



California Independent  
System Operator Corporation

October 19, 2007

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

**Re: California Independent System Operator Corporation,  
Docket Nos. ER08-\_\_\_\_-000  
Amendment to MRTU Tariff to Implement Caps on Start-Up and  
Minimum Load Costs**

Dear Secretary Bose:

Pursuant to Section 205 of the Federal Power Act, 16 U.S.C § 824d, and Section 35.15 of the regulations of the Federal Energy Regulatory Commission (“Commission”), 18 C.F.R. § 35.15, the California Independent System Operator Corporation (“CAISO”) respectfully submits for filing an original and five copies of proposed amendments to its FERC electric tariff to implement the CAISO’s Market Redesign and Technology Upgrade (“MRTU Tariff”).<sup>1</sup> This amendment will amend the MRTU Tariff to provide limits to Start-Up and Minimum Load Costs for suppliers that are eligible to recover such Costs in accordance with the Registered Cost Option, as set forth in Section 30.4 of the MRTU Tariff. As described in further detail below, the CAISO is proposing these limits in order to protect against the potential exercise of market power by suppliers through the submission of extremely high Start-Up and Minimum Load Costs, particularly in resource-constrained areas of the CAISO grid.

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<sup>1</sup> The CAISO also tenders two additional copies of this filing to be time and date stamped and returned to our courier.

## I. DISCUSSION OF PROPOSED CHANGES TO MRTU TARIFF

### A. Need for the Start-Up and Minimum Load Cost Caps

Under MRTU, Generating Units and Resource-Specific System Resources are eligible to recover Start-Up and Minimum Load Costs in addition to Energy generated above the Minimum Load level. This three-part cost recovery system is designed to encourage participants to submit cost information and bids that are more reflective of the actual operational cost components of each resource, and to allow the CAISO to perform more efficient commitment and dispatch of generating resources.

The MRTU Tariff already subjects Bids for Energy above minimum operating levels to Locational Market Power Mitigation (“LMPM”) rules designed to limit the potential exercise of market power within localized areas, where uncompetitive market conditions may often exist due to transmission limitations and ownership of a relatively high portion of supply by one or two suppliers.<sup>2</sup> However, current MRTU rules do not include any similar provisions for directly limiting Start-Up and Minimum Load Costs that may be submitted by resources. Instead, on a semi-annual basis, resources will be allowed to select from two options for establishing Start-Up and Minimum Load Costs used in the day-ahead and real-time energy markets:

- Proxy Cost Option. Under this option, the CAISO will determine a resource’s Start-Up and Minimum Load Costs based on a formula that uses as inputs the resource’s actual operating characteristics (e.g., Start-Up fuel consumption, heat rate at minimum operating level), and relevant fuel costs. For gas-fired units selecting this option, Start-Up and Minimum Load Costs are adjusted for variation in spot market gas prices on a daily basis.
- Registered Cost Option. Under this option, a resource submits values of its own choosing for its Start-Up and Minimum Load Costs that will be effective for the subsequent six-month period. Under current MRTU tariff provisions, these values need not be related to the resource’s actual performance parameters or underlying costs, and are not subject to any maximum limit.<sup>3</sup>

The lack of mitigation measures for the Registered Cost Option creates the potential for the exercise of local market power in a number of ways. First, under some market conditions and bidding strategies, extremely high Start-Up and Minimum Load Costs would have the effect of allowing a unit to be economically withheld, which could result in Locational Marginal Prices (“LMPs”) earned by other units in the generator’s portfolio being set by other units with relatively high Default Energy Bids (“DEBs”). Under other market conditions and bidding strategies, a generator could profit directly by having a unit with extremely high Start-Up and Minimum Load Costs dispatched for reliability reasons.

<sup>2</sup> In addition, all energy bids will be subject to a price cap of \$500/MW during the first year, with the cap increasing to \$750 MW and \$1,000/MW in the second and third years.

<sup>3</sup> See MRTU Tariff, Section 30.4.

