

**UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION**

**California Independent System)
Operator Corporation)**

Docket No. ER09-240-000

**MOTION FOR LEAVE TO ANSWER AND ANSWER OF THE
CALIFORNIA INDEPENDENT SYSTEM OPERATOR CORPORATION TO
COMMENTS AND PROTESTS**

Pursuant to Rules 212 and 213 of the Commission’s Rules of Practice and Procedure, 18 C.F.R. §§ 385.212, 385.213, the California Independent System Operator Corporation (“CAISO”) hereby files its answer to various comments and moves for leave to answer protests to its proposal to include in its Market Redesign and Technology Upgrade (“MRTU”) tariff certain parameters to guide the market optimization in making adjustments to certain Non-Priced Quantities (the “Parameter Filing”). For the reasons explained below, the Commission should accept the Parameter Filing without modification.

I. BACKGROUND

On November 4, 2008 in preparation for MRTU *go live*, the CAISO made a section 205 filing to include in the MRTU tariff a set of parameters that enable the CAISO Markets to clear optimally under a wide range of potential grid and market conditions. In the Parameter Filing, the CAISO first proposed to modify an existing inflexible tariff provision that requires the market clearing software to exhaust all economic bids before engaging in any adjustments to submitted self-schedules. Relaxation of this inflexible rule is necessary because market simulation results have

clearly demonstrated that it could lead to market solutions that are not well founded in either economics or good utility practice.¹ The CAISO also proposed to include in its tariff the following rules to guide the setting of these parameters so that in clearing the market the optimization software will:

- Relax an internal transmission constraint instead of pursuing a re-dispatch solution at system costs above \$5,000 per MWh of congestion relief in the IFM or the RTM and \$1,250 in the RUC process.
- Use the Energy bid cap as the pricing parameter for calculating five-minute interval prices when there is a shortage of Energy bids in Real-Time;
- Use the Energy bid cap as the pricing parameter for calculating Energy prices in the Integrated Forward Market and the Real-Time Market after a transmission constraint has been relaxed and use the RUC Availability Bid Cap in the same manner for RUC;
- Use the Ancillary Services offer cap as the pricing parameter when the supply of an Ancillary Service is not sufficient to meet the procurement requirement;
- Set the value of the scheduling parameter associated with self-schedules submitted under existing rights (TOR, ETC, CVR) in the Integrated Forward Market to a level higher than the \$5,000 scheduling parameter associated with internal transmission constraints to ensure that ETC/TOR/CVR self-schedules are not adjusted in the Day-Ahead Market.

The Parameter Filing also addressed an outstanding compliance requirement arising out of the Commission's September 21, 2006 and June 25, 2007 orders² that is related to a special case of the use of these parameters.

¹ See Exh. ISO-1 accompanying the Parameter Filing at 14-19.

² *California Independent System Operator Corp.*, 116 FERC ¶ 61,274 (2006) ("September 21 Order") and *California Independent System Operator Corp.*, 119 FERC ¶ 61,313 (2007) ("June 25 Order").

II. MOTION FOR LEAVE TO ANSWER PROTESTS

Pursuant to Rules 212 and 213 of the Commission's Rules of Practice and Procedure, 18 C.F.R. §§ 385.212, 385.213, the CAISO moves for leave to answer protests to the GIPR filing. The CAISO requests waiver of Rule 213(a)(2), 18 C.F.R. § 385.213(a)(2), to permit it to make an answer to the protests. Good cause exists for this waiver here because the answer will aid the Commission in understanding critical facts about prices in the MRTU market and help to ensure a complete and accurate record in this case. See, e.g., *Entergy Services, Inc.*, 116 FERC ¶ 61,286 at P 6 (2006); *Midwest Independent Transmission System Operator, Inc.*, 116 FERC ¶ 61,124, at P 11 (2006); *High Island Offshore System, L.L.C.*, 113 FERC ¶ 61,202, at P 8 (2005).

III. ANSWER

A. Setting Pricing Parameters at the Bid Caps Does Not Suppress LMPs.

In its filing, the CAISO proposed to set the day-ahead and real-time pricing parameter for internal transmission constraint relaxation to \$500 per MWh, the Commission-approved energy bid cap level.³ WPTF disagrees with this decision and argues that the pricing parameter for relaxing transmission constraints should be \$1,500 per MWh, which is the value the CAISO was using in MRTU market simulation earlier this year.⁴ WPTF argues the \$500 value will distort price signals and mask the real cost of these constraints and therefore will perpetuate existing inefficiencies. WPTF also argues that the fact that the Commission has directed the CAISO to implement enhanced scarcity pricing provisions within a year of MRTU start-up does not mean that

³ See Exh. ISO-1 at 26-34.

