



California Independent
System Operator Corporation

January 26, 2011

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

**Re: California Independent System Operator Corporation
Docket No. ER11-____-000
Start-up and Minimum Load Tariff Amendments**

Dear Secretary Bose:

The California Independent System Operator Corporation (ISO) submits this tariff amendment to allow scheduling coordinators to make independent elections for start-up and minimum load cost compensation and to submit daily bids for start up and minimum load costs for resources subject to the proxy cost option.¹ The ISO is also proposing to codify in the ISO tariff its longstanding practice of temporary suspension of the daily master file updates when necessary to accommodate system upgrades and perform system maintenance. The ISO requests an effective date of April 1, 2010.

I. Background and Summary

The ISO recognized the need to offer scheduling coordinators greater flexibility with respect to how their resources are compensated for start-up and minimum load costs soon after launching its new locational marginal pricing market design in April, 2009. Section 30.4 of the ISO tariff sets forth the options available to scheduling coordinators for start-up and minimum load cost compensation for generating units and resource-specific system resources. Under the proxy cost option, start-up and minimum load costs are calculated daily based on a calculated gas price index and resource-specific values contained in the ISO's master file. Under the registered cost option, scheduling

¹ The ISO submits this filing pursuant to Section 205 of the Federal Power Act, 16 U.S.C. § 824d, Part 35 of the Commission's regulations, 18 C.F.R. Part 35, and in compliance with Order No. 714, *Electronic Tariff Filings*, FERC Stats. & Regs. ¶ 31,276 (2009). The ISO is also sometimes referred to as the CAISO. Capitalized terms not otherwise defined herein have the meanings set forth in Appendix A of the ISO tariff.

coordinators can specify the start-up and minimum load values up to a cap of 200% of the projected proxy costs.² As of April 1, 2009, scheduling coordinators were required to elect either the proxy cost or registered cost options for *both* start-up and minimum load cost compensation. In addition, the elections remained in effect for a minimum of six months.

The ISO's first step allow greater flexibility regarding options for start-up and minimum load costs was to allow scheduling coordinators to switch between the proxy cost and registered cost options every 30 days; rather than requiring a minimum of six months before a scheduling coordinator could switch elections. This change went into effect on August 1, 2009.³

The ISO initiated phase two of its stakeholder process to increase flexibility with respect to start up and minimum load cost compensation in the spring of 2010.⁴ In this tariff amendment, the ISO is proposing to permit independent elections of start-up and minimum load costs and to allow (non-negative) daily bidding of start-up and minimum load costs for resources subject to the proxy cost option up to the calculated proxy cost values. The ISO Board of Governors approved the policy changes at its July 26, 2010 meeting. Stakeholders either supported or did not oppose these changes originally proposed for implementation in the fall of 2011 and now proposed for implementation effective April 1, 2011.⁵

As part of the tariff stakeholder process, the ISO proposed to codify its long-standing practice of imposing temporary suspension of daily master file updates to accommodate such practices as system maintenance and software updates. No stakeholder opposed this proposed tariff clarification.

II. Proposed Tariff Changes

A. Independent Election of Start-up and Minimum Load Costs

The ISO is proposing to amend section 30.4 to allow independent election of start-up and minimum load costs. The ISO is also proposing minor conforming changes to section 30.4.1.2 to reflect that the election is independent.

² See ISO tariff section 39.6.1.6.

³ *Order Accepting Tariff Modifications*, 128 FERC ¶ 61,282 (2009). This tariff amendment also modified the cap applicable resources located within defined local capacity areas from 400% of projected proxy costs down to 200% with the result that all resources eligible for the registered cost option were subject to the same 200% cap.

⁴ The stakeholder process concerning the proposed changes to start-up and minimum load compensation was included with the stakeholder process that addressed transition costs for multi-state generating resources. The ISO filed the related tariff amendment for multi-state generating resources on July 29, 2010.

⁵ See Attachment C hereto.

B. Daily Bidding of Start-up and Minimum Load Costs under the Proxy Cost Option

The ISO is proposing to amend sections 30.7.9 and 30.7.10 to permit daily bidding of start-up and minimum load costs, respectively, when the applicable election is the proxy cost option. Such bids may not be negative and must be less than or equal to the calculated daily proxy cost. Consistent with existing tariff provisions, a resource subject to the registered cost option will have any start-up or minimum load bid overwritten with its registered cost value as reflected in the ISO's master file.

The ISO is also proposing conforming changes to section 30.4.1.1 to reflect that daily bidding is permitted on behalf of resources electing the proxy cost option for either start-up or minimum load costs including cross-references to tariff section 30.7.9 and 30.7.10.

C. Temporary Master File Suspension

The main purpose of section 30.7.3.2 is to indicate that the status of bids may change following the bid revalidation process that occurs following the normal daily master file update. Section 30.7.3.2 sets forth the ISO's standard practice of updating the master file on a daily basis to reflect changes submitted by scheduling coordinators between the previous five and eleven business days. While this is the normal master file process, the ISO's historic practice is to implement brief suspensions—halting the daily master file update—when performing such operations as system maintenance or installing new software systems. The ISO provides market participants with advance notice of any suspension of the daily master file updates. The ISO is proposing to clarify section 30.7.3.2 to indicate that daily master file updates do not occur during any such temporary suspension.

III. Effective Date

The ISO requests that the Commission make the ISO's proposed tariff revisions effective as of April 1, 2011.

IV. Communications

Communications regarding this filing should be addressed to the following individuals, whose names should be put on the official service list established by the Commission with respect to this submittal:

Nancy Saracino
General Counsel
Sidney M. Davies
Assistant General Counsel
California Independent System
Operator Corporation
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Folsom, CA 95630
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E-mail: nsaracino@caiso.com
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V. Service

The ISO has served copies of this transmittal letter, and all attachments, on the California Public Utilities Commission, the California Energy Commission, and all parties with effective Scheduling Coordinator Service Agreements under the ISO tariff. In addition, the ISO is posting this transmittal letter and all attachments on the ISO website.