Moreover, for units with Resource Adequacy (“RA”) contracts, extremely high Start-Up and Minimum Load Costs could have the effect of withholding RA capacity from the Residual Unit Commitment (“RUC”) process. Units are selected in the RUC process based on three components: Start-Up and Minimum Load Costs plus RUC availability bids. Thus, although RA units are required to have a RUC availability bid of zero and do not receive a RUC availability payment, capacity under RA contracts could be effectively withheld from the RUC process as a result of extremely high Start-Up and Minimum Load Costs.

The CAISO’s initial assessment of this potential problem was that extremely high Start-Up and Minimum Load Costs under the Registered Cost Option would be deterred by the fact that since these costs would be in effect for a minimum six-month period, a generator submitting excessively high costs would run the risk of pricing a unit out of the market during many days when it would be profitable to operate. However, after conducting further analysis of this issue, the CAISO became concerned that a variety of bidding strategies could be employed to exercise locational market power through excessively high Start-Up and Minimum Load Costs. For instance, under MRTU, a resource can always self-commit a unit in order to avoid pricing itself out of the market during hours when it may not be profitable to exercise local market power through the unit’s very high Start-Up and Minimum Load Costs. Thus, the ability to self-commit a unit provides generation owners with a mechanism that can be used to “switch” extremely high Start-Up and Minimum Load Costs “on” or “off” as needed in order to implement strategies for exercising various degrees of local market power that may exist throughout the year.

Another factor affecting the degree to which local market power might be exercised through very high Start-Up and Minimum Load Costs involves the changing nature of various reliability contracts in effect for the various resources within a constrained area. Historically, the ability to exercise local market power in highly constrained areas has been limited by having a significant amount of capacity under Reliability Must Run (“RMR”) contracts, which provide for cost-based compensation for Start-Up and Minimum Load energy. However, with implementation of the CAISO’s RA program, the amount of capacity under RMR contracts is being greatly reduced and replaced by RA contracts for units being used to meet Local Resource Adequacy (“LRA”) requirements.<sup>4</sup> While current LRA provisions require that local RA units make their capacity available to the CAISO, RA contracts are not required to include any provisions that limit a unit’s Start-Up and Minimum Load Costs. Thus, while the degree to which local market power might be exercised through very high Start-Up and Minimum Load Costs under MRTU depends on a variety of conditions that may be difficult to assess at this time, the potential for such bidding strategies clearly exists under current MRTU market rules.

<sup>4</sup> For example, in 2007, the total amount of gas-fired capacity under RMR contracts within the CAISO’s three major Local Reliability Areas (San Diego, Los Angeles Basin and Bay Area) dropped to about 3,200 MW from about 8,400 MW in 2006. Meanwhile, the total amount of gas-fired capacity under RA contracts within these areas increased from 13,200 MW in 2006 to about 16,800 MW in 2007. Thus, in 2007, the amount of capacity under RMR contracts in these three major Local Reliability Areas represents only about 16% of the total capacity under RA or RMR contracts in these areas. It is possible that further reductions in RMR capacity will occur in subsequent years.

Finally, further review of market rules in other ISOs indicated that while every other major ISO with an LMP-based market allows generators to submit bids for start-up and minimum load, each of these ISOs also has provisions to limit the potential for local and system market power through submission of extremely high start-up and minimum load bids. As discussed later in this transmittal letter, the New York ISO, New England ISO and Midwest ISO all impose limits on start-up and minimum load bids which are comparable to the limits being proposed by the CAISO. Meanwhile, PJM market rules mitigate start-up and minimum load bids to cost-based levels on a unit-by-unit basis whenever a unit is dispatched due to a transmission constraint that is deemed to be non-competitive.<sup>5</sup>

Because of these issues, beginning in late 2006, the CAISO initiated a process to consider whether Start-Up and Minimum Load Costs under the Registered Cost Option should be subject to some type of cap in order to protect against the potential exercise of local market power.

## B. Process to Develop Start-Up and Minimum Load Cost Caps

The CAISO has conducted a thorough and open process in developing the proposal for Start-Up and Minimum Load caps set forth herein. The CAISO began the process by posting to its website, on February 9, 2007, a white paper prepared by its Department of Market Monitoring (“DMM”) setting forth three options for limiting costs for Start-Up and Minimum Load Costs under the Registered Cost Option and analyzing the relative merits and limitations of each of these possible approaches.<sup>6</sup> The CAISO accepted stakeholder comments on this white paper through March 5, 2007, and held a conference call on June 1, 2007 to discuss the options for capping Start-Up and Minimum Load Bid Costs.