⁴ WPTF at 5-8

the CAISO must wait a full year before implementing mechanisms that appropriately reflect supply shortages.⁵

The CAISO strongly disagrees with the assertion that the current proposal does not appropriately reflect supply shortages. The CAISO believes that the bid cap is the appropriate level for this pricing parameter in large part because, contrary to WPTF's suggestion, it does not suppress settlement prices.⁶ WPTF ignores the fact that the pricing parameter in this case sets a floor on the transmission constraint shadow price, not a ceiling. Adopting the energy bid cap as the shadow price floor ensures that the market optimization will not administratively inflate the constraint shadow price above the maximum willingness to pay that demand is able to bid into the energy market. Using the energy bid cap as the floor does not, contrary to WPTF's assertion, prevent the constraint shadow price from rising to a much higher level, depending on the actual economic re-dispatch costs associated with congestion relief. As Dr. Kristov explained in his testimony, the only difference between the \$1,500 parameter as originally used in the MRTU market simulation and the new \$500 parameter is when the last economic re-dispatch signal is between those two levels:

With a pricing parameter of \$1500, whenever the last economic re-dispatch signal is less than \$1500 the shadow price will be set to \$1500. With a pricing parameter of \$500, whenever the last economic re-dispatch signal is less than \$1500 but more than \$500 it will be allowed to stand as the shadow price. But there is a lot of range for potential re-dispatch costs between \$1500 and the \$5000 scheduling parameter, and in practice I expect that the last economic re-dispatch signal will be greater than \$1500 far more often than it will be less, in which case the choice of \$500 as the pricing parameter rather than \$1500 would have little impact.⁷

⁵ WPTF at 8-9.

⁶ See Exh. ISO-1 at 26-34.

⁷ Exh. ISO-1 at 32.

Accordingly, the \$500 parameter is just and reasonable because it ensures that the shadow price of the relaxed transmission constraint will reflect the prevailing cost of economic congestion relief and thus have an appropriate impact on the settlement LMPs, without administratively raising that shadow price to an arbitrarily higher value.

Second, WPTF argues that separating scheduling and pricing run penalty prices does not discourage self-scheduling of generation resources.⁸ Dr. Kristov explained in his testimony that the separation of the pricing and scheduling parameters is necessary to balance two important principles of the MRTU market design.⁹ On the one hand, the higher scheduling parameters are driven by the need to use extremely high and extremely low numerical values that are well outside the range of economic bids, so that using economic bids will be preferred over self-schedules by the software and, if the software does need to adjust self-schedules, it will observe the scheduling priorities for different self-schedule types specified in the approved MRTU tariff. On the other hand, these extreme values would not be appropriate for setting the market settlement prices because, by being so far outside the allowable range of economic bids, they would allow no way for market participants to bid their economic preferences with respect to the prices that would result. At the same time, as noted above, because the pricing parameter simply sets a floor on the constraint shadow price and not a ceiling, the CAISO does not agree with WPTF's assertion that the \$500 value fails to provide sufficient disincentives for self-scheduling.

⁸ WPTF at 7.

⁹ Exh. ISO-1 at 10-11.

B. The Proposed Pricing Parameters Will Increase With The Increasing Bid Caps, But It Is Not Appropriate To Mandate Migration To A Common Set Of Scheduling And Pricing Parameter Values.

WPTF argues in its comments that the CAISO should set a definitive time table for increasing both the scheduling and pricing parameters and that the two should converge over time.¹⁰ First, the CAISO reminds the Commission and WPTF that the pricing parameter for real-time shortage and the real-time and IFM pricing parameters for transmission constraint relaxation is hard-wired to the bid caps. Those bid caps do increase on a three-year schedule that the Commission has already approved.¹¹ The energy bid cap will proceed to \$750 and then to \$1000 by the beginning of the third year of MRTU. However, converging those pricing parameters with the very high scheduling parameters would require significant increases in those bid cap levels, up to the order of magnitude of \$5,000, to which the CAISO is not prepared to commit before the market has even been launched. Converging the scheduling run parameter and pricing parameters by lowering the scheduling parameters is also not an option because it would undermine some key design principles of MRTU. For example, lowering the \$5000 scheduling parameter on internal transmission constraints would result in too frequent relaxation of transmission constraints, in conflict with the key objective of ensuring feasible energy schedules and dispatch instructions. Similarly, lowering the higher scheduling parameters on different types of self-schedules would undermine the tariff priority sequence for the different self-schedules. As with all the MRTU market features, the CAISO will monitor the effectiveness of these parameters over time. If and

¹⁰ WPTF at 9-10.

¹¹ See MRTU Tariff, Section 39.6.1.1.

when the pricing parameters warrant being raised above the existing schedule to raise the bid caps, the CAISO will explore that with stakeholders.

C. DWR's Protest Regarding Participating Load Misunderstands and Greatly Overstates the Issue and Is Far Beyond the Scope of This Proceeding.

In response to the CAISO's filing of market parameter values, DWR filed a 57-page protest regarding what it perceives as unfair treatment of Participating Load under MRTU. In short, DWR's protest confuses basic facts about the adjustment of non-priced quantities (facts clearly laid out in the CAISO's filing), draws erroneous conclusions about the impact of this proposal on its real-time operations, and significantly overstates the impact this issue will have on Participating Load in CAISO's markets. In any case, DWR's concerns are by and large far beyond the scope of this proceeding.