VI. Attachments

The following attachments, in addition to this transmittal letter, support the instant filing:

Attachment A	Revised ISO tariff sheets that incorporate the proposed changes described above
Attachment B	The proposed changes to the ISO tariff shown in black-line format
Attachment C	July 16, 2010 memorandum from Keith Casey to ISO Board of Governors re Decision on Modifications for Bidding Provisions for Commitment Costs including Attachment A thereto (summary of submitted stakeholder comments) and Attachment B (ISO Market Surveillance Committee memorandum)

VII. Conclusion

For the foregoing reasons, the Commission should accept the proposed tariff changes contained in this filing to become effective as of April 1, 2011. Please contact the undersigned if you have any questions regarding this matter.

Respectfully submitted,

/s/ Sidney M. Davies

Nancy Saracino
General Counsel
Sidney M. Davies
Assistant General Counsel
California Independent System
Operator Corporation
250 Outcropping Way
Folsom, CA 95630

Counsel for the California Independent System Operator Corporation

Attachment A – Clean Tariff

Start Up/Minimum Load Tariff Amendment

California Independent System Operator Corporation

Fifth Replacement FERC Electric Tariff

January 26, 2010

* * *

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 thirty (30)-day 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. The elections are independent; that is, a Scheduling Coordinator electing either the Proxy Cost option or Registered Cost option for Start-Up Costs may make a different election for Minimum Load Costs. If a Scheduling Coordinator has not made an election, the CAISO will assume the Proxy Cost option as the default option. Scheduling Coordinators for Multi-Stage Generating Resources may also register with the CAISO their Transition Costs on a thirty (30)-day basis.

30.4.1 Start-Up and Minimum Load Costs

30.4.1.1 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 either be these formulaic values adjusted for fuel-cost variation on a daily basis as calculated pursuant to a Business Practice Manual, or values specified by Scheduling Coordinators pursuant to Sections 30.7.9 and 30.7.10. Start-Up Costs also include the cost of auxiliary power calculated using the unit-specific MWh quantity of auxiliary power used for Start-Up multiplied by a resource specific electricity price. Minimum Load Costs also includes operations and maintenance costs as provided in Section 39.7.1.1.2. 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, or values specified by Scheduling Coordinators pursuant to Sections 30.7.9 and 30.7.10. 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. If a Multi-Stage Generating Resource elects the Proxy Cost option, that election will

apply to all the MSG Configurations for that resource. The Proxy Cost values for Multi-Stage Generating Resources will be calculated for each specific MSG Configuration.

30.4.1.2 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 for the specific Registered Cost option value. Any such values will be fixed for a minimum of 30 days in the Master File unless (a) the resource's costs for any such value, 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 any 30-day period, or (b) any cost registered in the Master File exceeds the maximum limit specified in Section 39.6.1.6 after this minimum 30-day period, in which case the value will be lowered to the maximum limit specified in Section 39.6.1.6. If a Multi-Stage Generating Resource elects the Registered Cost option, that election will apply to all the MSG Configurations for that resource. The cap for the Registered Cost values for each MSG Configuration will be based on the Proxy Cost values calculated for each MSG Configuration, which are also subject to the maximum limit specified in Section 39.6.1.6.

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30.7.3.2 Master File Data Update

Except as otherwise prescribed in this tariff, and unless the CAISO has issued a temporary suspension, once a day the Master File data is updated with changes to the Master File that were submitted between at least five (5) and up to eleven (11) Business Days in advance, after which all conditional Bids must be re-validated prior to the trading period when the Bid will take effect. After this re-validation takes place, the status of all conditionally modified and conditionally valid Bids may be changed to modified or valid, if the Bid period is for the next relevant DAM.

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30.7.9 Format And Validation Of Start-Up Costs And Shut-Down

For a Generating Unit or a Resource-Specific System Resource, the submitted Start-Up Cost expressed in dollars (\$) as a function of down time expressed in minutes must be a staircase function with up to three (3) segments defined by a set of 1 to 4 down time and Start-Up Cost pairs. The Start-Up Cost is the cost incurred to start the resource if it is offline longer than the corresponding down time. The last segment will represent the cost to start the resource from cold Start-Up and will extend to infinity. The submitted Start-Up Cost function shall be validated as follows:

- (a) The first down time must be zero (0) min.
- (b) The down time entries must match exactly (in number, sequence, and value) the corresponding down time breakpoints of the Start-Up Cost function, as registered in the Master File for the relevant resource as either the Proxy Cost or Registered Cost.
- (c) The Start-Up Cost for each segment must not be negative and must be equal to the Start-Up Cost of the corresponding segment of the Start-Up Cost function, as registered in the Master File for the relevant resource. In addition, if the Proxy Cost option pursuant to Section 30.4 applies to the resource, the Scheduling Coordinator for that resource may submit a daily Bid for the Start-Up Cost that must not be negative but may be less than or equal to the Proxy Cost. For a resource that has elected the Registered Cost option pursuant to Section 30.4, if a value is submitted in a Bid for the Start-Up Cost, it will be overwritten by the Registered Cost reflected in the Master File. If no value for Start-Up Cost is submitted in a Bid, the CAISO will insert the Master File value, as either the Proxy Cost or Registered Cost based on the option elected pursuant to Section 30.4.
- (d) The Start-Up Cost function must be strictly monotonically increasing, i.e., the Start-Up Cost must increase as down time increases.

For Participating Loads and Proxy Demand Resources, a single Shut-Down Cost in dollars (\$) is the cost incurred to Shut-Down the resource after receiving a Dispatch Instruction. The submitted Shut-Down Cost must not be negative.

30.7.10 Format And Validation Of Minimum Load Costs

For a Generating Unit or a Resource-Specific System Resource, the submitted Minimum Load Cost expressed in dollars per hour (\$/hr) is the cost incurred for operating the unit at Minimum Load. The submitted Minimum Load Cost must not be negative. In addition, if the Proxy Cost option pursuant to Section 30.4 applies to the resource, the Scheduling Coordinator for that resource may submit a daily Bid for the Minimum Load Cost that must not be negative but may be less than or equal to the Proxy Cost value. For a resource that has elected the Registered Cost option pursuant to Section 30.4, any submitted Minimum Load Cost must be equal to the Minimum Load Cost as registered in the Master File. For Participating Loads, the submitted Minimum Load Cost (\$/hr) is the cost incurred while operating the resource at reduced consumption after receiving a Dispatch Instruction. The submitted Minimum Load Cost must not be negative.