Based on stakeholder feedback and additional analysis, on June 25, 2007 the CAISO’s DMM posted another white paper addressing caps on Start-Up and Minimum Load Costs.<sup>7</sup> In this paper, DMM presented a proposal for limiting Start-Up and Minimum Load Costs based on “Option B” from the February 9 white paper. Specifically, DMM recommended limiting Start-Up and Minimum Load Costs submitted on a semi-annual basis under the Registered Cost Option to approximately 300% of each resource’s actual Start-Up

<sup>5</sup> The LMPM provisions for energy bids incorporated in the CAISO’s MRTU market design are based most closely on the approach incorporated in PJM’s market design. The CAISO’s MRTU market design also mirrors PJM market rules by allowing generation owners to choose either a daily cost-based option or a six month bid-based option for start-up and minimum load bids. However, contrary to the CAISO’s initial understanding of PJM’s market rules, PJM mitigates start-up and minimum load bids to cost-based levels on a unit-by-unit basis whenever a unit is dispatched due to a transmission constraint that is deemed to be non-competitive. See *PJM Manual 11: Scheduling Operations* at 23. However, implementing the more dynamic approach employed by PJM would require software modifications which could only be incorporated in a later release of the MRTU software.

<sup>6</sup> *MRTU Market Power Mitigation: Options for Bid Caps for Start-Up and Minimum Load Costs* (Feb. 9, 2007), available at <http://www.caiso.com/1b87/1b87a5451d380.pdf>.

<sup>7</sup> *MRTU Market Power Mitigation: Proposal on Bid Caps for Start-Up and Minimum Load Costs* (June 25, 2007), available at <http://www.caiso.com/1c08/1c08b3ec1a150.pdf>.

and Minimum Load Costs. DMM also explained in detail its rationale for recommending this option. The CAISO accepted stakeholder comments on this paper through July 13, 2007.

On August 8, 2007, DMM posted a third white paper addressing Start-Up and Minimum Load caps, setting forth revisions to its proposal as set forth in the June 25 white paper.<sup>8</sup> The purpose of the revisions were to respond to concerns expressed by several stakeholders that the proposed caps were too high, particularly for units located in constrained areas where market power is likely to be prevalent. In response to these concerns, DMM modified the proposal to include lower caps for units located in Local Capacity Areas (“LCAs”) (200% of Start-Up and Minimum Load Costs) and higher caps for units outside of those areas (400% of Start-Up and Minimum Load Costs). Additionally, to address the concern that lower caps may unduly expose suppliers to spot market gas price risk, DMM proposed several options for providing relief should spot market gas prices rise significantly during the minimum 6-month period that the Registered Cost Option would remain in effect. Comments were accepted by the CAISO on this white paper through August 14, 2007. The CAISO presented this proposal to its Board of Governors, which approved the proposal at its September 2007 meeting.

### **C. Description of Proposal for Limiting Start-Up and Minimum Load Costs and Rationale**

Based on its own analyses and stakeholder input, the CAISO has developed a proposal for limiting Start-Up and Minimum Load Costs that balances the need to address the potential for the exercise of local market power by submitting excessively high costs for Start-Up and Minimum Load under the Registered Cost Option, while at the same time providing suppliers with significant discretion in selecting their preferred Start-Up and Minimum Load Cost levels. The CAISO’s proposal is as follows:

- For units within LCAs, Start-Up and Minimum Load Costs under the Registered Cost Option may not exceed 200 percent of the unit’s projected Start-Up and Minimum Load Costs.
- For units outside of LCAs, Start-Up and Minimum Load Costs under the Registered Cost Option may not exceed 400 percent of the unit’s projected Start-Up and Minimum Load Costs.

These limits are set forth in a new Section 39.6.1.6 to the CAISO MRTU Tariff.