As a preliminary matter, it is necessary to clarify the precise operational question at issue because DWR's lengthy pleading greatly confuses and conflates many different issues, most of which are unrelated to this proceeding. The issue underlying DWR's many pages of comments is a very narrow one and can be explained as follows. In the Integrated Forward Market (IFM), it is possible that under certain operating conditions, a Participating Load self-schedule may be more effective in relieving a particular congested transmission constraint than a comparable quantity of Default LAP load, so that it would take many more MWh of Default LAP self-schedule reduction than it would of Participating Load self-schedule reduction to achieve the same congestion relief. Accordingly, to resolve the congestion in such cases, the IFM optimization software will opt for the smaller MWh self-schedule reduction and may adjust a portion of a

Participating Load self-schedule before adjusting the Default LAP load self-schedule. This is a simple result of the fact that Participating Load is scheduled (and settled) nodally, while load submitted at the Default LAP is distributed to all load nodes comprising the Default LAP for scheduling purposes in the IFM. Most importantly, as will be discussed below, this issue is confined to the IFM (i.e., the day-ahead market) and does not have anything to do with load curtailment in real-time. In particular, a reduction in the IFM of a Participating Load's submitted self-schedule does not impose any real-time operating constraint or requirement on the Participating Load.

Keeping these principles in mind, for the reasons that follow, the treatment of Participating Load under MRTU is not unduly discriminatory, does not have the disastrous consequences DWR suggests, and is far beyond the scope of this proceeding.

1. This Issue is Beyond the Scope of the Parameter Filing.

This issue is beyond the scope of this proceeding because the parameter values proposed here do not modify, but rather simply implement, previously approved tariff provisions regarding the nodal (or possibly Custom LAP) scheduling of Participating Load and the scheduling of Default LAP load in the IFM. That is, the effectiveness-related phenomenon described above is a straightforward result of MRTU design features that were developed and ruled on by the Commission well before the CAISO conducted the stakeholder process leading to the current Parameter Filing, and those approved features are not modified by this filing.

The CAISO raised DWR's issue in its filing because the issue was brought to the CAISO's attention and it wanted to address the issue upfront as a concern raised by a

stakeholder. However, it must be understood that the parameter values at issue in this proceeding, and indeed the entire concept of adjusting non-priced quantities, did not create and does not change the relevant IFM features about which DWR is concerned. The fact that an adjustment to a nodally-scheduled Participating Load self-schedule may be more effective than a reduction to a Default LAP load self-schedule at relieving a constraint is solely a consequence of the fact that Participating Load is scheduled at its actual pricing node locations, unlike other loads that utilize the Default LAPs. Indeed, even if the CAISO had not made any of the filed tariff revisions, it would still be the case that DWR's nodally scheduled load could be more effective in relieving a constraint than other load scheduled at the LAP.

This nodal scheduling – and particularly the associated nodal settlement – is something DWR had successfully pursued with the CAISO and at the Commission to account for the fact that when DWR's pumps are in pumping mode, they look like other loads, but when they submit bids to provide energy through a "load drop," they are acting more like a generator and should therefore be eligible to be paid their locational price. Similarly, the prospect of adjusting a self-schedule in the face of a dearth of economic bids was always contemplated and reflected in the MRTU Tariff.

Finally, the scheduling of Default LAP load by means of fixed load distribution factors was incorporated by the CAISO into the MRTU design in response to the 2005 assessment by LECG¹² of the CAISO's comprehensive market redesign proposal, and was widely and thoroughly discussed at that time before being incorporated into the

¹² See *Comments on the California ISO MRTU LMP Market Design*, Report of LECG (Feb. 23, 2005), available at <http://ksghome.harvard.edu/~whogan/Cal%20ISO%20Market%20Design%20Notes%20with%20Apps%2002-23-05.pdf>.

MRTU tariff filing in February 2006. Thus all the MRTU design elements that contribute to the issue DWR has raised were well known and fully debated long before the current proceeding. Moreover, DWR has consistently lobbied for Participating Loads to be scheduled and settled locationally and *not* to be treated like other loads, yet comes now before the Commission alleging undue discrimination.

2. Disparate Treatment of Nodal Load is Not Undue Discrimination.

Throughout its pleading, DWR claims that the CAISO is unduly discriminating against Participating Load. The disparate treatment of Participating Load is as described above a natural consequence of the fact that Participating Load, largely at the insistence of DWR, is scheduled and settled nodally, *unlike most other loads*. A claim of undue discrimination under the Federal Power Act must necessarily rest on the premise that two entities being treated differently are in fact so similarly situated that disparate treatment is unfair.¹³ Participating Load is truly a class by itself and cannot be considered similarly situated to Default LAP load for the very reasons DWR highlights. Specifically, Participating Load by definition is capable of participating in the CAISO energy and ancillary services markets like a generating resource, and as such is scheduled at its actual physical location and settled based on the locational prices. This crucial feature of Participating Load which distinguishes it from Default Lap load is so operationally significant that a claim of undue discrimination cannot be sustained.

