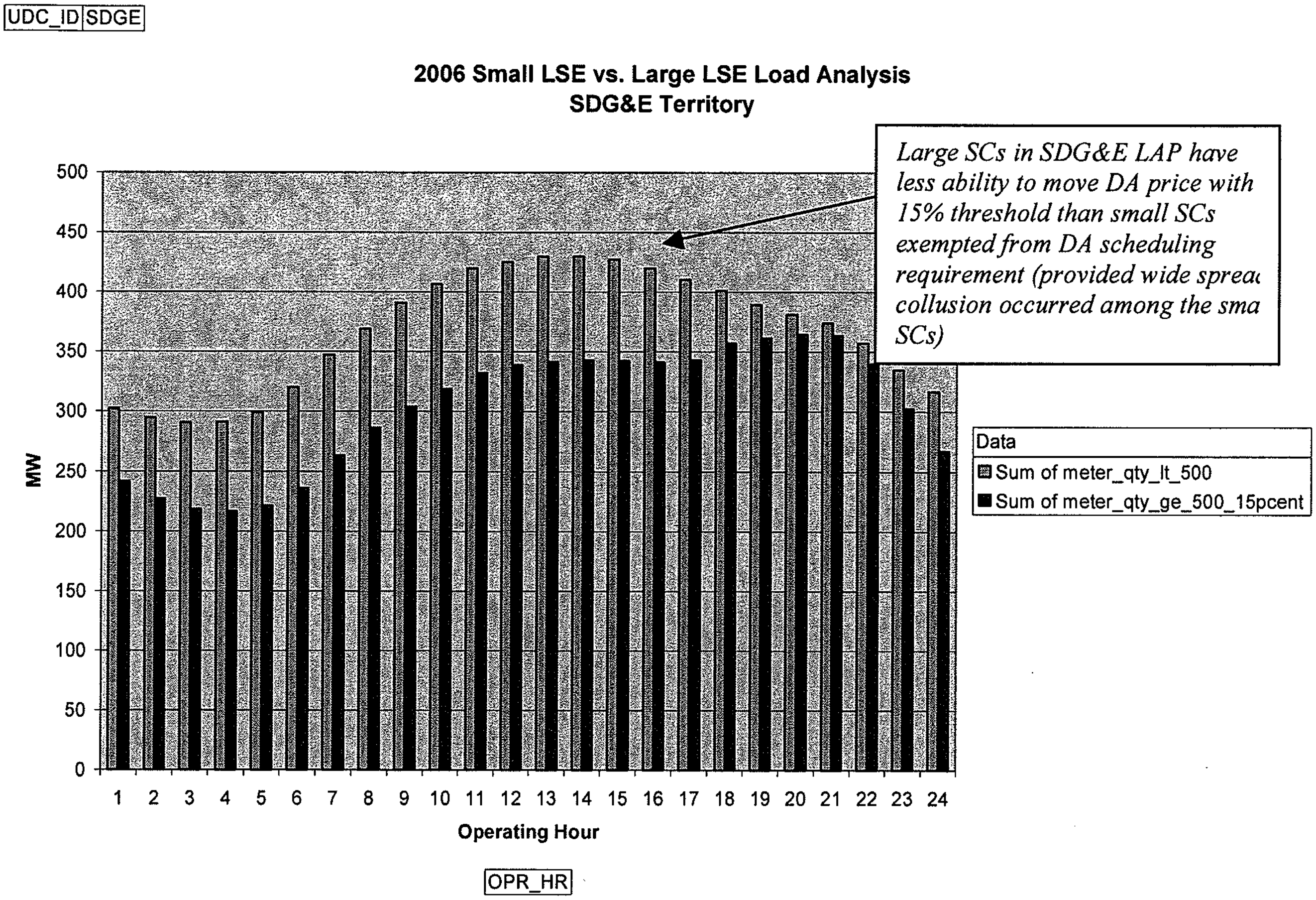

OPR_HR

UDC_ID SCE

**2006 Small LSE vs. Large LSE Load Analysis**
**SCE Territory**




OPR_HR




By increasing this exemption, the CAISO does not intend to discriminate against SCs with larger quantities of Demand that is scheduled in the DAM. The purpose of the interim measures, per the FERC Order, is to prevent under-scheduling that could potentially impact the price in the DAM. LSEs with Demand below this proposed exempted value of 500 MW per LAP would not have the ability to significantly impact the DAM price.

