

Commitment Cost Enhancements – Revised Straw Proposal Comments

California Department of Water Resources State Water Project	1
Comment 1.....	1
Comment 2.....	1
Comment 3.....	1
Comment 4.....	1
Comment 5.....	2
Comment 6.....	2
California Public Utilities Commission.....	2
Summary.....	2
Background.....	3
The CAISO should retain the manual process used to adjust significant day-over-day gas price volatility.....	4
Because of the complexity of the opportunity costs for gas-fired use-limited dispatchable resources staff suggests separating this feature from the CCE initiative.....	4
Conclusion	5
CalPeak Power, LLC	6
Opening Statement.....	6
ISO Response.....	7
General Comments	7
What were the intra-day gas prices and costs incurred by units that had a real-time-related commitment (e.g., real-time only commitment to minimum load or real-time exceptional dispatch) versus the gas price index? Note the ISO is seeking actual costs incurred versus simply the intra-day gas prices. We prefer the data to be provided for at least a year to analyze trends and overall impact to the resource.....	8
How would the increased bid cap be considered with out-of-market intra-day gas cost recovery? For example, should the proxy cap be reduced to 100% for any resource that also receives this type of cost recovery? The ISO would also propose that the costs be considered in bid cost recovery.....	9
What happens when natural gas prices are lower in the intra-day than day-ahead?.....	9

Who would be responsible for validating out-of-market intra-day gas costs? Aside from real-time-related commitments, when else would recovery of out-of-market intra-day gas costs be allowed or under what specific conditions?	10
Would recovery of out-of-market intra-day gas costs discourage hedging (either financial or physical)?	12
Would the overall FERC effort to align the electric and natural gas days help to alleviate the stakeholder concerns about intra-day gas price volatility and illiquidity?	12
Calpine	13
Opening Statement.....	13
Comment.....	13
Comment.....	14
Department of Market Monitoring	14
Opening Comments.....	14
Background	15
ISO proposal	16
Recommendations.....	17
Conclusion	18
Northern California Power Agency	19
Increase in the proxy cost option cap	19
Periodic review of the proxy cost cap	20
Elimination of the registered cost option	20
Changes to the day-ahead market run under tariff waiver	21
Opportunity Costs.....	21
Shadow settlement.....	22
Year-over-year real-time price volatility.....	22
NRG Energy, INC (“NRG”)	22
Opening Statement.....	22
Summary	23
What were the intra-day gas prices and costs incurred by units that had a real-time-related commitment (e.g., real-time only commitment to minimum load or real-time exceptional dispatch) versus the gas price index?.....	26
How would the increased bid cap be considered with out-of-market intra-day gas cost recovery?	28
What happens when natural gas prices are lower in the intra-day than day-ahead?.....	28
Who would be responsible for validating out-of-market intra-day gas costs?	30

Commitment Cost Enhancements – Comments on Revised Straw Proposal

Would recovery of out-of-market intra-day gas costs discourage hedging (either financial or physical)?	30
Would the overall FERC effort to align the electric and natural gas days help to alleviate the stakeholder concerns about intra-day gas price volatility and illiquidity?	31
PG&E	32
Opening Comments.....	32
PG&E supports manually updating the gas price input to the single InterContinental (ICE) gas price index when gas prices increase by 25% or greater day-over-day; similarly, the gas price input should be updated for significant decreases in day-over-day gas prices.	33
Before retiring the registered cost option for all units, CAISO should a.) Confirm that the retirement will not affect the use of Master File registered start-up and minimum load costs for non-gas fired units, and b.) Improve the transparency of and arbitration process for start-up and minimum load cost review by Potomac Economics, particularly for existing contracts that have been approved by the CPUC.	34
The implementation of an opportunity cost adder for gas-fired resources is premature at this time, but could be considered on a trial basis.	36
PG&E believes that a 25% proxy cost buffer applied to all resources during all hours may not sufficiently protect against the exercise of market power.	38
PG&E has also included other comments related to the pending Bidding Rules Initiative:	39
Southern California Edison (SCE)	40
Opening Comments.....	40
Does the Proposal create inconsistency issues with the current definition of what constitutes a ULR?	41
How does the Proposal address annual use limitations? Does the CAISO plan to test the model for such limitations before implementing?	42
What is the mechanism to ensure use limitations will not be violated under the Proposal?	42
How does the Proposal align with the must-offer-obligation element of the Reliability Services Initiative?	42
Is there a contingency plan if the opportunity cost calculation is not effective?	43
How will use limitations of a rolling year, rather than a calendar year, be addressed under the Proposal?	43
Transparency regarding the opportunity cost calculation model.	43
Closing Comments	43
Western Power Trading Forum	44
We appreciate the CAISO’s revision to implement the manual process at the 125% of prior day’s cost level.	44
The CAISO should provide a means for intra-day gas cost recovery.	44