Because the election for Start-Up and Minimum Load costs can only be made semi-annually, one of the key issues that needed to be addressed in developing caps for Start-Up and Minimum Load Costs for gas-fired units was how to determine the price of gas used in calculating these caps. Under the CAISO’s proposed approach, gas prices used in calculating caps for gas-fired units will be based on the highest price for monthly gas contracts at Henry

<sup>8</sup> *MRTU Market Power Mitigation: Options for Bid Caps for Start-Up and Minimum Load Costs: Draft Revised Proposal* (Aug. 8, 2007), available at <http://www.caiso.com/1c34/1c34c8c15a770.pdf>.

Hub over a forward-looking six-month period at the time the bids are submitted. The cap for that unit will then remain at that level for the next six months.<sup>9</sup> This methodology is implemented in the MRTU Tariff through the use of two new defined terms: Henry Hub and Projected Proxy Cost.

In the event that daily spot market gas prices increase to the point where a unit's Start-Up or Minimum Load costs (calculated based on daily spot market gas prices) exceed the bid submitted under the Registered Cost Option, the unit will be provided with the option to switch to the Proxy Cost Option. If the unit elects to switch, then it will remain under the Proxy Cost Option for the remainder of the six-month period. The CAISO decided to include this provision in order to address concerns expressed by some generators that caps under the Registered Cost Option could increase the risk that spikes in the spot market for gas could cause their actual Start-Up or Minimum Load cost to exceed their Registered Costs. Proposed language to implement this option is set forth in Section 30.4(2) of the MRTU Tariff. For non-gas fired units, the projected Start-Up and Minimum Load costs will be calculated using the information contained in the Master File for those units.

The CAISO is also proposing several minor edits to Section 30.4 for purposes of clarity. These include changes to make clear that cost values used for Start-Up and Minimum Load Costs are registered in the CAISO's Master File except that gas fired units electing the Proxy Cost option will have their costs adjusted for fuel cost variation on a daily basis. Similarly, Projected Proxy Costs will be calculated based on data in the Master File except that costs for gas fired units will be projected using gas futures contract prices rather than daily gas prices.

The CAISO believes that this proposal represents the best approach for limiting Start-Up and Minimum Load Costs under the Registered Cost Option for several reasons. First, this proposal strikes a reasonable balance between the need to limit the potential for the exercise of local market power through extremely high Start-Up and Minimum Load Costs, and the Commission's stated preference for providing suppliers with an option that is not strictly limited to actual costs for Start-Up and Minimum Load. In practice, the CAISO believes that units that would be most likely to register excessive Start-Up and Minimum Load Cost in the absence of any cap are those units that would expect to be needed for local reliability and are located within the LCAs that have been defined by the CAISO.

Additionally, the 200 percent cap is comparable to the threshold that is typically allowed in other ISOs when units are dispatched for local reliability within constrained areas.<sup>10</sup> The 400 percent cap for units outside of LCAs is slightly higher than the maximum

<sup>9</sup> For example, in order to calculate bid caps applicable for units starting the Registered Cost Option in February 2008, the prices for monthly NYMEX gas contracts at Henry Hub for the months February through July 2008 would first be calculated. The maximum of these six monthly prices would be the gas price used in calculating the cap applicable for each unit starting the Registered Cost Option in February 2008. The cap for these units would then remain fixed at that level for the six-month period from February through July 2008. The bid caps for any units submitting bids in subsequent months would be calculated in the same manner.

<sup>10</sup> For example, ISO New England imposes a bid conduct threshold of 125 percent of costs for a unit's start-up and minimum load bids, and applies a market impact threshold of 200 percent for total uplift payments

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impact threshold in effect in any other ISO for mitigation of start-up and minimum load bids for non-congested areas, but provides reasonable protection for the unlikely event of market power in unconstrained areas.

Also, DMM performed extensive analysis of the historical volatility of daily spot market gas prices in California relative to the forward price of monthly gas contracts at Henry Hub in order to assess the potential risk that extreme spikes in the daily spot market gas prices could make the actual Start-Up and Minimum Load costs of units (given spot market gas prices) higher than the proposed cap. DMM determined that the 200 percent cap provides sufficient "headroom" to cover the maximum spike in gas prices that have occurred over the last five years (relative to the NYMEX futures prices in the preceding six months) with a very high level of confidence. Additionally, as discussed above, the CAISO's proposal provides a "safety net" provision that would allow a supplier under the Registered Cost Option to switch to the Proxy Cost Option for the remaining portion of the six-month bid period if daily gas prices do rise to levels that cause the unit's actual Start-Up and Minimum Load Costs to exceed the registered values submitted by the units under the Registered Cost Option.