**Attachment D**

# Stakeholder Process: Day Ahead Scheduling Requirement Under MRTU

## Summary of Submitted Comments

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

- Round One, April 27, 2007
- Round Two, May 23, 2007
- Round Three, June 22, 2007
- Round Four, August 14, 2007

**Stakeholder comments are posted at: http://www.caiso.com/1bf4/1bf48b33187a0.html**

**Other stakeholder efforts include:**

- MSC Meeting: February 13, 2007
- Five conference calls with stakeholders: May 9, 2007, May 29, 2007, June 28, 2007, July 12, 2007 and September 14, 2007.
- Two In Person Stakeholder Meetings with Participation from the MSC: June 6, 2007 and August 10, 2007
- MSC Conference Call: July 2, 2007

| Management Proposal | SCE | PG&E | AReM | Constellation | Management Response |
|---|---|---|---|---|---|
| **(1) Bright Line Rule**<br><br>The CAISO recommends that the "bright line" be set at 36 hours per month. If the SC exceeds this value, SCs are subject to the Interim Scheduling Charge (with applicable thresholds and exemptions). | **Support**<br><br>Supports 36 per month bright line rule. | **Conditional**<br><br>Prefers an annual value for the bright line rule. Also prefers that data be sent to FERC for review. | **Support**<br><br>Initially AReM expressed preference for report to be sent to FERC. However, AReM is accepting of 36 hour bright line rule. | **Support**<br><br>Agrees with recommendation. | CAISO determined that the bright line trigger should be set at 36 hours per month to limit scheduling behavior outside of the charge threshold and to allow for load serving SCs to alter their behavior to avoid future assessments of the charge. |
| **(2) Interim Scheduling Charge Thresholds**<br><br>The charge would be imposed at a rate of $150/MWh when metered load is 15% greater than a Scheduling Coordinator's cleared Day-Ahead demand, and increase to $250/MWh when metered load exceeds 20% of cleared demand in the Day-Ahead Market. | **Support** | **Support** | **Support** | **Conditional**<br><br>Constellation expressed a preference for a smaller threshold (10%). | The clear thresholds enable LSEs to submit economic bids in the Day-Ahead Market. The $/MWh rates provide a severe enough charge to deter underscheduling. |
| **(3) Interim Scheduling Charge Exemptions**<br><br>Exemptions include (a) small load, (b) missed load forecast, and (c) price differential between the Day Ahead and Real Time markets. | **Support and Oppose**<br><br>SCE opposes the 500 MW exemption and states that it is discriminatory. SCE supports the other proposed exemptions. | **Support and Oppose**<br><br>PG&E also opposes the 500 MW exemption, but supports the other proposed exemptions. | **Support**<br><br>AReM and CMTA contend that the ESP business model warrants a 500 MW per LAP exemption. | **Support** | The recommended exemptions enable LSEs to economically bid in the Day-Ahead Market thus reducing the potential for over-scheduling. |

**Note:** Earlier in the stakeholder process, stakeholders representing the supply community conveyed that the CAISO should pursue a market solution or a more restrictive scheduling requirement, and they do not support Management's proposal. LSEs also consistently represented that the CAISO should rely on financial incentives already built into the MRTU design.

# ATTACHMENT D

California ISO
Your Link to Power

California Independent
System Operator Corporation

# California ISO

## Refinements to Proposal for Interim Measures to Address Underscheduling Under MRTU

**August 2, 2007**

# Refinements to Proposal for Interim Measures to Prevent Underscheduling Under MRTU

## A. Purpose

The CAISO is continuing to refine its proposed interim measures to prevent underscheduling until convergence bidding[1] is implemented. During the July 18, 2007 Board of Governors meeting, the CAISO management announced that the current proposal would be further updated before making a compliance filing with the FERC.[2] The CAISO will ask FERC for an extension of the compliance filing date from August 3, 2007 to September 28, 2007.[3]

## B. Summary of Existing Proposal

A proposal for interim measures to prevent underscheduling under MRTU was presented for "information only" at the July 18 CAISO Board of Governors meeting. The July 18 proposal recommended that the CAISO create a weekly "Interim Scheduling Report" that would be submitted to the FERC, along with a potential "Interim Scheduling Charge" that could be applied to individual Scheduling Coordinators. The CAISO would be prepared to implement the Interim Scheduling Charge if FERC determines a particular Scheduling Coordinator is engaging in persistent and uneconomic load under-scheduling.