Commitment Cost Enhancements – Comments on Revised Straw Proposal

The 125% proxy cost proposal is a significant improvement to provide a means for DA gas cost recovery.45

Company	Date	Submitted By
California Department of Water Resources State Water Project	7/1/2014	Deane Burk dburk@water.ca.gov
Comment 1		
<p>SWP is concerned that CAISO has not discussed more fully the proposed removal of the Registered Cost (RC) option and the potential impact on hydropower and non-gas Use-Limited Resources (ULRs) to appropriately reflect Start-up and Minimum Load costs. Additional testing of the proposed opportunity cost model should be completed and the results made available to stakeholders prior to considering further revisions. CAISO should consider including opportunity cost methodologies for all ULRs as part of this proposal.</p>		
ISO Response		
<p>The ISO appreciates your comments. For non-natural gas-fired resources (including hydro), the current proxy cost option has all of the same cost items as the registered cost option. The ISO does not propose any changes to these cost items. Please see Section 6 for a summary of the major items that will remain the same under this proposal. Please see Section 5.4, which explains that the ISO will delay discussion of the proposed opportunity cost methodology.</p>		
Comment 2		
<p>It seems that the gas supply system is still highly flexible and the circumstances creating this volatility are rare. Are there times when intra-day gas prices decrease below day ahead gas prices under similar circumstances and gas generators are well compensated? Are there additional methods to hedge this type of risk?</p>		
ISO Response		
<p>The ISO appreciates your comments. We have asked stakeholders similar questions. Their responses are available on the ISO webpage for this initiative under “Comments on revised straw proposal.”</p>		
Comment 3		
<p>What other options have been considered to remove the intra-day gas volatility for generators, do some facilities have on site gas storage?</p>		
ISO Response		
<p>The ISO appreciates your comments. We have asked stakeholders similar questions. Their responses are available on the ISO webpage for this initiative under “Comments on revised straw proposal.”</p>		
Comment 4		
<p>FERC’s March 20, 2014 NOPR to address coordination and scheduling between the</p>		

natural gas and electricity industry may need to be decided before changing CAISO's tariff prematurely. The six month timeline set by FERC and CAISO's August 2014 due date for Stakeholder comments prior to seeking BOG approval are mismatched

ISO Response

As explained in Section 2 of the revised straw proposal, this initiative is in response to FERC's approval of the ISO's tariff waiver, which the FERC granted on March 21, 2014.

Comment 5

If applied, the proposed 125% limit for the Proxy Cost (PC) option should be monitored and only applied to fuel related costs.

ISO Response

The ISO appreciates your comments. Please see Section 5.1 for a discussion on what the increased cost cap may account for.

Comment 6

After-the-fact cost reimbursement should be avoided.

ISO Response

The ISO appreciates your comments. Please see Section 6 for a summary of the major items that will remain the same under this proposal.

Company	Date	Submitted By
California Public Utilities Commission	7/11/14	Ed Charkowicz, eac@cpuc.ca.gov, 415-703-2421 Christopher Clay, Christopher.clay@cpuc.ca.gov, 415-703-1123

Summary

The Independent System Operator's (ISO) revised straw proposal for commitment cost enhancements (CCE) is intended to improve the market commitment of resources by more accurately reflecting resource operational costs and allowing increased flexibility for daily changes in gas costs.

The revised proposal includes a manual gas price override when prices exceed a 150% day-over-day change, the elimination of the registered cost option¹, allowing resources to bid their commitment cost up to a 125% of their proxy cost on a daily basis to replace the registered cost option, and an opportunity cost adder for gas-fired resources with start and

run-time use limitations.