Another key advantage of this approach is that the necessary Start-Up and other operating data for all gas-fired units will already have been collected under MRTU and entered into the CAISO's Master File. In effect, this approach utilizes the same data used under the Proxy Cost Option, but substitutes a different gas price, derived from a simple formula that can be easily calculated by the CAISO and all participants. DMM has also verified that this approach will be easy to implement by the CAISO through controls on the values that may be entered by participants in the CAISO Master File, which allows the CAISO to verify and approve data before it is accepted in the Master File.

Finally, the proposed approach would provide a high degree of transparency for Market Participants relative to other options that were identified and considered. The proposed gas price index is based on publicly available data that would be available well in advance of the time when Start-Up and Minimum Load Costs would need to be submitted to the CAISO. In addition, all of the other inputs used in calculating the applicable Start-Up and Minimum Load caps for each unit would be based on data submitted by the generators themselves.

#### **IV. CONTENTS OF FILING**

This filing comprises:

This Transmittal Letter

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relative to costs. The NYISO and MISO impose conduct thresholds for start-up bids of 150 percent of costs for constrained areas and 300 percent of costs for non-constrained areas, and apply a market impact threshold of 150 percent of costs for total uplift payments for units in constrained areas and an impact threshold of 300 percent of costs for units in non-constrained areas.

Attachment A

Clean MRTU Tariff Sheets

Attachment B

MRTU Tariff Sheets Redlined Against Provisions of  
the MRTU Tariff as Filed with the Commission on  
August 3, 2007

## V. COMMUNICATIONS

Correspondence and other communications regarding this filing should be directed to:

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

Although the clean MRTU Tariff sheets provided in Attachment A to this filing letter do contain header and footer information, the CAISO requests waiver of the requirements of Order No. 614<sup>11</sup> to the extent this information does not fully comport with these requirements. As the CAISO explained in its February 8, 2006 MRTU Tariff Filing and its November 20, 2006 compliance filing, this waiver is justified because the portions of the Simplified and Reorganized 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 proposed MRTU implementation date. Prior to that date, the CAISO will submit tariff sheets containing the MRTU Tariff provisions approved by the Commission that fully comply with Order No. 614.

## VII. SERVICE

The CAISO has served copies of this filing on the Public Utilities Commission of the State of California, the California Energy Commission, the California Electricity Oversight Board, and all parties with Scheduling Coordinator Agreements under the CAISO Tariff. In addition, the CAISO has posted a copy of the filing on the CAISO Website and will provide

<sup>11</sup>

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

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courtesy copies of this filing to all parties in the MRTU proceeding, FERC Docket Nos. ER06-615 and ER07-1254.

### VIII. CONCLUSION

For the reasons set forth above, the CAISO respectfully requests that the Commission accept its proposed modifications to the MRTU Tariff.

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**Attachment A – Clean Sheets**

**MRTU Tariff Amendment Filing**

**Bid Caps for Start-Up and Minimum Load Costs**

**October 19, 2007**

**30.4 Election for Start-Up Costs and Minimum Load Costs.**

Scheduling Coordinators for Generating Units and Resource-Specific System Resources may elect on a semi-annual basis either of the two options provided below (the Proxy Cost option or the Registered Cost option) for specifying their Start-Up Costs and Minimum Load Costs to be used for those resources in the CAISO Markets Processes. Unless the Scheduling Coordinator has registered Start-Up Costs and Minimum Load Costs in the Master File in accordance with the Registered Cost option, the CAISO will assume the Proxy Cost option as the default option.

(1) **Proxy Cost Option.** For natural gas fired resources, the Proxy Cost option uses fuel-cost adjusted formulas for Start-Up Costs and Minimum Load Costs based on the resource's actual unit-specific performance parameters. The Start-Up Costs and Minimum Load Costs values utilized in the CAISO Markets Processes will be these formulaic values adjusted for fuel-cost variation on a daily basis as calculated pursuant to a Business Practice Manual. For all other resources, this option shall be based on the relevant cost information of the particular resource, which will be provided to the CAISO by the Scheduling Coordinator and maintained in the Master File. In the event that the Scheduling Coordinator for a unit does not provide sufficient data for the CAISO to determine the unit's Proxy Costs, the CAISO will assume that the unit's Start-Up Costs and Minimum Load Costs are zero.