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Attachment B – Marked Tariff

Start Up/Minimum Load Tariff Amendment

California Independent System Operator Corporation

Fifth Replacement FERC Electric Tariff

January 26, 2010

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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 thirty (30)-day 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. The elections are independent; that is, a Scheduling Coordinator electing either the Proxy Cost option or Registered Cost option for Start-Up Costs may make a different election for Minimum Load Costs. If a Scheduling Coordinator has not made an election ~~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. Scheduling Coordinators for Multi-Stage Generating Resources may also register with the CAISO their Transition Costs on a thirty (30)-day basis.

30.4.1 Start-Up and Minimum Load Costs

30.4.1.1 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 either be these formulaic values adjusted for fuel-cost variation on a daily basis as calculated pursuant to a Business Practice Manual, or values specified by Scheduling Coordinators pursuant to Sections 30.7.9 and 30.7.10. Start-Up Costs also include the cost of auxiliary power calculated using the unit-specific MWh quantity of auxiliary power used for Start-Up multiplied by a resource specific electricity price. Minimum Load Costs also includes operations and maintenance costs as provided in Section 39.7.1.1.2. 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, or values specified by Scheduling Coordinators pursuant to Sections 30.7.9 and 30.7.10. - 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. If a Multi-Stage Generating Resource elects the Proxy Cost option, that election will apply to all the MSG Configurations for that resource. The Proxy Cost values for Multi-Stage Generating Resources will be calculated for each specific MSG Configuration.

30.4.1.2 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 for the specific Registered. ~~The Start-Up Cost option value. Any such values and Minimum Load Cost values utilized in the CAISO Markets Processes will be these pre-specified values and~~ will be fixed for a minimum of 30 days in the Master File unless (a) the resource's costs for any such value, 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 any 30-day period, or (b) any cost registered ~~the Start-Up Costs and Minimum Load Costs~~ in the Master File ~~exceeds~~ ~~exceed~~ the maximum limit specified in Section 39.6.1.6 after this minimum 30-day period, in which case the value ~~they~~ will be lowered to the maximum limit specified in Section 39.6.1.6. If a Multi-Stage Generating Resource elects the Registered Cost option, that election will apply to all the MSG Configurations for that resource. The cap for the Registered Cost values for each MSG Configuration will be based on the Proxy Cost values calculated for each MSG Configuration, which are also subject to the maximum limit specified in Section 39.6.1.6.

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30.7.3.2 Master File Data Update

Except as otherwise prescribed in this tariff, and unless the CAISO has issued a temporary suspension, once a day the Master File data is updated with changes to the Master File that were submitted between at least five (5) and up to eleven (11) Business Days in advance, after which all conditional Bids must be re-validated prior to the trading period when the Bid will take effect. After this re-validation takes place, the status of all conditionally modified and conditionally valid Bids may be changed to modified or valid, if the Bid period is for the next relevant DAM.

* * *

30.7.9 Format And Validation Of Start-Up Costs And Shut-Down

For a Generating Unit or a Resource-Specific System Resource, the submitted Start-Up Cost expressed in dollars (\$) as a function of down time expressed in minutes must be a staircase function with up to three (3) segments defined by a set of 1 to 4 down time and Start-Up Cost pairs. The Start-Up Cost is the cost incurred to start the resource if it is offline longer than the corresponding down time. The last segment will represent the cost to start the resource from cold Start-Up and will extend to infinity. The submitted Start-Up Cost function shall be validated as follows:

- (a) The first down time must be zero (0) min.
- (b) The down time entries must match exactly (in number, sequence, and value) the corresponding down time breakpoints of the Start-Up Cost function, as registered in the Master File for the relevant resource as either the Proxy Cost or Registered Cost.
- (c) The Start-Up Cost for each segment must not be negative and must be equal to the Start-Up Cost of the corresponding segment of the Start-Up Cost function, as registered in the Master File for the relevant resource. In addition, if the Proxy Cost option pursuant to Section 30.4 applies to the resource, the Scheduling Coordinator for that resource may submit a daily Bid for the Start-Up Cost that must not be negative but may be less than or equal to the Proxy Cost. For a resource that has elected the Registered Cost option pursuant to Section 30.4, if ~~If a value is submitted in a Bid for the Start-Up Cost, it will be overwritten by the Registered Cost reflected in the Master File, value as either the Proxy Cost or Registered Cost based on the option elected pursuant to Section 30.4.~~ If no value for Start-Up Cost is submitted in a Bid, the CAISO will insert the Master File value, as either the Proxy Cost or Registered Cost based on the option elected pursuant to Section 30.4.
- (d) The Start-Up Cost function must be strictly monotonically increasing, i.e., the Start-Up Cost must increase as down time increases.

For Participating Loads and Proxy Demand Resources, a single Shut-Down Cost in dollars (\$) is the cost incurred to Shut-Down the resource after receiving a Dispatch Instruction. The submitted Shut-Down Cost must not be negative.

30.7.10 Format And Validation Of Minimum Load Costs

For a Generating Unit or a Resource-Specific System Resource, the submitted Minimum Load Cost expressed in dollars per hour (\$/hr) is the cost incurred for operating the unit at Minimum Load. The submitted Minimum Load Cost must not be negative. In addition, if and must be equal to the Minimum Load Cost under the Proxy Cost option pursuant to Section 30.4 applies to the resource, the Scheduling Coordinator for that resource may submit a daily Bid for the Minimum Load Cost that must not be negative but may be less than or equal to the Proxy Cost value. For a resource that has elected the Registered Cost option pursuant to Section 30.4, any submitted Minimum Load Cost must be equal to the Minimum Load Cost, as registered in the Master File, for the relevant resource.

For Participating Loads, the submitted Minimum Load Cost (\$/hr) is the cost incurred while operating the resource at reduced consumption after receiving a Dispatch Instruction. The submitted Minimum Load Cost must not be negative.

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Attachment C
ISO Board of Governors Memo

Memorandum

To: ISO Board of Governors

From: Keith Casey, Vice President, Market & Infrastructure Development

Date: July 16, 2010

Re: **Decision on Modifications to Bidding Provisions for Commitment Costs**

This memorandum requires Board action.

EXECUTIVE SUMMARY

Shortly after the implementation of the new market, several suppliers identified issues related to the inefficient start-up and commitment of certain generation resources. In response, Management commenced a two phased stakeholder process to resolve these issues. Phase one, which was completed last year, resulted in rule changes to significantly reduce the time restrictions for changing start-up and minimum load costs from six months to thirty days. In phase two of this initiative, Management proposes to: 1) further refine start-up and minimum load calculations and bidding rules and 2) apply mitigation rules for multi-stage generation transition costs.