CPUC Staff appreciate the opportunity to provide comments to the CAISO on the Commitment Cost Enhancement (CCE) revised straw proposal. In general CPUC Staff agree with the CAISO proposal to more accurately approximate actual costs used to make generation unit commitment decisions.

Specifically, Staff supports the elimination of the registered cost option, and the manual work around for gas price spikes. Initially, staff believes that the CAISO's proposal should be limited to allow units to bid up to 125% of the GHG and fuel cost components of their commitment costs. This would allow for any volatility in fuel prices and more closely align resource operational costs with market commitment decisions.

At this time CPUC staff does not have an opinion on the method for determining the opportunity costs for Use Limited Resources (ULRs). Because of the complexity of this new part of the proposal it is not clear that incorporating an opportunity cost adder for gas fired ULRs will be fully vetted within the stakeholder process in time to be implemented for the 2014/2015 winter season it should be separated from this initiative.

¹ The registered cost option, the gas price is based on a monthly forward projection and the total registered cost is limited to no more than 150% of the projected proxy costs. Resources selecting the registered cost option must remain under that option for 30 days, unless the proxy costs are higher than registered.

ISO Response

[The ISO appreciates your comments. Please see our responses below.](#)

Background

In the winter of 2013/2014, California generators experienced significant day-over-day gas price fluctuations for a few days. Some resources committed in the prior day's market under a much lower price were not able to recover the higher gas prices that they paid in real time. Because of the sudden increase in gas prices, the ISO was not able to reflect the gas price spike in its resource commitment decisions.

To address the potential for additional natural gas price spikes for the duration of the winter season, on March 6, 2014 the ISO filed with the Federal Energy Regulatory Commission (FERC) a proposed tariff waiver of the above referenced two sections until

April 30, 2014. In the tariff waiver filing, the ISO also committed to commence a stakeholder process in April to address the issues raised by gas market conditions and to more comprehensively develop an interim solution that can be implemented in the fall if such solution does not require substantial system changes. FERC granted the ISO's tariff waiver on March 21, 2014.

The existing tariff calculates the start-up and minimum load costs for resources under either the "proxy cost" or "registered cost" option selected by the resource. For resources under the proxy cost option², the ISO is required to rely on at least two natural gas price indices published the day prior to running the day-ahead market. For the registered cost option, the gas price is based on a monthly forward projection and the total registered cost is limited to no more than 150% of the projected proxy costs. Resources selecting the registered cost option must remain under that option for 30 days, unless the proxy costs are higher than registered. Lastly, the ISO tariff specifies, that a registered cost option resource that switches to the proxy cost option must remain under the proxy cost option for the remainder of the 30-day period.

² Proxy Costs are made up of a generation unit's heat rate times the fuel index cost (e.g., average of two natural gas indices) plus GHG, major maintenance, and variable O&M cost adders.

ISO Response

[The ISO appreciates your comments. Please see our responses below.](#)

The CAISO should retain the manual process used to adjust significant day-over-day gas price volatility.

CPUC staff supports the CAISO proposal to retain the manual gas price adjustment to update gas price indexes used in the day-ahead market included in the tariff waiver approved by FERC. Per the proposal, the ISO will monitor the gas prices in the morning for any significant movements in the gas price indexes from the prior day. The current process uses the prior day's gas prices for that day-ahead market run where under the proposal a significant day-over-day change would allow the ISO to use a single index for that day-ahead market run

ISO Response

[The ISO appreciates your comments. The manual process is retained.](#)

Because of the complexity of the opportunity costs for gas-fired use-limited dispatchable resources staff suggests separating this feature from the CCE initiative.