If applied, the Interim Scheduling Charge would be imposed at a rate of $150/MWh when metered load is 15% greater than a Scheduling Coordinator's cleared Day Ahead (DA) demand, and increase to $250/MWh when metered load exceeds cleared demand in the Day Ahead Market (DAM) by 20% or more. The proposal also includes exemptions to this charge[4] so as not to unfairly penalize LSEs for load forecast error or participation in the Real Time market for legitimate economic reasons.

Once triggered, any Interim Scheduling charges would be assessed on a going forward basis, rather than being imposed on a retroactive basis. The revenues collected from this charge would reduce a component of the CAISO's Grid Management Charge (GMC) so that all market participants would benefit.

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[1] Convergence bidding is a market feature that involves the submission of bids to buy or sell Energy in the DAM that will ultimately not be consumed or produced in Real-Time, which results in the convergence of Day-Ahead and Real-Time prices. Convergence Bids represent financial transactions, are submitted like other bids, and are recognized by system operators as not being physical.

[2] Board documentation with background information regarding this effort can be found at the following link: http://www.caiso.com/1c17/1c17bca370d30.html. Other related documentation regarding this effort can be found under MRTU Policy Initiatives at the following link: http://www.caiso.com/1bf4/1bf48b33187a0.html

[3] *California Independent System Operator Corporation,* 116 FERC ¶ 61,274 (2006) at P 452.

The specific characteristics of the charge, which would be assessed monthly, are described at the following link: http://www.caiso.com/1c18/1c18ba561d06.pdf. These measures would be terminated at the initiation of convergence bidding. The proposed design of this new charge is intended to be straight-forward, simple, and be feasible for implementation at the start of MRTU.

## C. CAISO Management Suggests Further Refining Proposal

The CAISO developed the "hybrid" report and charge approach, prior to the July 18 Board meeting, to be consistent with recommendations provided by the MSC in their July 2, 2007 Opinion, posted at the following link: http://www.caiso.com/1c0b/1c0bf54e55230.pdf.

The CAISO acknowledges stakeholder feedback which raises concerns regarding market uncertainty associated with the FERC-based approach. After further consideration of other key factors[5], the CAISO management determined that the proposal should be further refined to include a "bright line" rule that would trigger the Interim Scheduling Charge, as opposed to offering the Interim Scheduling Report to FERC for their review and evaluation. CAISO Management also recognized that with the brief implementation timeframe (until convergence bidding is implemented), that the proposed interim measures would need to be straight forward and economic to implement. The CAISO management concluded that the provision of an Interim Scheduling Report to the FERC may not achieve this goal, and that this feature should be further refined with stakeholder input to create bright line rules that result in predictable and consistent outcomes.

## D. Suggested Modifications

The CAISO proposes the following **four** modifications to the existing proposal:

(1) CAISO collects and reviews data instead of FERC:

a. The CAISO proposes that the same data collected by the Interim Scheduling Report is collected and reviewed by the CAISO, instead of the FERC;

b. The Interim Scheduling Report would not be sent to the FERC; and,

c. The CAISO will send the weekly report to the SCs. Due to the lag in CAISO settlements, the reports cannot be provided until about T+60 days, which could be after an SC exceeds the threshold for triggering the Interim Scheduling Charge.