¹³ See, e.g., *Alabama Elec. Cooperative, Inc. v. FERC*, 684 F.2d 20, 28 (D.C. Cir. 1982) (emphasizing that Section 205(b) of the Federal Power Act “proscribes only any *unreasonable* difference in rates and any *undue* preference or advantage” (emphasis in original)).

3. Reduction of a Participating Load Self-Schedule Is Only an Issue in the Day-Ahead Market and Therefore Does Not Have the Operational Implications Alleged by DWR.

DWR's pleading contains countless references to real-time conditions, the Real-Time Market, and the *curtailment* of what it calls its right to firm transmission service. This entire argument misses one critical point. The possibility that a Participating Load Self-Schedule might be adjusted before a Default LAP load self-schedule is only an issue in the IFM, which is a day-ahead market process. Under MRTU, no load is curtailed in real-time unless the CAISO has declared a System Emergency and, even in that case, involuntary curtailment of load is managed by the CAISO operators in accordance with established operating procedures and is never performed by the MRTU market software. The Real-Time Market software does not see load as available for reduction (except, as noted above, for Participating Load that has submitted bids to the market); rather, it sees load in the form of a fixed load forecast within which it cannot distinguish between Default LAP load and nodal load. Thus a Participating Load that has not offered to provide energy or ancillary services by submitting bids will not be dispatched by the real-time market.

The fact that the distinction between Default LAP and nodal load only exists in the Day-Ahead Market is important for two primary reasons. First, it means that the only result of an adjustment to a Participating Load self-schedule is that some portion of that self-schedule may not clear the Day-Ahead Market. This results in some quantity of the submitted IFM load self-schedule that the Participating Load will need to obtain through the Real-Time Market. It does not mean that the Participating Load will be curtailed in real time, as DWR suggests. Rather, the consequences (to the extent there

are any) would be purely financial, not operational. Second, adjustment by the IFM simply does not create the parade of horrible results that DWR suggests could happen if DWR load is shed in real-time.

DWR's pleading is replete with dramatic examples of risks it will incur as a result of the CAISO's market parameter proposal. DWR warns of damaged aqueducts, water lost to sea, fines, sanctions, civil penalties, FERC investigations, and NERC compliance exposure as a result of an adjusted day-ahead schedule.¹⁴ As noted above, adjustment of a day-ahead schedule is not equivalent to and does not necessitate real-time load curtailment. Requiring a portion of a load self-schedule to be met in the Real-Time Market may carry a financial risk, but it does not itself result in any disruption of the real-time delivery of needed electricity to DWR or any other electricity consumer. It bears repeating that the CAISO does not shed load in real-time absent a declared System Emergency and, even then, load-shedding is an operator function which is not performed through the MRTU markets. The real-time market, in contrast, dispatches energy to meet the short-term load forecast and in so doing does not dispatch any Participating Load that has not submitted a bid to provide energy or ancillary services.

Having noted this, given the unique attributes of its pumps, if DWR still believes it lacks sufficient legal or operational protection to operate in the MRTU market, such concerns are surely beyond the scope of this limited proceeding.

4. The Possibility of a Reduction to DWR's Day-Ahead Self-Schedules is Narrow, In Part Because ETCs are Protected.

Despite its claims to the contrary, the actual risk of a DWR Participating Load self-schedule being adjusted in the Day-Ahead Market before a Default LAP load self-

¹⁴ SWP at 12, 14, 26, 27, 43, 44.

schedule is relatively narrow. First and foremost, a significant portion of DWR load is served under Existing Transmission Contracts, which are protected against adjustment in the Day-Ahead Market. The CAISO's filing discusses this protection in detail.

Second, for this issue to arise, operational and market conditions must be constrained to the point where self-schedule adjustment of load is called for. Third, even then, a DWR self-schedule will only be adjusted if so doing is more effective than Default LAP load on the constraint in question (*i.e.* that the constraint can be resolved with a smaller reduction of nodal load than Default LAP load). DWR's pleading significantly overstates the scope of this issue.

5. The CAISO Proposal Does Not Discourage Demand Response.

DWR generally alleges that the Parameter Filing discourages participation of demand response resources under MRTU. It warrants repeating that the subject matter of this proceeding, the parameters governing the adjustment of non-priced quantities, implements – but does not modify – MRTU design features that have been previously decided and approved regarding the scheduling in the IFM of Participating Load and Default LAP load. Currently the CAISO and stakeholders are engaged in a vigorous process to develop new demand response products and services that can participate in the CAISO markets. If the design features raised by DWR in its comments on the Parameter Filing are found to be problematic for the expansion of demand response in the CAISO markets, those problems would best be addressed in the ongoing demand response stakeholder process.

6. The CAISO Tariff Addresses the Conflict Between Energy Needs and Other Duties Such As DWR's Water Pumping Obligations.