The CPUC Staff agree that it would be appropriate to consider opportunity costs for Use-

Limited Resources (ULR) based on starts and run-hours limitations. It is important to reflect opportunity costs for many resources besides the gas-fired resources, which include resources with environmental or significant operational limits (e.g., demand response and storage). Even though the ISO seeks to just focus on the gas-fired ULRs with start, run and emissions limitations, it appears there are complexities within these run limitations that may require significant effort to define, and properly reflect the opportunity cost calculation within the tariff. It is important for the CAISO to demonstrate how the methodology proposed for calculating opportunity cost will work and incorporate stakeholder concerns that their resources will be either under or over stating the opportunity cost. Understating the opportunity costs increases the possibilities that resources will be committed too soon or often. On the other hand, overstating the opportunity costs could result in under-utilization of the resource. Because the ISO is trying to get this initiative ready for its Board of Governor's approval in September, CPUC staff suggests that the opportunity cost adder for gas-fired ULRs be dealt with separately or added to the bidding rules initiative coming in the fall of 2014.

ISO Response

[Please see Section 5.4, which explains that the ISO will delay discussion of the proposed opportunity cost methodology.](#)

Conclusion

CPUC staff supports the CAISO's proposal to eliminate the registered cost option. CPUC staff recommends allowing thermal fueled units to bid up to 125% of the GHG and fuel cost components of their commitment costs, because a premium on variable fuel related costs may be warranted to offset frequently fluctuating prices. The manual process for adjusting day-ahead gas prices for significant day over day gas price fluctuations should be retained in order to be able to more accurately reflect resource operational costs and allowing increased flexibility for daily changes in gas costs. Lastly, until the ISO can demonstrate that the opportunity cost adder and its related complexities can be accomplished by the September 2014 Board of Governor's meeting this aspect of the proposal should be separated from this initiative.

ISO Response

[The ISO appreciates your comments.](#)

Company	Date	Submitted By
CalPeak Power, LLC	7/1/14	
Opening Statement		
<p>CalPeak Power, LLC (“CalPeak”) appreciates this opportunity to provide comments on the CAISO’s <i>Commitment Cost Enhancements Revised Straw Proposal</i>, dated June 10, 2014. CalPeak’s subsidiaries, CalPeak Power – Border LLC, CalPeak Power – Enterprise LLC, CalPeak Power – Panoche LLC and CalPeak Power – Vaca Dixon LLC (CalPeak and its four subsidiaries are collectively referred to herein as the “CalPeak Companies”), operate four substantially identical peaker plants. Two of them, CalPeak Power Border Unit1 (“Border”) and CalPeak Power Enterprise Unit 1 (“Enterprise”), are located in SDG&E’s electric and gas service territories. The other two, CalPeak Power Panoche Unit 1 (“Panoche”) and CalPeak Power Vaca Dixon Unit 1 (“Vaca Dixon” and collectively with Border, Enterprise and Panoche, the “CalPeak Units”), are in PG&E’s electric and gas service territories. All four utilize Pratt & Whitney, Model FT8 (DLN), Twin-Pac gas turbine engines, in which each unit is comprised of two combustion turbines that, singly or together, turn a single generator. In a 2-in-1 configuration, i.e., with both CTs operating at each unit, the minimum generation (PMin) in this configuration for each power plant is 44 MW and the PMax values range between 48 and 52 MW, depending on the unit.</p> <p>The CalPeak Units have relatively high heat rates, in the range of 10,588-12,370, again depending on the unit. As a result they are seldom called upon to run by the CAISO. Because CalPeak only operates peakers, the natural gas used to run its power plants is generally purchased on the spot market.¹</p> <p>CalPeak has in the past attempted to have the units classified as “Use-Limited Resources.” The CAISO’s Use-Limited Resource Guidebook suggests that resources like the CalPeak power plants may be eligible since they have air permits which limit start time and run hours.² CalPeak has been informed by the CAISO, however, that none of the four units would be considered “Use-Limited Resources.”³</p>		
<p>¹ Unlike many other generators in California, CalPeak also has no affiliates that operate natural gas-fired power plants in California or purchase significant quantities of natural gas, so it is not in a position to share natural gas supplies with its affiliates.</p> <p>² Available at: http://www.caiso.com/Documents/Use-LimitedResourceGuideBook.pdf</p> <p>³ The CAISO has explained why its power plants do not qualify as Use-Limited Resources in emails. For example, e-mails from CAISO Hui Yuan, to Jeff Malone RE: Use Limited Status PNCHPP_1_PL1X2 dated Friday, March 05,</p>		

2010 and Thursday, March 11, 2010: "...The cutoff/limit used for ULR (Use Limited Resource) is not in the Tariff however it is a practice we use for ULR registration eligibility. The cutoff/limit of 25% of 8,760 (2,190 hours) is calculated as follows: for a unit that can run 8 hours a day and 5 days a week, its annual run hour equals 2,190 hours, which is 25% of 8,760 hours (a year). Any resource whose annual use limitation is less than this value may be qualified for ULR. For the ULRs approved by CAISO, their average annual run hour is less than this cutoff value..."