[5] These factors include stakeholder input during the July 13 stakeholder conference call, written comments provided by the DMM at the following link: http://www.caiso.com/1c18/1c18dce021f20.pdf, and earlier stakeholder comments related to this topic posted at the following link: http://www.caiso.com/1bf4/1bf48b33187a0.html

(2) The Bright Line Rule

Before implementing the underscheduling charge, the CAISO will review the information collected on the Interim Scheduling Report to validate whether there has been persistent underscheduling. To alleviate the potential for any ambiguity and uncertainty surrounding this review, the CAISO recommends the creation of a bright line rule to define "persistent" underscheduling before triggering the Interim Scheduling Charge. This test would be a clearly defined standard which would leaves little room for varying interpretation.

The CAISO recommends that the "bright line" be based on the number of incidents (hours) that the SC has crossed the 15% threshold, and is considering two options for defining the number of incidents: (a) hours per month above 15%, or (b) total hours during interim period above 15%.

a. Hours per month – Under this option, the Interim Scheduling Charge (with thresholds and exemptions[6]) would be triggered during the calendar month after the SC violates the 15% threshold over 36 times per month[7]. After thirty-six hours above the 15% threshold, the SC would be subject to the Interim Scheduling Charge (with previously defined thresholds and exemptions) for the same calendar month, on a going forward basis. The SC would start over with a "clean slate" (i.e. would not be subject to charge unless they did not again exceed the trigger) in the following calendar month.

b. Total Hours During the Interim Period - Under this option, the Interim Scheduling Charge (with thresholds and exemptions) would be triggered after the SC violates the 15% threshold 438 times (five percent of total hours per year) during the period that the interim measures are in place.[8] After 438 times, the SC would be subject to the Interim Scheduling Charge (with the same thresholds and exemptions) on a going forward basis for the remaining time that the Interim Scheduling Charge is in effect. This approach will be easier for the CAISO to implement because it will be a one time application, and would not involve monitoring and applying the values monthly.

The CAISO also considered earlier stakeholder comments regarding the definition of "persistent" underscheduling to help define these suggested values.

Interim Scheduling Charge Thresholds While the MSC Opinion suggests tightening the thresholds for the Interim Scheduling Charge, the CAISO recommends leaving the thresholds at the 15% and 20% values, as previously recommended. If the Interim Scheduling Charge thresholds were to be lowered, the bright line rule would need to be relaxed to achieve the same goal.

In making this determination, the CAISO reviewed earlier stakeholder input on this topic, and reviewed practices at other ISOs. For example, according to the Midwest ISO Tariff, one of the four criteria used to trigger mitigation in the form of a load scheduling requirement is when one or

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[7] Thirty-six hours equals five percent of the hours in the month.

[8] Four hundred thirty-eight hours equals five percent of the total hours in a year (8760 hours x 5%).

more participants have been purchasing more than 10% of their loads in the real time market. The five percent bright line rule, therefore, is less than the value in place at MISO, thus justifying the larger Interim Scheduling Requirement threshold of 15%. The CAISO, therefore, does not recommend modifying these values at this time.