DWR makes several claims about the risk of a forced dispatch or curtailment to DWR's ability to comply with its water pumping obligations. Again, this filing has nothing to do with Participating Load dispatches nor does it make a real-time curtailment or load-shedding even remotely more likely. However, the CAISO points out that Section 22.13 of the MRTU Tariff, as filed over two years ago, includes the following clarification: "Nothing in this CAISO Tariff is intended to permit or require the violation of federal or California law concerning hydro-generation and Dispatch, including but not limited to fish release requirements, minimum and maximum dam reservoir levels for flood control purposes, and in-stream flow levels." If DWR is not satisfied that this tariff provision addresses their concerns, this is not the proper forum in which to seek some unspecified additional layer of certainty. The CAISO has already begun discussions with DWR through which these types of concerns can be further explored and resolved.

7. The CAISO Has Already Committed to Pursue More Granular LAP Settlement.

Finally, DWR asks the Commission to "renew" its directive to the CAISO to develop more granular "sub-LAPs".¹⁵ As DWR recognizes, the Commission has already ordered the CAISO to develop sub-LAPs¹⁶ for MRTU Release 2. The CAISO has not waived from that commitment.

¹⁵ DWR at 40.

¹⁶ *Cal. Indep. Sys. Operator Corp.*, 116 FERC ¶ 61,274, at P 611 (Sept. 21, 2006); *Cal. Indep. Sys. Operator Corp.*, 112 FERC ¶ 61,013 at P 35 (July 1, 2005).

D. The CAISO Already Has An Obligation to Monitor the Costs of Protecting ETCs, TORs, and CVRs.

The CAISO's filing includes a proposal to protect holders of rights under Existing Transmission Contract (ETCs), Transmission Ownership Rights (TORs) and Converted Rights (CVRs) from self-schedule adjustment in the day-ahead market.¹⁷ As a general matter, holders of these rights expressed appreciation for that protection in their comments and the CAISO believes it is the correct solution to concerns raised by those parties. PG&E and SCE ask the Commission to instruct the CAISO to demonstrate through simulations that the ETC protection proposal produces reasonable results. They suggest that this protection could increase the locational marginal prices (LMPs) for some transmission constrained paths.

First, the CAISO is already obligated to honor the existing rights differently than all other use of the grid under the long-standing arrangement the CAISO and its market participants arrived at as it developed its LMP-based markets. This filing does not alter the requirement of this heightened treatment of such self-schedules, but only ensures, through appropriate parameter values, that the relative priority between ETC/TOR/CVR self-schedules and other self-schedules will not be eroded by the congestion management procedures of the IFM.

Second, in accordance with the Parameter Filing the CAISO has implemented the proposed scheduling parameters for existing rights in the market simulation software, the results of which are available to market participants. The CAISO will continue to monitor the market simulation results, as well as the actual market results

¹⁷ See Exh. ISO-1 at 37-40.

after go live, for any impacts on LMPs attributable to the higher degree of scheduling priority proposed here for existing rights.

Powerex states that it agrees with the need to protect existing rights from adjustment, but only when sufficient transmission capacity exists. Powerex seeks additional clarity from the CAISO on how it will recognize this priority in the event an internal transmission line is de-rated below the amount of existing rights holders' priority to capacity on the line. In response the CAISO clarifies two important points. First, as a result of the 2004 stakeholder process on this topic, it was determined that the CAISO could fully honor existing rights under the LMP market design without reserving specific transmission capacity for those rights internal to the CAISO grid. Such reservations are both inefficient and unnecessary because the LMP market software will fully manage internal congestion through re-dispatch of resources in both the IFM and the RTM, and in this re-dispatch process can afford existing rights schedules the appropriate priority. Thus, because there is no explicit reservation of capacity for existing rights, in most cases it is not appropriate to limit those rights when internal transmission facilities are derated. Second, in certain cases where the CAISO has been informed through the TRTC Instructions that the rights under a TOR, ETC or CVR are dependent on the available capacity on a specific internal transmission facility, the CAISO systems will appropriately reduce the rights in accordance with the TRTC Instructions when that facility is derated.¹⁸

E. Load Distribution Factors

¹⁸ See Section 16.4.5 of the MRTU Tariff.

In the Parameter Filing, the CAISO included a revised LAP demand clearing mechanism, utilizing the same conceptual approach as set forth in tariff section 31.3.1.3 as originally filed, but improving upon that approach by internalizing the procedure in the IFM rather than performing a sequence of discrete tests and optimization re-runs in the pre-IFM processes.¹⁹ As part of that revision, what was “step 3” in that process, adjustment of load distribution factors, is removed. Instead, the IFM optimization will clear LAP demand in accordance with steps 1 and 2 of the original procedure, through the use of parameters described in this filing that enable it to call on self-provided Ancillary Services or relax transmission constraints.