"...The cutoff annual run hour value for Use Limited Resources (ULRs) is 25% of 8760 hours or 2190 hours/year. For the ULRs approved by CAISO, their average annual run hour use limitation is 15.52% of 8760 hours or 1360 hours/year. Under specific circumstances there may be few exceptions to this criterion..." Although the CAISO at one time viewed Panoche and Vaca Dixon as use-limited resources, that is no longer the case.

ISO Response

The ISO appreciates your comments.

In footnote 3, CalPeak mentions that its resources were not considered use-limited at some prior time in the past. The ISO's current practice and definition of use-limited resources is found in Appendix A of the tariff and in the BPM for Reliability Requirements. The ISO review of use limitations has evolved since the inception of the concept of a use-limited resource and the ISO does not currently employ a "bright line" test. CalPeak may reapply and demonstrate to the ISO why its resources should be considered "use-limited."

General Comments

CalPeak believes that major changes must be made to the CAISO's proposal since it would not ensure that generators like the CalPeak Companies will receive adequate compensation for their costs in generating energy at their power plants. CalPeak's key objections to CAISO's proposal are:

- (1) The proxy price would still almost always be based on the natural gas price two days before the day of the actual burn, which is virtually always lower than the price purchased closer to time of actual use. Since the CalPeak Companies, and other generators like them, have limited hedging opportunities and must purchase on the spot market, their actual costs will almost always be more than the proxy cost.
- (2) A bid-adder for Use-Limited Resources does not solve the problem for generators like the CalPeak Companies. Even though all of the CalPeak Units have air permits with start-up and run-time restrictions, the CAISO has indicated that these units are not

considered use-limited resources because of the criteria it uses to define such resources.

(3) The use of an adder is merely a band aid -- a partial one at that -- which does not go to the heart of the problem. Rather than an adder for Use-Limited Resources, the CAISO should allow market participants to bid their units -- including at minimum load -- to account for the actual costs of their resources. This should be part of a broader approach that allows all market participants to bid across the full range of output, including minimum load, up to an appropriate bid cap, which should be higher than the proposed 125% of the proxy cost. This would allow generators like the CalPeak Companies, as well as Use-Limited Resources to account for such things as higher than average natural gas costs and opportunity costs.

(4) The CAISO's proposal for addressing spikes in natural gas prices does not provide adequate assurance that the CAISO will compensate the CalPeak Companies for their actual costs. CalPeak favors the addition of tariff provisions which make it clear that in the event of natural gas price volatility and abnormal market outcomes seen on February 6, 2014, generators will be compensated for the actual costs they incur, including all costs of responding to gas utility operational flow orders. Indeed, when there are gas utility operational flow orders or other system emergencies, the CalPeak Companies suggest that the CAISO implement tariff changes that would allow market participants to receive their actual costs.

ISO Response

[The ISO appreciates your comments. Please see our responses below.](#)

What were the intra-day gas prices and costs incurred by units that had a real-time-related commitment (e.g., real-time only commitment to minimum load or real-time exceptional dispatch) versus the gas price index? Note the ISO is seeking actual costs incurred versus simply the intra-day gas prices. We prefer the data to be provided for at least a year to analyze trends and overall impact to the resource.

CalPeak provided intra-day gas price and cost information to the CAISO on February 6, 2014, through the settlement dispute resolution process. See Case No. 00143490. CalPeak is willing to provide more cost information relating to the CalPeak Units upon execution of a non-disclosure agreement.

ISO Response

The ISO appreciates CalPeak’s offer and is in the process of executing a non-disclosure agreement.