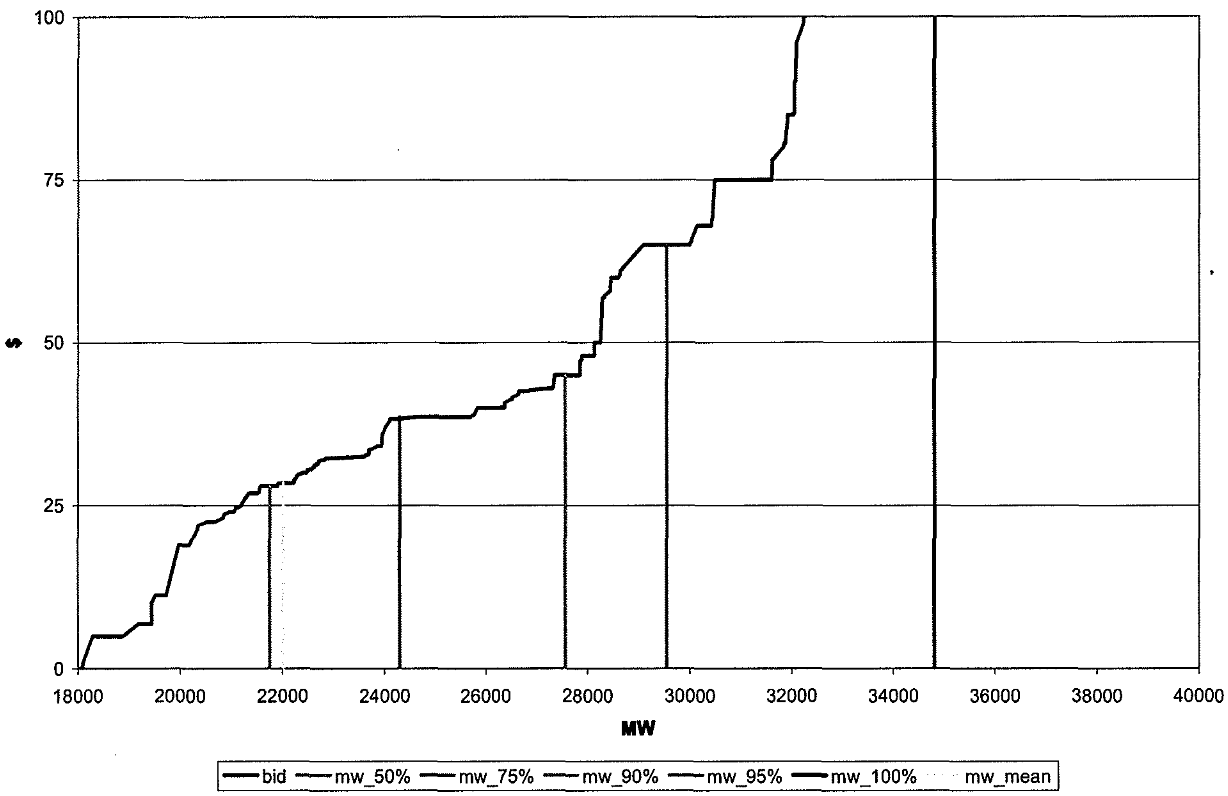
(3) Small Load Exemption

In response to concerns raised about the 250 MW per hour small load exemption, the CAISO has further researched this topic to ensure that the small load exemption (1) does not discriminate against larger SCs, and (2) prevents smaller LSEs from being unduly harmed.

The intent of the small load exemption is to prevent the application of the Interim Scheduling Charge to SCs that do not have enough load to significantly move DAM prices by underscheduling in the DAM. It is unlikely that smaller LSEs who may potentially underschedule in the DAM, will have any influence on the DA energy price due to the smaller volumes of energy they procure. Moreover, many of these SCs may serve volatile industrial load that may need to rely on the real time market for operational and valid economic reasons. They also may conduct business in all three LAPS and contend that the 15% threshold does not provide them with the same level of protection from the Interim Scheduling Charge for situations when under-scheduling in the DAM occurs for valid economic reasons.

The CAISO, therefore, has reexamined the small load exemption to better understand the level of Demand that would need to be underscheduled to have a price impact in the DAM. The PX supply curve shown below represents a typical hour in the history of the PX DAM.

**Power Exchange DA Supply Curve - July 14, 1999 HE 17**




The mean load during served by the DAM in 1999 was 22,000 MWs. Ninety five percent of the load served by the DAM was less than 29,500 MWs. Therefore, it is reasonable to focus on portion of the supply curve below this level. When looking at the price at plus or minus 1,000 MWs from the average Demand (e.g., 21,000 MWs or 22,000 MWs), the DA energy prices are relatively flat and change by about $5.00 for every 1,000 MWs. At this point on the Supply curve, therefore, underscheduled Demand does not have a significant impact on the price.

It is also apparent that at the higher points on the Supply curve, the change in price becomes greater. This implies that underscheduling at the higher levels of Demand would have a more significant impact on the DA energy price. However, when Demand is at the higher point on the curve, it is also likely that the price of energy in the Real Time market will be higher; thus causing a disincentive to rely on the Real Time market.

This graph provides an example of why under-scheduling smaller volumes of Demand in the DAM would not have an impact on the DA energy price. For this reason, the CAISO is recommending that the small load exemption be revised to be 500 MWs per hour per LAP. This effectively limits small SCs to underschedule 250 MWs or less in the DAM if they were to attempt to move the DA price. They would need to have the majority of their load served by the DAM in order for this type of behavior to be profitable.