Moved, that the ISO Board of Governors approves the proposed tariff change regarding modifications to bidding provisions for commitment costs as detailed in the memorandum dated July 16, 2010; and

Moved, that the ISO Board of Governors authorizes Management to make all necessary and appropriate filings with the Federal Energy Regulatory Commission to implement the proposed tariff change.

BACKGROUND

At the start of the new market, generating units were evaluated for unit commitment by the market optimization based on their start-up and minimum load cost elections that were required to be in place for six months. Under these rules, a market participant could elect either a registered cost option or a proxy cost option for their start-up and minimum load bids. Under the proxy cost option, a unit's start-up and minimum load values are calculated daily by the ISO based on formulas that adjust for fuel costs using daily gas prices. On the other hand if a market participant selects the registered cost option, the unit owner provides specific values for start-up and minimum load that remain fixed for the selection period. The submitted values under this option cannot be greater than 200% of the projected proxy costs, which are calculated by the ISO on a monthly basis using future gas price indices.

Within the first few months of the new market, many market participants expressed concerns that their resources were being committed more frequently than good utility practice would dictate and were frequently held at minimum operating levels only to be de-committed one day and re-committed the next. Market participants observed that this caused extra wear and tear on their generating units, used up fixed numbers of unit start-ups and emissions allocations, and made it difficult for unit owners to recoup their operating costs.

While some of these cycling issues were due to generation and transmission outages and to extensive self-scheduling at the start of the new market, the ISO recognized that the market software was also contributing to this problem and that the software needed some fine-tuning and corrections. In addition, the ISO also recognized that market participants needed greater flexibility to manage their resources. To further address these concerns, the ISO launched a two-phased approach to enhancing market participants' options for electing start-up and minimum load cost compensation. The first phase, which was implemented in July 2009, significantly shortened the period in which scheduling coordinators could modify their start-up and minimum load elections between the registered and proxy cost options from six months to 30 days.

The second phase, which generated this proposal, provided the ISO and stakeholders the opportunity to further refine start-up and minimum load cost compensation. While the policy change resulting from the first phase of the initiative revised the timing of cost option elections, the calculations of those cost options themselves are revised through this second phase to better capture cost components of start-up and minimum load. Additionally, through this renewed initiative, the ISO and stakeholders have developed bidding rules that will be applied to multi-stage generating resources' transition costs.

Multi-stage generating resources are capable of operating in multiple output ranges due to their generating technology. The most common example of this is a combined cycle generator which is capable of operating under different turbine configurations. For example, a 2x1 combined cycle resource is comprised of two gas turbines, and one steam turbine. Even this relatively simple multi-stage generating resource can operate in one of a number of configurations at a given time: one gas turbine, two gas turbines, one gas turbine and the steam turbine, and both gas turbines and the steam turbine. The multi-stage generator modeling

functionality, which is scheduled to be launched on October 1, 2010, will enable market participants with multi-stage generators to bid in the various configurations of those units separately. Associated with transitions between any of the various configurations are transition costs. The mitigation of transition costs is included as an important component of this proposal as they could otherwise potentially be used strategically to withhold a multi-stage generating resource's capacity.

PROPOSAL

In this initiative, ISO staff worked with stakeholders to develop refinements to start-up and minimum load calculations and enhanced bidding options, and also formulated market power mitigation rules for multi-stage generator transition costs.

The changes to start-up and minimum load are designed to improve the extent to which these parameters capture the costs of starting up a generating unit and running it at its minimum load level. In so doing, the market optimization will make more efficient dispatch decisions and market participants will be better able to recoup the costs associated with starting a generating unit and running it at its minimum output level.

Management proposes the following modifications to the start-up and minimum load parameters:

General changes to start-up and minimum load cost rules

- Allow market participants to independently elect the proxy cost option or the registered cost option for their start-up and minimum load costs. The current election applies to both start up and minimum load costs. These elections would still be fixed for 30 days;
- Enable market participants to submit bids on a daily basis for start-up and minimum load values when they have elected the proxy cost option . The bids must be limited to a minimum of zero to a maximum of the calculated proxy value. Under the current rules, no daily bidding is allowed;
- Evaluate the default operations and maintenance values that are used in the proxy calculation for minimum load every three years. Currently the default O&M values for minimum load are fixed and no review cycle is specified; and
- Change the natural gas delivery point to Citygate from Border for Southern California to better reflect the price of delivered natural gas when calculating start-up, minimum load and transition costs under the proxy cost option.

Rules for Transition Costs

In addition to the changes to start-up and minimum load, Management proposes market power mitigation rules to mitigate the potential for strategic use of multi-stage generator transition costs to withhold capacity of those units. Just as start-up and minimum load costs figure into commitment decisions, transition costs figure into the optimization's decisions to move a multi-stage generator resource from one configuration to another. For this reason, transition costs must be constrained appropriately, while still providing enough flexibility for these complex resources to express the costs associated with moving between configurations. The market power mitigation rules developed for transition costs through this stakeholder initiative are summarized below:

- The first rule (Rule 1) limits the magnitude of the transition costs from offline to a certain configuration. The rule states that the sum of the transition costs for a multi-stage generator resource cannot exceed 125% of the cost associated with starting directly to the highest MW configuration (proxy cost value +10%);
- The second rule (Rule 2) is designed to limit transition costs between configurations such that the cost of moving from one configuration to another is between 100 and 125 percent of the direct transition to the highest MW configuration; and
- Costs associated with downward transitions (higher MW output configuration to a lower MW output configuration) will not be subject to Rule 1 and Rule 2. Rather, multi-stage generator units can submit a heat input value (fuel quantity) which is used to calculate the downward transition costs.

POSITIONS OF THE PARTIES

In the written comments, there were several common issues brought forward by stakeholders as described below. Stakeholder comments are further detailed in the stakeholder matrix which is *Attachment A* to this memo. The formal opinion from the Market Surveillance Committee is included as *Attachment B*.

Independent election of either the proxy or registered option for start-up and minimum load cost calculations

Comments submitted by stakeholders as well as the Market Surveillance Committee were uniformly supportive of this change. The change will enable participants to elect the proxy cost option, which is indexed to the gas price index, for minimum load costs while electing the registered cost option, which is governed only by a cap of 200% of the proxy cost option, for start-up costs.