**(2) Registered Cost Option.** Under the Registered Cost option, the Scheduling Coordinator may register values of its choosing for Start-Up Costs and Minimum Load Costs in the Master File subject to the maximum limit specified in Section 39.6.1.6. For a resource to be eligible for the Registered Cost option there must be sufficient information in the Master File to calculate the Proxy Cost option. The Start-Up Cost and Minimum Load Cost values utilized in the CAISO Markets Processes will be these pre-specified values and will be fixed for six months in the Master File unless the resource's costs, as calculated pursuant to the Proxy Cost option, exceed the Registered Cost option, in which case the Scheduling Coordinator may elect to switch to the Proxy Cost option for the balance of the six-month period.

**30.5 Bidding Rules.**

**30.5.1 General Bidding Rules.**

(a) All Energy and Ancillary Services Bids of each Scheduling Coordinator submitted to the DAM for the following Trading Day shall be submitted at or prior to 10:00 a.m. on the day preceding the Trading Day, but no sooner than 7 days prior to the Trading Day. All Energy and Ancillary Services Bids of each Scheduling Coordinator submitted to the HASP for the following Trading Day shall be submitted starting from the time of publication, at 1:00 p.m. on the day preceding the Trading Day, of DAM results for the Trading Day, and ending seventy-five (75) minutes prior to each applicable Trading Hour in the RTM. The CAISO will not accept any Energy or Ancillary Services Bids for the following Trading Day between 10:00 a.m. on the day preceding the Trading Day and the publication, at 1:00 p.m. on the day preceding the Trading Day, of DAM results for the Trading Day;

(b) Bid prices submitted by Scheduling Coordinator for Energy accepted and cleared in the IFM

**39.6.1.2 Maximum RUC Availability Bid Prices**

The maximum RUC Availability Bid price shall be \$250/MW/h.

**39.6.1.3 Maximum Ancillary Services Bid Prices**

The maximum level for Ancillary Services Bid prices shall be \$250/MWh.

**39.6.1.4 Minimum Bid Price for Energy Bids.**

Energy Bids into the CAISO Markets less than -\$30/MWh are not eligible to set any LMP. If the CAISO dispatches a resource with an Energy Bid less than -\$30/MWh, the Scheduling Coordinator on behalf of the resource will be eligible to be paid the Bid price upon the submission of detailed information justifying the cost components of the Bid to the CAISO and FERC no later than seven (7) days after the end of the month in which the Bid was submitted. The CAISO will treat such information as confidential and will apply the procedure in Section 20.4 of this CAISO Tariff with regard to requests for disclosure of such information. The CAISO shall pay Scheduling Coordinators for amounts in excess of -\$30/MWh minimum Bid price upon FERC acceptance of the information justifying the cost components.

**39.6.1.5 Minimum Bid Price for Ancillary and RUC Bids.**

Ancillary Service Bids and RUC Availability Bids submitted into CAISO markets must have Bid prices not less than \$0/MW/h.

**39.6.1.6 Maximum Start-Up Cost and Minimum Load Cost Registered Cost Values.**

The maximum Start-Up Cost and Minimum Load Cost values registered in the Master File by Scheduling Coordinators for resources located within a Local Capacity Area that elect the Registered Cost option in accordance with Section 30.4 will be limited to 200% of the Projected Proxy Cost. The maximum Start-Up Cost and Minimum Load Cost values registered in the Master File by Scheduling Coordinators for resources that are not located in Local Capacity Areas that elect the Registered Cost option in accordance with Section 30.4 will be limited to 400% of the Projected Proxy Cost.