How would the increased bid cap be considered with out-of-market intra-day gas cost recovery? For example, should the proxy cap be reduced to 100% for any resource that also receives this type of cost recovery? The ISO would also propose that the costs be considered in bid cost recovery.

The CalPeak Units have used the Registered Cost option, which the CAISO intends to abandon under its proposal. While CalPeak understands that the use of only the proxy cost methodology may make the settlement process easier, CalPeak believes that the way the CAISO proposes to calculate proxy costs will continue to put the CalPeak Units at material risk of under-recovery of costs, sometimes substantial under-recovery (as occurred on February 6, 2014). Particularly for periods of time where the CAISO market and/or the natural gas market are not functioning normally, CalPeak supports recovery of actual costs incurred for natural gas, including any out-of-market intra-day costs, rather than proxy costs. If actual costs are recovered for such periods of time, there will be no need to make adjustments to the proxy costs. There is no reason why such adjustments cannot be made after the fact when settling the markets.

ISO Response

As the ISO has mentioned, a practice of after the fact settlement does not in the first instance produce an efficient market dispatch. As CalPeak has noted, the events of February 6, 2014 were extraordinary. Would the ISO’s proposed manual process provide sufficient or significant relief to CalPeak during such events?

What happens when natural gas prices are lower in the intra-day than day-ahead?

Generators like the CalPeak Units will virtually never see a lower intra-day price than a day-ahead price. Since they purchase natural gas on the spot market when they are asked to run, they virtually always pay a premium for natural gas compared to the day-ahead price. Indeed, given their high heat rates, whenever system conditions warrant dispatch of the CalPeak Units, there will be upward pressure on natural gas prices because all the units with lower heat rates have already been dispatched. Nonetheless, if there is a concern that the proxy price should reflect decreases in overall natural gas prices, for the day ahead market it should be possible to set both an upward and downward tolerance band for when changes to the natural gas prices

require re-submission of bids. So, while the current version of the CAISO's proposal would require resubmission of bids in the day-ahead market if there is a significant natural gas price *increase*, the CAISO could also propose that bids will be resubmitted if there is a significant price *decrease*

Another way to address this issue is to provide greater flexibility for generators to adjust bids. Generation resources should be able to adjust their bids between the Day Ahead, Fifteen Minute, and Real Time Markets to more accurately reflect their anticipated cost of production (day-ahead verses intra-day and day-after gas purchases) as well as their opportunity costs. This is especially the case for low capacity factor resources such as peakers like the CalPeak Units, that typically operate (whether by virtue of their location and/or heat rate) significantly less than less than 25% of the time.

ISO Response

Scheduling coordinators can reduce their proxy commitment cost bids in the event of a gas price decrease so an additional manual process is not needed.

We understand that CalPeak has a concern about only receiving real-time awards but we look forward to receiving additional data to comment on intra-day gas costs. Greater bidding flexibility to allow for different start-up and minimum load bids and the corresponding market rules and system changes will not be possible by this winter given the implementation impacts.

Who would be responsible for validating out-of-market intra-day gas costs? Aside from real-time-related commitments, when else would recovery of out-of-market intra-day gas costs be allowed or under what specific conditions?

The CAISO should be responsible for validating out-of-market intra-day gas cost, but it may need to work with the natural gas marketers and suppliers as well as utilities to validate some costs. It is very often the case that gas is not able to be purchased even intra-day (especially in the San Diego area since there is no access to storage). Historically, the CalPeak Units have been dispatched by CAISO late in the afternoon or evening, well after the last cycle for scheduling flowing gas has closed. Even if some marketer was willing to sell spot gas, there is no way to schedule it until a subsequent day. In some cases, the balancing rules offer flexibility to buy "makeup gas" on subsequent days although during the winter months, this flexibility is limited.

As noted above, peakers already face higher gas prices because they only run when all the other more efficient gas-fired units are also running and procuring additional gas. This also places peakers with must-offer obligations at extreme risk for balancing charges by the local gas utility. For example, SDG&E has Winter Delivery Requirements in its Gas Rules that require customers to deliver a certain percentage of their burn within a specified period depending on the amount of gas in SoCal Gas' total storage inventory. Beginning November 1st, customers are required to deliver a minimum of 50% of their burn, over a 5-day period. As SoCal Gas' total storage inventory declines, the delivery requirements may increase to 70% of burn on a daily basis (i.e., 70% daily balancing regime) and then 90% of burn on a daily basis (i.e., 90% daily balancing regime), depending on how low the inventory becomes. Customers who deliver volumes less than the minimum delivery requirements will be charged for purchasing the amount "under-delivered" at the Daily Balancing Standby Rate (see Utilities Gas Rule No. 30 and Schedule No. G-IMB).