Dynegy and NCPA/SVP expressed support for inclusion of an opportunity costs component for the proxy start-up calculation for environmentally use-limited resources. RRI Energy Services, Inc. and SCE requested that the ISO develop a fixed component to the start-up proxy cost calculation methodology through which they could recoup “per start” O&M costs. Given the flexibility associated with the independent election of proxy or registered cost options for start-up and minimum load, Management concluded that these more complex changes – for which there was not broad support among stakeholders – are not warranted at this time. Market participants are not required to provide justification for their registered cost value, which is restricted only in that it must be less than or equal to 200% of the calculated proxy cost option. Thus, if the per MWh O&M element of minimum load is insufficient to recoup their O&M costs, the registered cost option can be selected so that larger O&M costs associated with starting and/or running a resource at minimum load can be recouped.

Daily bidding of start-up and minimum load for costs calculated using the proxy cost calculation methodology provided those bids are between \$0 and the calculated proxy value

This functionality was requested and strongly supported by stakeholders.

Dynegy advocated for unrestricted daily bidding of start-up and minimum load costs that would be subject to dynamic mitigation using the same methodology used for energy bids. Implementing daily bidding of start-up and minimum load in this manner would require significant changes to the market optimization through the inclusion of the dynamic mitigation of start-up and minimum load costs. Without broader support and evidence of the need to do so, Management does not propose such functionality at this time. The Department of Market Monitoring and the Market Surveillance Committee are in agreement with this approach.

Rebenchmarking of default O&M values every three years

Stakeholder feedback through the first phase of the initiative indicated the need to recover higher O&M costs related to unit start-up. As part of the initial straw proposal for the second phase of the initiative, ISO staff suggested for consideration the methodology PJM has employed for participants to submit detailed O&M cost accounting for their generating resources to the ISO. There was little support for this option, and stakeholders did not want this option to supplant the option currently available to negotiate a higher O&M value as part of developing a negotiated default energy bid.

Since the negotiated O&M rate has not been sought by any market participants, and there was not broad support for submitted O&M values as they have in PJM, we conclude that the current per MWh O&M default values used in the proxy minimum load calculations are not insufficient. Those participants who have contractual arrangements that include per-start O&M costs are encouraged to take advantage of the proposed ability to elect the registered cost option for start-up costs, while employing the proxy cost option for minimum load costs which are more dependent on fuel prices.

Change to the natural gas delivery point price used for generating resources south of Path 15

Stakeholders were supportive of the proposal to replace the Southern California Border natural gas delivery point price with the City Gate price for generating units south of Path 15. Use of this index will better reflect the cost of delivered natural gas in Southern California.

Dynegy, RRI and Wellhead brought up additional concerns with respect to natural gas pricing. Those issues included the need to recoup intra-state transportation charges, differences between day-ahead and real-time natural gas prices and the balancing charges associated with real-time deviations from day-ahead energy schedules, and costs resulting from operational flow orders. Although these may well be costs that participants may legitimately seek to recoup, support for these sporadic costs was not broad enough for Management to recommend the complex implementation of mechanisms to capture these costs.

Upward multi-stage generator transition costs will be bound by two rules; heat input values will be submitted for downward transition costs

Throughout the policy initiative, stakeholders provided invaluable feedback to help refine the transition cost bounding rules. Since this is a new approach to cost mitigation, there were many questions and clarifications, examples, and subsequent revisions before Management arrived at the final policy recommendation. This element of the proposal in particular has benefited from the collaborative and supportive participation of stakeholders. Stakeholders are supportive of this proposal.

RECOMMENDATION

Management requests Board approval of this proposal for modifications to bidding provisions for commitment costs. The mitigation rules for multi-stage generating resources' transition costs will be filed with the Federal Energy Regulatory Commission and implemented as part of the multi-stage generation design in October 2010, whereas the changes to start-up and minimum load are targeted for implementation by Fall 2011.

Stakeholder Process: Modifications to Bidding Provisions for Commitment Costs

Summary of Submitted Comments

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

- Round One: April 16, 2010
- Round Two: May 21, 2010
- Round Three: June 28, 2010

This matrix summarizes comments provided on the *Revised Straw Proposal*, which were due May 21, 2010, and comments on the *Draft Final Proposal*, which were due June 28, 2010.

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

Other stakeholder efforts include:

- Market Surveillance Committee Meeting: March 19, 2010
- Stakeholder Conference Call: March 24, 2010
- Stakeholder Conference Call: May 13, 2010
- Stakeholder Conference Call: June 21, 2010

Management Proposal	CERS	CPUC	Dynegy	NCPA and SVP	NRG	PG&E	RRI	SCE	Wellhead	DMM	Management Response
Independent election of proxy or registered cost option for start-up and minimum load	No comment	No comment	Supports	No comment	Supports	Supports	No comment	Supports	Supports	Strongly supports	Implementation is targeted for the Fall 2011 release
Daily bidding of proxy start-up and minimum load between \$0 and the calculated proxy cost value	No comment	No comment	Supports	No comment	Does not object	Supports	No comment	No comment	No comment	Supports	Implementation is targeted for the Fall 2011 release
No more frequent bidding of commitment costs other than the above	No comment	No comment	Does not support Encourages the ISO to explore	No comment	Does not support Recommends daily bidding up to registered cost	Supports	No comment	Supports Recommends a fixed component to proxy SU	No comment	Supports	Without significant changes to the market in order to guard against the potential exercise of market power, this change is not advisable
No fixed component of proxy commitment costs	Does not support Encourages ISO to consider this change	No comment	Does not support Encourages ISO to consider this change	No comment	No comment	Supports	Does not support	Does not support Strongly supports having a fixed component of proxy start-up	No comment	Supports	Independent election of proxy/registered for start-up/minimum load should address this need. Also, if O&M costs were significantly different from the default O&M adders, we would expect to see use of the negotiated O&M option, which to-date has not been employed
Re-benchmark default O&M values every 3 years (proxy minimum load)	No comment	Supports	Supports	No comment	No comment	Supports	Does not support removal of bid-in O&M from proposal	No comment	Supports	Supports	The first re-benchmark is targeted for April 2012 (3 years from the launch of the new market)