**39.7 Local Market Power Mitigation for Energy Bids.**

Local market power mitigation is based on a periodic assessment and designation of transmission constraints as competitive or non-competitive. Such periodic assessment will be performed at a minimum on an annual basis and potentially more frequently if needed due to changes in system conditions, network topology, or market performance. Any changes in constraint designations will be publicly noticed prior to making the change. Upon determination that an ad hoc assessment is warranted, the CAISO will notice market participants that such an assessment will be performed. The determination whether a unit is being dispatched to relieve congestion on a competitive or non-competitive transmission constraint is based on two preliminary market runs that are performed prior to the actual pricing run of the market and are described in Sections 31 and 33 for the DAM and RTM, respectively.

CALIFORNIA INDEPENDENT SYSTEM OPERATOR CORPORATION  
FERC ELECTRIC TARIFF  
AMENDED AND RESTATED SECOND REPLACEMENT VOLUME NO. I

First Revised Sheet No. 551A  
Superseding Original Sheet No. 551A

<b>HASP Bid</b>	A Bid received in HASP that can be used in the MPM-RRD conducted in HASP, the RTUC, STUC, or the RTD.
<b>HASP Inter-SC Trade Period</b>	The period commencing at midnight (0000 hours) on the applicable Trading Day and ending at forty-five (45) minutes prior to the start of the applicable Operating Hour, during which time the CAISO will accept from Scheduling Coordinators Inter-SC Trades of Energy for the HASP, Inter-SC Trades of Ancillary Services, and Inter-SC Trades of IFM Load Uplift Obligations.
<b>HASP Intertie LMP</b>	The average of four (4) 15-minute interval LMPs over a Trading Hour.
<b>HASP Intertie Schedule</b>	The binding output of the HASP including accepted Bids for imported Energy or Ancillary Services and associated LMPs and ASMPs.
<b>Henry Hub</b>	The pricing point for natural gas futures contracts traded on the New York Mercantile Exchange (NYMEX).
<b>High Voltage Access Charge (HVAC)</b>	The Access Charge applicable under Section 26.1 to recover the High Voltage Transmission Revenue Requirements of each Participating TO in a Transmission Access Charge Area.
<b>High Voltage Transmission Facility</b>	A transmission facility that is owned by a Participating TO or to which a Participating TO has an Entitlement that is represented by a

CALIFORNIA INDEPENDENT SYSTEM OPERATOR CORPORATION  
FERC ELECTRIC TARIFF  
AMENDED AND RESTATED SECOND REPLACEMENT VOLUME NO. I

First Revised Sheet No. 575A  
Superseding Original Sheet No. 575A

<b>Priority Nomination Process (PNP)</b>	The step in an annual CRR Allocation in years beyond CRR Year One through which CRR Holders re-nominate (1) Seasonal CRRs they were allocated in the prior year, (2) Long Term CRRs that are expiring, and (3) Existing Transmission Contracts and Converted Rights that are expiring.
<b>Priority Type</b>	The Bid component that indicates if applicable the scheduling priority for the Settlement Period for Reliability Must-Run Generation, if applicable.
<b>Project Sponsor</b>	A Market Participant or group of Market Participants or a Participating TO that proposes the construction of a transmission addition or upgrade in accordance with Section 24.
<b>Projected Proxy Cost</b>	A calculation of a resource's Start-Up Costs and Minimum Load Costs for a prospective six-month period used to determine the maximum Registered Cost for the resource. Projected Proxy Costs will be calculated whenever a Scheduling Coordinator elects the Registered Cost option. For natural gas fired resources, the Projected Proxy Cost will be based on applying the highest average price for monthly forward gas contracts at Henry Hub for the six-month period during which the Registered Cost option is in effect to the fuel consumption parameters used for calculating the Proxy Cost, as set forth in a Business Practice Manual. For non-gas fired resources, the Projected Proxy Costs for Start-Up Costs and Minimum Load Costs will be calculated using the information contained in the Master File used for calculating the Proxy Cost, as set forth in the Business Practice Manual.
<b>Proposal for Installation</b>	A written proposal submitted by a CAISO Metered Entity to the CAISO describing a proposal for the installation of additional Metering Facilities.
<b>Proxy Cost</b>	The cost basis of a generating resource for which the operating cost is calculated as an approximation of the actual operating cost pursuant to Section 30.4(1).
<b>PSS</b>	Power System Stabilizers
<b>PTDF</b>	Power Transfer Distribution Factor
<b>PTO</b>	Participating Transmission Owner
<b>PTO Service Territory</b>	The area in which an IOU, a Local Public Owned Electric Utility, or federal power marketing authority that has turned over

**Attachment B – Blacklines**

**MRTU Tariff Amendment Filing**

**Bid Caps for Start-Up and Minimum Load Costs**

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### 30.4 Election for Start-Up Costs and Minimum Load Costs.