PG&E and SCE object to the CAISO’s removal of the CAISO’s ability to adjust LDFs to relieve constraints in the IFM and requests the Commission reinstate the deleted language from section 31.3.1.3. PG&E and SCE are not convinced that the “expected effectiveness” of the first two steps in tariff section 31.3.1.3 will eliminate the need to readjust load distribution factors in the IFM in order to reach a feasible solution. The CAISO disagrees with PG&E and SCE for two reasons. First, under the approach proposed in this filing for relaxing a transmission constraint if the redispatch costs reach the level of the scheduling parameter for constraint relaxation, which is essentially step 2 of the original procedure, a situation could not arise in which adjusting LDFs would be necessary. This is because once the problematic transmission constraint is relaxed, it is no longer binding and no longer stands in the way of a solution in the IFM. Reinstating the third step would therefore serve no purposes because it would never be

¹⁹ See Exh. ISO-1 at 40-45.

triggered.²⁰ Second, the only way the adjustment of LDFs would be usable by this procedure would be if the CAISO configured the IFM to adjust LDFs *before* relaxing a transmission constraint. This would be a significant departure from the CAISO's original proposal. Most importantly, it would undermine the fixed load distribution factor principle for Default LAP load in the IFM, which the CAISO adopted in response to the number one market design issue raised in the 2005 LECG assessment noted above. The CAISO does not believe this is what PG&E and SCE are suggesting but, nevertheless, to pre-empt any considerations in that direction the CAISO emphasizes that it would not be an appropriate modification to consider at this time.

F. Pricing Parameters for Curtailment of Imports/Exports – Related Bid Floor Issues

CitiGroup Energy (CEI) believes the CAISO may be misapplying the -\$30 soft bid floor as a mitigation tool for generic import self-schedules.²¹ CEI has observed during testing that once the scheduling run price is less than -\$549.99 (which indicates curtailment of generic import self-schedules), the CAISO mitigates the pricing run price back to -\$30. However, when generic import self-schedules are not curtailed and the scheduling run price clears between -\$30 and -\$549.99, the pricing run price clears at or near the scheduling run price. This results in less extreme prices during extreme (high congestion) conditions and more extreme prices during less extreme (no or little

²⁰ It is worth noting that in the original tariff language, the three-step process included provisions to distinguish between two types of potentially binding transmission constraints, one type that would be deemed manageable by operators in real time and a second type that would not (see original section 31.3.1.3, Step 2 (b)). The procedure as proposed originally would allow relaxation of the first type only, and as a result the third step could be needed if a constraint of the second type were binding. Under the current CAISO proposal, this distinction has been dropped and all internal transmission constraints will have the same scheduling parameter (i.e., \$5000) governing their potential relaxation, thus rendering the third step of the procedure moot.

²¹ CitiGroup Energy at 3-10.

congestion) conditions. CitiGroup offers two suggestions. Under CitiGroup's so-called "Option 1," the CAISO would mitigate pricing run prices to the scheduling run prices when the scheduling run clears higher or lower than the scheduling run price. For imports, if the scheduling run price is -\$550 or less, the pricing run price should be mitigated back to -\$550, not -\$30. Under their "Option 2," the CAISO allow market participants to economically bid to the scheduling run price without restrictions and enable those economic bids to set the LMP. Because \$500 is a hard bid cap for MRTU, this option would only apply to bidding below the -\$30 soft bid floor. CitiGroup states that it prefers Option 2.

The CAISO believes that neither of CitiGroup's options are feasible and generally amount to a collateral attack on the Commission-approved bid floor, which is not at issue in this proceeding. As to Option 1, CitiGroup essentially argues that when the scheduling run parameter is reached, the scheduling run parameter should apply to settlements. In other words, CitiGroup asks the CAISO to jettison the pricing run parameter. This is not a tenable option because, as described in Dr. Kristov's testimony, the use of high scheduling run parameters is necessary to establish the tariff-based scheduling priorities in the optimization and create the necessary price separation between each respective action. Therefore, the use of separate scheduling and pricing run parameters strikes a reasonable balance between allowing meaningful price signals to reflect the conditions that triggered the use of *adjustment of non-priced quantities*, yet at the same time must not cause extreme price impacts on market participants. As to CitiGroup's preferred Option 2, its request is a thinly-veiled request

to lower the bid floor. The bid floor has been approved by the Commission²² and is not at issue in this proceeding.

G. Minimum Effectiveness Threshold

Powerex argues that the process of adjusting non-priced quantities should contain a minimum effectiveness threshold that would set a minimum percentage of effectiveness for a resource that would be used to relieve congestion on a particular constraint. Without a minimum effectiveness threshold, Powerex suggests the software is not prevented from adopting an extremely low effectiveness threshold, which could result in significant amounts of energy bids at low prices being adjusted in the IFM.

Powerex is correct that without a lower limit on effectiveness the market software could accept significant quantities of low-price energy bids to achieve a small amount of congestion relief on a particular constraint. The MRTU software does in fact have a lower effectiveness limit setting which can be specified by the CAISO at a level that produces scheduling results consistent with good operational practice. Currently the lower limit is set at 0.5 percent effectiveness (i.e., 0.005) which prevents the optimization from adjusting the schedule of a resource that is less effective on any particular constraint in order to relieve congestion on that constraint. What this setting does in effect is to reduce slightly the set of allowable re-dispatch solutions for relieving congestion on a given constraint, to eliminate those solutions that would be operationally unsound because they include the use of highly ineffective resource adjustments.