Management Proposal	CERS	CPUC	Dynegy	NCPA and SVP	NRG	PG&E	RRI	SCE	Wellhead	DMM	Management Response
Replacement of SoCal Border gas price with SoCal CityGate price (proxy start-up and minimum load, transition costs)	No comment	Supports	Supports	No comment	Strongly supports However, use of indexed gas is a flawed concept	Supports	Supports	Supports Requests clarity	Supports	Supports	The SoCal CityGate price will be used for transition costs, and for proxy start-up and minimum load calculations, and for determining the cap for registered start-up and minimum load upon implementation which is targeted for Fall 2011. All other calculations will continue to use the SoCal Border price
No change to adder for natural gas transport, no compensation for operational flow order costs or day-ahead/real-time gas price differentials (proxy start-up and minimum load, transition costs)	No comment	No comment	Does not support Requests a firm timeline for reevaluation of these changes	No comment	Does not support Believes that cost recovery methodologies should be developed to compensate for costs associated with day-ahead versus real-time gas price differentials	No comment	Does not support Supports a 10% adder to cover natural gas transport -or- resource-specific natural gas transport adder	No comment	Does not support Believes that cost recovery methodologies should be developed to compensate for costs associated with operational flow orders and day-ahead versus real-time gas price differentials	Supports future development of functionality to capture these costs Does not support an adder	An adder is not an efficient manner to capture these costs. The ISO agrees that it is reasonable to pursue cost recovery for natural gas transport costs and costs associated with operational flow orders. The ISO encourages stakeholders to pursue adding a market initiative to the catalog of potential future enhancements.

Management Proposal	CERS	CPUC	Dynegy	NCPA and SVP	NRG	PG&E	RRI	SCE	Wellhead	DMM	Management Response
No opportunity costs component of proxy start-up	No comment	No comment	Does not support Encourages the ISO to further discuss and consider incorporating opportunity costs into proxy start-up	Does not support Opportunity costs for use-limited resources should be incorporated into proxy calculations	Prefers daily start-up/minimum load bidding to this element of the proposal	Strongly supports	No comment	No comment	No comment	Supports the inclusion of opportunity costs, but does not feel the proposed approach should be pursued at this time	Without significant support for this methodology for opportunity cost calculations, nor an alternative proposal, we feel that this functionality is not an appropriate market enhancement at this time
Upward multi-stage generating resource transition costs bounded by 2 rules	Recommends fixed component of transition costs	Conditionally Supports	Does not object	No comment	No comment	Supports Appreciates changes to address startability of configurations	No comment	Supports Recommends fixed component of transition costs Questions re configuration hierarchy	No comment	Generally supportive Recommends robust validation of transition costs, status, and operating parameters	The ISO commits to monitoring submitted heat input values for configuration start-ups
Downward multi-stage generating resource transition costs	Recommends fixed component of transition costs	Conditionally Supports	No comment	No comment	No comment	Conditionally supports	No comment	Conditionally supports	No comment	Generally supportive Recommends robust validation	The ISO commits to monitoring submitted heat input values for downward transitions

Opinion on Changes to Bidding and Mitigation of Commitment Costs

by

Frank A. Wolak, Chairman

James Bushnell, Member

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Market Surveillance Committee of the California ISO

June 4, 2010

Summary

This opinion comments on the California ISO's May 5, 2010 proposal for changing procedures for bidding and mitigation of commitment costs, which include start-up, minimum load, and transition costs for multistage generators (MSGs). We support many of these changes, as well as the ISO's recommendation not to consider opportunity cost bidding at this time, because we believe that the complexity of procedures required are not justified by the potential of market efficiency benefits from its implementation. We also support the ISO's recommendation to retain a 30 day minimum time period between changes in registered costs for SU, ML and transition costs for MSGs because of concerns about the possibility that market participants could use this flexibility to raise short-term market prices in response to temporary market conditions that increase their ability to exercise unilateral market. Finally, we suggest a change to the MSG transition costs mitigation procedure in order to allow bid-in transition costs to be decreased by the same percentage relative to the proxy transition costs. This would make the treatment of multistage generator transition costs consistent with the proxy cost option for simple generators' start-up costs, which under the ISO's proposal could be adjusted daily to any level between 0% and 100% of proxy costs.

1. Background

On May 5, 2010, the ISO released its final proposal for the second phase of its revisions of its procedures for bidding and mitigation of generating unit commitment costs,¹ which this opinion comments on. This proposal was the product of a process that, among other stakeholder consultation activities, included ISO staff presentations and public discussions at the MSC meetings of July 16, 2009 and March 19, 2010. We thank the ISO staff and stakeholders that participated in those meetings for their comments and insights.

The commitment costs covered include start-up (SU), which are expressed on a \$ per start basis, and minimum load (ML) costs, which are expressed on a \$/megawatt-hour (MWh) basis for each period that a unit is committed and operating at its registered minimum output level (P_{\min}) or above. Under the new market design, generation units are committed on a least-as-bid-cost basis, considering both commitment costs, as bid by the unit owners, and the unit's energy offer curve. If day-ahead energy market revenues provide insufficient revenues above the

¹The ISO proposal can be found at www.caiso.com/278e/278e8a8a3c8b0.pdf, while other materials, including stakeholder comments, are at www.caiso.com/23d9/23d9c75e22ab0.html.

generation unit owner's as-bid costs to cover these commitment costs, then a separate uplift or "make-whole" payment is made to make up the difference.

When the new market began, generation unit owners had two options for setting their SU and ML offers. The first, the registered cost option, allowed suppliers to bid at any level below a unit-specific offer cap set by the ISO, subject to the restriction that these offers must remain fixed for six months. The second, the proxy cost option, permitted a generation unit owner to submit cost-based offers that adjust on a daily basis to reflect natural gas prices, based upon a formula set by the ISO.

Several generation unit owners that elected the registered cost-based option at the start of the new market experienced more frequent commitment of their quick-start units than they had experienced historically. These units would often be run at minimum load for short periods, and then were quickly de-committed. Generator owners expressed concern that the increased wear and tear on these units were inadequately accounted for in the current cost-based option for SU and ML offers. Also, some of these quick-start units are subject to environmental or maintenance restrictions on the total number of starts during a pre-specified time period, and concerns were expressed that the opportunity cost of a start for these generation units is not accounted for in the current cost-based SU and ML offer option.