By increasing this exemption, the CAISO does not intend to discriminate against SCs with larger quantities of Demand that is bid in the DAM. The purpose of the interim measures, per the FERC directive in the MRTU Order, is to prevent under-scheduling that could potentially impact the price in the DAM. It is the CAISO's perspective that LSEs with Demand below this proposed exempted value would not have the ability to significantly impact the DA price.

(4) Publishing of Load Forecast Data: During the July 12, 2007 stakeholder conference call, several stakeholders requested that more specificity be provided regarding posting of forecast and actual load data to OASIS. The CAISO will provide additional clarification about this topic in its final proposal and in the proposed tariff language.

## E. Next Steps

The CAISO will review this proposal during the August 10th Joint MSC/Stakeholder meeting. The CAISO seeks written comments on this proposal by August 14, 2007. Please submit written comments to jderosa@caiso.com.

After receiving stakeholder input, the CAISO will update the proposed tariff language and post the information on its website by August 24, 2007. CAISO Management will present the updated proposal at the September 6-7 CAISO Board of Governors meeting. The CAISO plans to make a compliance filing with the FERC on September 28, 2007.

# ATTACHMENT E

**Opinion on "Interim Measures to Address Day-Ahead Underscheduling under MRTU"**
**by**

**Frank A. Wolak, Chairman**
**James Bushnell, Member**
**Benjamin F. Hobbs, Member**
**Market Surveillance Committee of the California ISO**

**Final: July 2, 2007**

We have been asked to comment on proposals by the California Independent System Operator (CAISO) for mitigating strategic underscheduling by load-serving entities (LSEs) in the day-ahead market (DAM) that will be established once the Market Redesign and Technology Update (MRTU) process is complete. These proposals are described in the in June 15, 2007 document entitled, "A Straw Proposal: Proposed Interim Measures to Address Day-Ahead Underscheduling under MRTU."[1] These measures are meant to be interim procedures that would cease upon activation of explicit virtual (or convergence) bidding within the MRTU framework.

Load underscheduling represents one type of "implicit virtual bidding"--the misrepresentation of physical positions for financial trading purposes–that the implementation of explicit virtual bidding is intended to displace or counteract. Because MRTU Release 1 will operate without virtual bidding, in its September 21, 2006 MTRU Order the Federal Energy Regulatory Commission (FERC) has directed the CAISO to implement measures to deal with potential strategic underscheduling. This directive was further clarified in an April 20, 2007 FERC order which stated that

> ...these interim measures are not intended to prevent LSEs from taking steps to reduce the costs of serving load. More specifically, we expect that the interim measures should address the problem of persistent underscheduling in the DAM on occasions when energy prices suggest that it would be economic to buy in the DAM.

The CAISO is required to making a filing to FERC with its proposed measures no later than 180 days prior to the effective date of MRTU Release 1.

Although underscheduling may have been a problem in the California market during period June 2000 to June 2001, the financial incentives facing LSEs and suppliers have changed considerably since that time so that neither party currently have a financial incentive to engage in persistent underscheduling of the form described above. The problem with implementing mechanisms that attempt to punish persistent underscheduling is that the actions these regulations are intended to prevent are very hard to distinguish from legitimate and even beneficial trading practices. As such, any regulation put in place to address "bad" underscheduling practices runs a serious risk of

[1] Available from http://www.caiso.com/1bfe/1bfeebd54b0e0.pdf

capturing many legitimate practices in its net. The application of such regulations, as with all measures aimed at mitigating market power, must weigh the potential risks of inaction versus the risks of unintended consequences from the regulations themselves. In this case we feel that the risks of major efforts to depress day-ahead prices over the first few months of MRTU (before convergence bidding is implemented) is minimal if current levels of fixed-price forward contract coverage of final demand by California's larger LSEs are maintained. However, the impacts of the ISO's "Interim Scheduling Charge" proposal on the scheduling and trading practices of LSEs are difficult to predict. Thus there is a very real possibility that the cure here may be worse than the disease it is intended to combat.