²² *California Indep. Sys. Operator*, 116 FERC ¶ 61,274 at PP 1019-1021 (2006).

For most of the market simulation process this lower limit was left at the factory software setting of 0.01 percent effectiveness (i.e., 0.0001), and only in the last few weeks did the CAISO raise its value to assess how it would affect market scheduling solutions. Thus, although the concern raised by Powerex is theoretically correct, its practical implications do not yet appear to be significant and, in particular, at this time the evidence from testing is not sufficient to enable the CAISO to draw a conclusion on the appropriate lower limit to set for MRTU start-up. The CAISO is committed, however, to perform further analysis to determine a start-up value for this setting and to include a description of it in the BPM no later than 45 days prior to go-live, in conjunction with the publication of final start-up values for the various BPM-specified parameters discussed in this filing.

H. Compensating Injections

SMUD expresses its concern that CAISO's use of "compensating injections" in its market model might have the effect of lowering the priority of their self-schedules.²³ The CAISO explains this issue further below but emphasizes upfront that this issue is unrelated to the Parameter Filing and need not be resolved in this proceeding.

SMUD represents its understanding of compensating injections to be the CAISO's practice in determining the feasibility of particular schedules of assuming that some of the actual power flows on SMUD's system will occur without compensation. SMUD is particularly concerned that the use of the term compensating injections remains unclear and that the impact of this practice on the priority of self-schedules is not clear. SMUD also points to the comments by Science Applications International Corporation (SAIC), an external auditor engaged by the CAISO to ensure that its tariff

²³ SMUD at 3-7.

and implementation documentation are consistent, questioning whether the tariff should describe compensating injections (loop flow or unscheduled flow) with respect to real-time market.

SMUD mischaracterizes the concept of compensating injections and is wrong in its conclusion that the CAISO has kept this process wholly as an insider process. The CAISO has documented in many public documents, discussed below, the concept of compensating injections to explain what they are and how they are used in the CAISO markets.

To explain, compensating injections is the phrase used to refer to the process in the real-time market software to account for loop flow impacts from external sources and sinks on the CAISO grid in real-time. The real-time pre-dispatch process uses the EMS Telemetry/state estimator solution for flows across the CAISO boundary and determines the total injections at the Scheduling Points and other external points that produce flows at the boundary so that they match the state estimator solution. The compensating injection is then the amount calculated and accounted for as described above as the difference between the injections and the market schedules at the Scheduling Points so that flows produced by the sum of the market schedules and the compensating injections at each point match the flows observed at the boundaries.

In section 3.1.9 of the BPM for Market Operations the CAISO explains that within the CAISO Balancing Authority Area, resources must schedule at their actual physical locations, either at the specific resource location or using aggregations approved by CAISO. But for resources outside the CAISO Balancing Authority Area, imports and exports are scheduled at Scheduling Points that are not the actual location of

Generation or Load in the other Balancing Authority Areas (for which CAISO typically does not know the actual location). What is referred to as unscheduled flow or loop flow is caused by interchange transactions supported by external loads and resources for which the CAISO has no visibility, as well as external power flows that may be unrelated to interchange transactions with the CAISO (and also invisible to the CAISO). The CAISO explains that it performs loop-flow (compensating injection) calculations to supplement market scheduling data, to match the actual Real-Time metered power flows that are observed at the CAISO boundary. It also explains that in real-time the CAISO combines the state estimator/EMS telemetry results with market schedules to determine real-time loop flows. The CAISO then explains that the EMS/State Estimator telemetry reports the actual real-time flow on the interties and the market applications recognize the difference between the scheduled flow and actual real-time flow as being unscheduled flow (i.e., loop flow), which is the basis of the calculated compensating injection.

In Section 7.5.3.1, one then finds the explanation that the actual inter-tie flows, obtained from telemetry, do not provide information about individual System Resource Dispatch and instead this information is obtained from Control Area Scheduler application (CAS). The CAISO then goes on to explain that “any difference between the net CAS Dispatch and the telemetered actual flow on a given inter-tie is attributed to loop flow and is factored into the calculation of loop flow compensating injections prior to the optimal Dispatch calculation.”

In Section 4.2.4.3 of the BPM for the Full Network Model, the CAISO also explains that in the Real-Time Market no EMS solution exists for market purposes for

the external portions of the market Full Network Model. The flows on the external portion of the system reflect the injections in that region and the CAISO performs calculations to determine a set of Scheduling Point Energy values that match the state estimator EMS telemetered flows on the boundary branches. The CAISO determines the amount of injections necessary to match the boundary conditions observed at the ties and then the resulting difference between these injections and the scheduled values for the Scheduling Points is referred to as a compensating injection. The CAISO then explains in this same section that the solution obtained using this approach reflects not only the impact of the schedules at the Scheduling Points but also the impact of loop flows and inadvertent Energy. The CAISO specifies that it manages the portion of the scheduling limit capacity associated with the market schedules at the Scheduling Points and not the compensating injections. The CAISO does not change the Schedule limit capacity at the intertie scheduling points through the compensating injection calculations. Instead, the flow impact associated with the Compensating Injections is accounted for within the CAISO Controlled Grid. As a result, the CAISO may have to re-dispatch to address a binding constraint that may result from the combination of scheduled flows and flows resulting from compensating injections, with the result being more accurate dispatch and pricing.