Scheduling Coordinators for Generating Units and Resource-Specific System Resources may elect on a semi-annual basis either of the two options provided below (the Proxy Cost option or the Registered Cost option) for specifying their Start-Up Costs and Minimum Load Costs to be used for those resources in the CAISO Markets Processes. Unless the Scheduling Coordinator has submitted registered Start-Up Costs and Minimum Load Costs in the Master File in accordance with the Registered Cost option, the CAISO will assume the Proxy Cost-based option as the default option.

(1) **Proxy Cost Option.** For natural gas fired resources, This the Proxy Cost option uses fuel-cost adjusted formulas for Start-Up Costs and Minimum Load Costs based on the resource's actual unit-specific performance parameters. The Start-Up Costs and Minimum Load Costs values utilized in the CAISO Markets Processes will be these formulaic values adjusted for fuel-cost variation on a daily basis as calculated pursuant to a Business Practice Manual. For all other resources, this option shall be based on the relevant cost information of the particular resource, which will be provided to the CAISO by the Scheduling Coordinator and maintained in the Master File. Scheduling Coordinators will not be able to submit Bids containing alternative values for Start Up Costs and Minimum Load Costs. In the event that the Scheduling Coordinator for a unit does not provide sufficient data for the CAISO to determine the unit's Proxy Costs, the CAISO will assume that the unit's Start-Up Costs and Minimum Load Costs are zero.

(2) **Registered Cost Option.** Under this the Registered Cost option, the Scheduling Coordinator may submit register values of its choosing for Start-Up Costs and Minimum Load Costs in the Master File subject to the maximum limit specified in Section 39.6.1.6without regard to the resource's performance parameters or underlying costs. For a resource to be eligible for the Registered Cost option there must be sufficient information in the Master File to calculate the Proxy Cost option. These Start-Up Cost and Minimum Load Cost values utilized in the CAISO Markets Processes will be these pre-specified values and will be fixed for six months in the Master File unless the resource's costs, as calculated pursuant to the Proxy Cost option, exceed the Registered Cost option, in which case the Scheduling Coordinator may

elect to switch to the Proxy Cost option for the balance of the six-month period. Scheduling Coordinators will not be able to submit Bids containing alternative values for Start-Up Costs and Minimum Load Costs.

\* \* \*

**39.6.1.6 Maximum Start-Up Cost and Minimum Load Cost Registered Cost Values.**

The maximum Start-Up Cost and Minimum Load Cost values registered in the Master File by Scheduling Coordinators for resources located within a Local Capacity Area that elect the Registered Cost option in accordance with Section 30.4 will be limited to 200% of the Projected Proxy Cost. The maximum Start-Up Cost and Minimum Load Cost values registered in the Master File by Scheduling Coordinators for resources that are not located in Local Capacity Areas that elect the Registered Cost option in accordance with Section 30.4 will be limited to 400% of the Projected Proxy Cost.

\* \* \*

**Appendix A**

**Henry Hub**      The pricing point for natural gas futures contracts traded on the New York Mercantile Exchange (NYMEX).

\* \* \*

**Projected Proxy Cost**      A calculation of a resource's Start-Up Costs and Minimum Load Costs for a prospective six-month period used to determine the maximum Registered Cost for the resource. Projected Proxy Costs will be calculated whenever a Scheduling Coordinator elects the Registered Cost option. For natural gas fired resources, the Projected Proxy Cost will be based on applying the highest average price for monthly forward gas contracts at Henry Hub for the six-month period during which the Registered Cost option is in effect to the fuel consumption parameters used for calculating the Proxy Cost, as set forth in a Business Practice Manual. For non-gas fired resources, the Projected Proxy Costs for Start-Up Costs and Minimum Load Costs will be calculated using the information contained in the Master File used for calculating the Proxy Cost, as set forth in the Business Practice Manual.

\* \* \*