For these reasons, we support a hybrid of the CAISO's first and second options—the "Interim Scheduling Report" to be backed up by a penalty schedule. The report would provide information on the scheduling practices of the LSEs to FERC, but does not initially impose penalties on market participants. Upon a finding by FERC that scheduling practices of an LSE are in fact abusive, the penalty structure described as the "Interim Scheduling Charge" would take effect. Although the "Interim Scheduling Charge" proposal is mindful of these concerns and does an admirable job of meeting FERC requirements while minimizing the risk of unintended consequences, we feel that no proposal can balance these opposing goals with total satisfaction. Therefore, we recommend that this proposal be held in reserve, to be implemented only upon the incidence of abusive violations by LSEs, rather than implemented preemptively.[2]

### ***The Nature of the Problem and the Limited Incentive for it to Occur under MRTU***

At issue is the potential for large load-serving entities to impact prices through their demand bidding into day-ahead markets. We note that LSEs currently have limited ability to impact the *total* quantity of electricity they purchase. This is in the hands of their end-users. LSEs do, however, have the ability to influence *where* they purchase their power. For example, an LSE with a large net short position going into the day-ahead market may find it profitable to shift demand out of that market and into the real-time market if by doing so it is able to lower the day-ahead clearing price on its purchases in the day-ahead market.

LSEs may have many legitimate economic reasons to shift purchases between day-ahead and real-time, including a predicted price imbalance, unexpected load, or the availability of additional supply from regional markets in the hour-ahead time frame. It is important to recognize that the LSE's decision of which market—day-ahead or real-time—to purchase energy from does not impact system reliability under MRTU. The ISO believes that other aspects of MRTU, notably the Residual Unit Commitment (RUC) process will ensure system reliability, even in the absence of any formal scheduling requirements. These same aspects of MRTU also create an additional cost to LSEs for leaning too heavily on the real-time market, because the costs of RUC unit commitments

[2] If the Interim Scheduling Charge approach is to be used only upon detection of abuse, it would be reasonable to tighten its provisions somewhat from the current proposal, but the penalty schedule should be decided beforehand as part of an overall enforcement strategy.

and other related services are assigned primarily to entities buying out of the real-time market.

The incentive of LSEs to attempt influence day-ahead prices through their unilateral actions depends on their exposure to short-term market prices and their size. To influence the day-ahead price an LSE must control a significant portion of total ISO load. It also has to have a sufficient fraction of final demand that is not already tied up under long-term contracts. If most of the energy purchased by an LSE is under a fixed-price long-term contract, that LSE has little incentive to influence either the day-ahead or real-time price--there isn't enough volume at stake to make it worth the cost.

There is little need for a requirement that an LSEs schedules 95% of its day-ahead demand forecast in the day-ahead market if that LSE has fixed-price forward contract coverage of at least of 95% of this day-ahead demand forecast. With this level of fixed-price forward contract coverage, the LSE is completely hedged against short-term electricity price fluctuations and has no financial incentive to schedule less than the quantity of energy covered by these fixed-price forward contracts in the day-ahead market. Thus, a major determinant of the need for a day-ahead scheduling requirement under MRTU is the extent to which California LSEs maintain their current percent of fixed-price forward contract coverage of final demand under MRTU. If these LSEs maintain this level of fixed-price forward contract coverage of their final demand obligation under MRTU, they will have no incentive to engage in the persistent underscheduling described in the April 20, 2007 FERC order. Therefore, we believe that the combination of additional penalties under MRTU for over-reliance on the real-time market and the high level of fixed-price forward contract coverage of the final demand of the large California LSEs minimizes the risk of this underscheduling strategy occurring in ISO markets.

***Interim Scheduling Charge Proposal and Potential Unintended Consequences***

The most recent version of the ISO's Interim Scheduling Charge proposal envisions assessing a penalty on LSEs based on the positive difference between their real-time consumption and their day-ahead cleared demand at the LAP level, subject to several exceptions. The penalty rates and underscheduling thresholds are:

> $150/MWh for Net Negative load deviations that are between 15%-20% of day-ahead cleared demand:
> $250/MWh for Net Negative load deviations that are greater than 20% of day-ahead cleared demand:

There are several reasons for exemptions from the application of these penalties. No penalties are assessed for any day when the ISO peak load forecast is more than 5% less than actual demand (on a LAP basis) or during any hour when the hourly real-time price was less than the day-ahead price during that hour. Scheduling Coordinators with hourly loads of 100 MW or less are exempt from the penalty. All participating loads and load-following metered subsystems (MSSs) are exempt from the penalty. The revenues collected from these penalties would be used to reduce the ISO's grid management charge. This mechanism would be eliminated when convergence bidding is implemented.