In the stakeholder process preceding the filing the CAISO also explained that compensating injections are not subject to adjustment in the CAISO's scheduling and dispatch because they originate from external sources and sinks over which the CAISO has no control, other than to apply pro rata cuts in interchange schedules or use the Unscheduled Flow Mitigation Procedure in coordination with adjacent Balancing

Authority Areas. The CAISO can only control internal re-dispatch. In the Parameter Filing, the CAISO has made no changes to these processes. Clearly, the processes described above indicate that the market solution will be different with application of compensating injections and the CAISO submits that it is appropriate to do so. To do otherwise would not be representative of the actual flows on its system.

It is important to note that through the application of the compensating injections the CAISO is not in any way taking away intertie capacity or derating intertie capacity because intertie capacity availability is not a flow based constraint but rather is only a scheduling limit. Therefore, through the use of compensating injections the CAISO does not decrease the intertie scheduling capacity used for determining intertie schedules in HASP and does not impact SMUD's intertie scheduling limits.

As indicated by SMUD, the CAISO has previously stated that this practice is important in the real-time because otherwise the LMPs would not be based on actual physical conditions in the real-time congestion management. Therefore, the CAISO had previously included language in the tariff that specified its accounting for loop flow at the interties in the HASP section 33.2. In its audit, SAIC did question whether the same language should appear in the real-time section. The CAISO agreed and is preparing to make a filing to include this detail in its tariff consistent with its practices. The CAISO notes that the detail regarding its accounting for unscheduled flow had not been included in Section 34 as an oversight because drafts of the tariff prior to filing had combined the detail on the HASP and the real-time market into one section. When the two were separated the need to have this reference in both sections was overlooked. However, because this issue will be rectified in an upcoming filing but as it was not part

of the Parameter Filing, the Commission need not address this issue in the instant proceeding.

The practice of modeling compensating injections is not altered by the setting of the parameters as described in the instant filing and does not affect the ability for CAISO to honor the priority for the self-schedules as contained in the MRTU Tariff and further amended by the instant filing. The relative priority of the self-schedules, which is the function the parameters settings serve, will not be affected by compensating injections and there should be no need for any further assurances regarding the protection of the relative priority of self-schedules in the real-time.

I. Requests for Additional Process

CitiGroup urges the CAISO to take steps to ensure that its market participants have adequate time to test the Market Parameters mechanism and make all results available to market participants so that they can independently review and verify them. CitiGroup asks the Commission to require the CAISO to fully disclose instances of adjustments to non-priced quantities. CitiGroup argues it will also not be readily apparent to market participants when the CAISO has relaxed transmission constraints and asks for quarterly reports for the Commission and market participants that summarize the extent to which uneconomic adjustments, both to self-schedules and to transmission constraints, have been employed.

First, the CAISO notes that its Board of Governors, based on the opinion of CAISO management and the comments of market participants, agreed that additional time is required to resolve the outstanding concerns regarding MRTU readiness and therefore directed CAISO management to be prepared to file the 60-day readiness

certification with the Commission by December 30, 2008, for a March 1, 2009 go live date. Accordingly, as noted below, market participants continue to gain experience with the market with the parameters for adjusting non-priced quantities in place. Second, the CAISO has already committed to quarterly performance reports to the Commission. In conjunction with those reports the CAISO will provide sufficient meaningful analysis of each quarter's observations with respect to adjustment of non-priced quantities and the performance of the parameter settings.

J. Setting the MRTU Market Subject to Refund

NCPA takes issue with what it perceives as a late modification to the MRTU Tariff. NCPA claims it lacks both hard data and the ability to assess whether the parameter values selected by the CAISO are the right ones. As a remedy, NCPA goes so far as to argue that the Commission should set the operation of the entire MRTU market subject to refund. This request has an obvious flaw: running the entire market subject to refund would presumably require continuing to run the *current* market in parallel after the cutover to MRTU, which is a practical impossibility. Moreover, the Commission has already approved the MRTU Tariff *without* setting it subject to refund, which makes NCPA's request a collateral attack on the September 2006 Order.

As to NCPA's substantive concerns about the chosen parameter levels, the CAISO notes that these parameter values are in place in the current market simulation process and have been since late October. Market Participants continue to gain experience with the market with the parameters for adjusting non-priced quantities in place. If at any time, either before or after *go-live*, the CAISO and its stakeholders

decide that adjustments to one of these tariff-based parameter values is necessary, the CAISO will file any changes with the Commission.

IV. CONCLUSION

For the reasons explained above, the Commission should accept the Parameter Filing as filed.

Respectfully submitted,

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Dated: December 12, 2008

CERTIFICATE OF SERVICE

I hereby certify that I have served the foregoing document upon the parties listed on the official service list in the 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 at Washington, D.C. this 12th day of December, 2008.

/s/ Daniel Klein
Daniel Klein