In response to these concerns, the ISO adopted a two-phase approach to revising restrictions on commitment cost bidding. After a stakeholder process that included a MSC meeting on July 16, 2009, the first phase was implemented that allowed generator owners to modify their SU and ML offers and to switch between the registered and proxy cost options as frequently as every 30 days. The second phase was to involve ISO and stakeholder consideration of further revisions of the SU and ML rules. Since the early summer of 2009, the problem with a high frequency of starts has largely abated, in part due to these rule changes.

At the July 16, 2009 meeting, the MSC adopted an opinion entitled "Comments on Changes to Bidding Start-Up and Minimum Load."² In that opinion, we supported of the removal of barriers to reflecting verifiable commitment costs in SU and ML offers. These costs could include opportunity costs, if a defensible method for estimating those costs can be devised. We expressed concern that an increasing frequency of adjustment of SU and ML offers could enhance the ability of generator owners to withhold capacity in order to raise wholesale power prices, for example in response to a short-lived system contingency. This was a particular concern for units outside of locally constrained regions whose registered cost offers were allowed to reach values up to 400% of the proxy cost-based option. We recommended that the ISO proceed with more frequent bidding only if improved mitigation procedures were put in place. One option we suggested was to have the registered cost-based offers for all units limited to 200% of the proxy-cost based option. Another suggestion was a hybrid approach that would divide offers into fuel- and nonfuel-based portions, in which the former would be indexed and the latter fixed for six months. Finally, we supported the ISO's long-term goal of subjecting SU and ML offers to local market power mitigation if commitment cost offers were allowed to be changed more frequently than every six months.

²www.caiso.com/23ee/23eeb5842a330.pdf.

The first-phase proposal that was adopted by the ISO in July 2009 was in part consistent with some of these recommendations, in particular the 200% cap for the registered cost option for all units and the adoption of a hybrid offer for the proxy cost option. Under the latter, proxy SU costs include a component indexed on natural gas prices as well as a fixed natural gas transport adder. Proxy ML costs also include an indexed component, as well as an operating and maintenance (O&M) cost adder that is either a default value (either \$2 or \$4/MWh, depending on the generation technology or a per MWh value negotiated with the Independent Entity).

2. Summary of the ISO Proposal

The phase two proposal in the document, “Changes to Bidding and Mitigation of Commitment Costs (May 5, 2010),” addresses issues of the frequency that SU and ML offers can be changed, whether SU and ML offers for a generation unit could be made under different options (proxy and registered cost bidding), and treatment of opportunity costs in SU and ML offers. In addition, because the costs and offers associated with transition costs between alternative configurations of a MSG are conceptually similar to start-up costs for single stage units, the proposal also addresses the bidding and mitigation of these transition costs as well. The May 5, 2010 proposal includes a number of changes relative to the previous phase two straw proposals as a result of consultations with stakeholders.

The first part of the proposal allows generators to choose the proxy or registered cost options for SU and ML independently, so that SU bids can be based on one option and the ML bids can be based on the other. For either SU or ML, if the proxy option is chosen, daily bids are to be allowed, as long as they are nonnegative and no more than the calculated proxy. However, registered costs would be revisable no more often than once every 30 days, which is the present system adopted under phase one. The ISO also does not propose to allow submission of a fixed component offer in the SU proxy cost option, nor does it propose calculation and inclusion of opportunity costs in either SU or ML proxy costs. The second part of the proposal modifies the proxy cost option by refining the calculation of gas prices by replacing the Southern California Border gas delivery point price with the Southern California City Gate price for generators in the SP15 zone.

The third part of the proposal expands the SU and ML mitigation procedures to include mitigation of MSG transition costs. This is proposed because it is possible to use transition cost offers to economically withhold generation from the market in the same manner that unmitigated SU and ML offers could. The ISO proposal involves two rules. Both rules allow only upward transition costs, with downward transition costs excluded. The first rule says that the sum of transition costs for each feasible path from offline to a feasible configuration must be between 100% and 125% of a proxy start-up cost for that configuration (where the proxy includes a 10% adder on estimated costs). The second rule says that the transition cost for any series of upward transitions starting at one configuration and ending at another must sum to between 100% and 125% of the cost of direct transition between the two configurations. Transition cost offers will be indexed by natural gas prices in the same manner as SU and ML costs.

We now discuss three selected features of the proposal relative to the following principles, which were outlined in our previous opinion on SU and MR costs: (a) offers should

be allowed to reflect costs, including opportunity costs, if practical; (b) the added complexity and administrative burdens introduced by procedures for calculating and verifying costs need to be balanced against market efficiency benefits of verifying these costs; and (c) mitigation procedures should safeguard against non-cost reflective offers that would exploit temporary system conditions at the expense of consumers and other market participants. The features we discuss include the minimum frequency of revision of registered cost-based offers; the treatment of opportunity costs; and downward flexibility in bidding transition costs in MSGs. Aspects of the proposal that we do not discuss include independent selection of proxy and registered cost options for SU and MR; the allowance of daily SU and MR bids below proxy costs under the proxy cost option; and the refined gas price calculation procedures. In these cases, we agree with the ISO that these changes could increase market efficiency.

3. Frequency of Revision of Registered Cost-Based Offers

We understand the desire of stakeholders for more frequent revision of registered costs or more frequent switching among the proxy and registered options than the 30-day rule now allows. It is certainly possible that these costs can vary significantly over a month, and an offer that amply covered costs when made may result in significant under-recovery as market conditions, including fuel prices and opportunity costs, change. Some stakeholders have proposed daily bidding to deal with this problem.

However, in our July opinion, we expressed the concern that an increased frequency could significantly enhance the ability of generation unit owners to withhold capacity in order to raise wholesale prices during periods when transmission or generation outages would make such behavior profitable. The imposition by the phase one revision of a 200% rather than 400% cap upon registered cost-based offers from all generators alleviates that concern to a large extent. However, 200% still provides a large amount of headroom, and seems likely to provide insufficient protection if daily or other very frequent bid revision intervals were to be adopted. We can only recommend daily bidding if the cap on offers was very close to the proxy-based bid. Of course, that is in effect what the phase two revision of the proxy-bid option would provide, in which the cap is the proxy cost itself. Generators can change bids daily, as long as they are nonnegative and no more than the proxy cost. Thus, we believe that the phase two proposal embodies an option of daily bidding that includes sufficient market safeguards, in the form of the ability to bid under the proxy cost.