There are a number of potential unintended consequences associated with this Interim Scheduling Charge that impose can impose costs on the large LSEs unrelated to their own bidding behavior. For example, if suppliers into the day-ahead market unexpectedly increased their offer prices for the same quantity of energy, unless the LSEs bid a significant fraction of their real-time consumption in the day-ahead market at an extremely high price, the day-ahead market could clear for each LSE at a quantity of energy that is far below its real-time demand. This outcome would imply under-scheduling penalty charges for all LSEs with no change in their bidding behavior. In short, these LSEs could be punished for a change in the offer behavior of suppliers, with no change in their bidding behavior. At least a portion of these charges would be borne by California consumers with no corresponding market efficiency benefits.

Another unintended consequence of the Interim Scheduling Charge is the result of the fact that often a significant amount of low-priced imports are available between the close of the day-ahead market and the real-time market. It could very easily be the case that certain LSEs could find it economic to purchase more than 10 percent of their real-time consumption from imports made available between the close of the day-ahead market and the real-time market. Although these imports are the least-cost source of incremental wholesale electricity for the LSE in the absence of the Interim Scheduling Charge, the magnitude of the scheduling charge would discourage the LSE from this procurement policy and unnecessarily raise the price of electricity to California consumers.

Because of these and other potential untended consequences associated with the Interim Scheduling Charge proposal and limited incentives California's large LSEs have to engage in persistent underscheduling because of the high level of fixed-price forward contract coverage of final demand they expect to have under MRTU, we do not feel the costs of these unintended consequences exceed the expected benefits of implementing the Interim Scheduling Charge.

### ***The Real Potential Problem with Large Purchasers on the Demand Side of the Market***

In closing, we emphasize that that the day-ahead market is only one of several contexts in which large LSEs can take actions to reduce the price they pay for electricity. Large LSEs can achieve similar results by signing contracts with generators who might otherwise not be operating or simply running their own units a bit more than is optimal to depress short-term market prices. Thus a focus on day-ahead and real-time interactions is potentially missing a more far-reaching and challenging set of issues. As with the generation side, California is largely depending upon a dynamic of long-term contracting and a reasonably competitive regional market structure to mitigate such concerns, rather than potentially distorting market rules.[3] We see little reason not to rely on the existing structure of MRTU to deal with these issues between the day-ahead and real-time market, unless market outcomes provide substantial evidence that more formal interventions are needed.

3 It should be noted that the market structure is more concentrated on the demand side. If the regulatory and policy structure in California settles on a policy in which the large LSEs acquire and operate plants in a way that depresses wholesale prices, there is little that ISO market-power mitigation rules can do to change that.

# ATTACHMENT F

California ISO
Your Link to Power

California Independent
System Operator Corporation

# Memorandum

**To:** ISO Board of Governors

**From:** Keith Casey, Director Market Monitoring

**Date:** July 9, 2007

**Re:** ***Market Monitoring Report***

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***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

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[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 |
|---|---|---|---|
| *Average Day Ahead Over-scheduling* | | | |
| 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%) |
| *Percent of Hours with Net Decremental Energy Dispatch in Real Time Market* | | | |
| Off-Peak Hours | 82% | 58% | -24% |
| Peak Hours | 78% | 75% | -3% |
| *Average Net Real Time Dispatch (MW/hour)* | | | |
| 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.

**Certificate of Service**

I hereby certify that I have this day served a copy of this document upon all parties listed on the official service list compiled by the Secretary in the above-captioned proceeding, in accordance with the requirements of Rule 2010 of the Commission's Rules of Practice and Procedure (18 C.F.R. § 385.2010).

Dated this 28th day of September, 2007 at Folsom in the State of California.

Susan Montana /MAA

Susan Montana