Some generators have argued that higher than proxy cost bids are needed to cover other costs not included in the proxy costs, including opportunity costs and certain nonfuel O&M expenses. We discuss the opportunity cost bidding issue in the next section. This concern can be a valid one. However, we note that for certain verifiable O&M costs, a generator always has recourse to negotiate with the Independent Entity a unit-specific O&M per MWh component of ML. Generators have not availed themselves of this in the past, however, and furthermore have not been very responsive to the July 2009 ISO request for information on nonfuel O&M expenses. It is possible that the effort required to negotiate with the Independent Entity is very high, and this has dissuaded generators from trying to collect justifiable and significant costs by this method. Assuming that this is not the case, we conclude that the lack of exercise of the negotiated cost option and the lack of response to the ISO's request for information about these

costs indicates that these costs are not substantially high. They do not appear to justify either allowing more frequent registered cost-based bidding with a high cap, or a special new category of offer in the form of a fixed component to the SU proxy cost option. The ISO's proposal retains the negotiated cost option, and we believe that this provides a potentially useful recourse for generators who find themselves in a position in which other options result in significant under-recovery of commitment costs.

4. Opportunity Cost Bidding

As we stated in our July opinion, economically efficient regulation implies that suppliers should be allowed to express all verifiable SU and ML costs in their cost-based offers. The opportunity cost of a start due to environmental or other restrictions on the total annual number of starts is, in general, a legitimate reason for setting higher cost-based SU offers. An extra start early in the summer when prices are low could mean that a unit is unavailable during the peak summer weeks when prices are much higher, if it has used up all its starts by that point.

The principle of allowing opportunity cost bidding has already been accepted by the ISO and stakeholders for limited use resources (although the particular procedures for quantifying those costs are more controversial, as indicated by stakeholder comments on the phase two proposals). The main question is: Can a transparent, verifiable, and theoretically justified procedure based on reliable data sources be devised whose development and administration costs are reasonable relative to the market efficiency benefits produced by this change? For hydroelectric plants, for example, we believe that the benefits are reasonable relative to administrative costs because of the crucial role of hydropower in the California market and the central role that opportunity costs play in hydro operations. However, in the case of opportunity costs associated with starts of thermal units, the balance appears to tilt the other way, with the cost of system development exceeding the market efficiency benefits, as the total capacity likely to avail itself of any procedure for quantifying such benefits is likely to be small. Once again, we note that negotiating commitment costs with the Independent Entity remains an option for those cases where opportunity costs are significantly higher than the fuel and other O&M costs associated with starts.

However, if in the future a significant amount of capacity pursues the negotiated cost option in order to recover these opportunity costs, this would signal the need for a more systematic procedure to quantify such costs. The ISO can pursue the option of developing such a procedure at that time.

5. MSG Transition Costs

We agree that multistage generator costs should be treated by the ISO in a manner broadly consistent with the SU and ML offer and mitigation procedures, because SU costs are essentially a special case of MSG costs for a generator that has only two configurations: off and on. The same issues of potential capacity withholding by very high offers, or extraction of a higher fixed cost by taking advantage of temporary system conditions apply to MSG costs for many of the same reasons they apply to SU and ML costs.

The upper bound of 125% of the proxy direct cost of transition upon the sum of upward transition costs along a path between two configurations is a reasonable way to limit the ability of suppliers to exercise unilateral market power through setting these transition costs. However, the lower bound of 100% raises an issue of inconsistency between treatment of MSG units and simple units that just have SU costs. Under the proxy cost option, simple units can change SU bids daily between zero and the proxy, a degree of flexibility that we believe could improve market competitiveness. However, under the ISO proposal for MSG costs, analogous changes in transition cost offers are not possible, due to the tightness of the proposed [100%,125%] band and its being tied to the proxy cost. The reason for the lower bound is to prevent transition costs from being disproportionately loaded onto a particular transition that conceivably might be done in order to restrict output by making it more difficult to transition to the highest output configurations. However, that lower bound prevents MSG costs from being bid in daily in a manner analogous to SU costs under the proxy option. Thus, MSGs have less bidding flexibility than simple units with only SU costs, and this flexibility may harm their ability to compete to supply energy as well as overall market efficiency.

We recommend a change in the phase two proposal to make the MSG and SU offer limitations more consistent. Generators could be allowed to reduce their transition cost bids all the way down to zero, but in a manner that preserves the ratios among the various transition costs. In other words, the ISO-calculated proxy costs would be multiplied by a single percentage (between 0% and 100%), and the other transition cost offers would then have to satisfy the [100%, 125%] bounds implied by those de-rated proxy costs. For instance, a generator could set its transition cost offer to 50% of the proxy cost for each the transitions considered by the ISO. Then its other transition costs would have to satisfy Rules 1 and 2, but based upon the 50% de-rated offer rather than the original proxy. A property of this rule is that if there is a set of transition offers that satisfies Rules 1 and 2 based upon the original proxy costs, then a set of transition offers and de-rated proxy costs that are $X\%$ of the originals will also satisfy a version of Rules 1 and 2 based instead on the de-rated proxy costs. That is, all offers are multiplied by the same percentage. We believe that this would give multi-stage generators some flexibility to respond to market conditions in a way that could benefit consumers, while treating SU and MSG proxy costs in a more consistent manner.

Under the present proposal, such an adjustment could occur no more frequently than once every 30 days, when costs are submitted to the master file. We propose, if there is sufficient stakeholder interest, that the type of downward adjustment just described be allowed on a daily basis, analogous to the SU daily bidding proposal.

6. Concluding Comments

Until the California ISO develops an automatic procedure for local market power mitigation for SU, ML and MSG transition cost offers, we believe that the ISO should maintain its balanced approach to granting generation unit owners flexibility in the level and frequency that these bid parameters can be changed. Under a variety of system conditions, adjusting the value of any of these parameters can be a very profitable way for a supplier with a portfolio of generation units to exercise unilateral market power. The flexibility offered under the ISO's current proposal is sufficient for generation unit owners to recover these costs through market

mechanisms. For those rare instances when this may not be possible, the option to set a negotiated value for ML O&M costs provides market participants an opportunity to recover at least some of these costs. We would favor expanding the negotiated option to allow other components of commitment costs to also be negotiated as a safety valve in case commitment costs are significantly higher than allowed under the ISO proposal and the generator owner can document them.