Aside from real-time related commitments, the CAISO should pay the actual costs of natural gas supply, including any out-of-market intraday costs and any other costs attributable to securing natural gas supplies. For instance, for units that have been called upon to run, the costs should include all costs attributable to receiving countervailing instructions from the CAISO to cease generating to preserve natural gas supplies in the area, such as costs attributable to balancing requirements and mandatory "buy-back" at rates below the purchase price.

ISO Response

The ISO looks forward to receiving information from CalPeak under a non-disclosure agreement. The ISO will be releasing its proposed tariff revisions to address resources' ability to recover certain operational flow order (OFO) penalties, as approved by the ISO Board. The ISO clarifies it will do so as part of an OFO policy tariff development that we plan to be concurrent with the policy development portion of this stakeholder initiative, likely beginning late July or August.

Beyond the narrow scope of OFO issue mentioned above, the ISO notes that there is a broader policy question embedded in CalPeak's comments and that is whether a penalty designed to increase the reliability of the natural gas system should be reimbursed in the electricity market,

which may undermine the use of these penalties. This is an important issue for both industries and may be better addressed within the context of the FERC's NOPR for electric and gas industry coordination. As such, the ISO will not be able to sufficiently address this issue in this interim stakeholder initiative but can consider it in the longer-term bidding rules initiative.

Would recovery of out-of-market intra-day gas costs discourage hedging (either financial or physical)?

Hedging is not feasible for resources such as the CalPeak Units since the units run very infrequently, and it is not possible to accurately predict when the units will be called upon to run. Moreover, physical hedging is precluded by natural gas pipeline company balancing requirements.

ISO Response

Would the following interpretation be correct: CalPeak believes hedging is not feasible for its resources because it would not be economic to do so?

Can CalPeak explain why physical hedging is "precluded" by natural gas pipeline balancing requirements? What mechanisms, if any, can CalPeak use to hedge (either financially or physically) the cost of buying gas in the intra-day market when the generator is not scheduled to operate day-ahead? For each hedging mechanisms identified, please explain how CalPeak would be able to recover the cost of the hedge.

Would the overall FERC effort to align the electric and natural gas days help to alleviate the stakeholder concerns about intra-day gas price volatility and illiquidity?

It appears likely that FERC's efforts to align the electric and natural gas days has the potential to help, but it is far too early to know what the new requirements will be. The natural gas supply situation, particularly in the San Diego area, is already tenuous in light of increased demand for natural gas attributable to the shut-down of SONGS. The CalPeak Companies, and other similar San Diego generators, need for the CAISO to put in place as soon as possible, but no later than November 1, tariff language that adequately protects them from losses resulting from inaccurate price proxies adopted by CAISO in the face of wild gas market swings.

ISO Response

The ISO endeavors to implement the changes provided in this interim stakeholder process as

soon as practical for winter 2014.

Company	Date	Submitted By
Calpine	7/1/2014	
Opening Statement		
<p>Calpine continues to support the proposal. In particular, Calpine supports the main change in this version of the proposal, i.e., the potential inclusion of CAISO-calculated opportunity costs in commitment costs. Calpine supports this new element of the proposal as long as it raises the <i>cap</i> on start cost bids but does not <i>obligate</i> suppliers to reflect CAISO-calculated opportunity costs in bid in start costs. It is important to Calpine to retain the flexibility to offer our resources at levels that reflect our own view of their economics.</p> <p>In addition, Calpine continues to support increased flexibility to change commitment costs in real-time to reflect intra-day gas costs. Calpine understands that the CAISO continues to explore this issue.</p> <p>Beyond Calpine's general support for the proposal, Calpine offers the following comments:</p>		
ISO Response		
<p>The ISO appreciates your comments. Please see our responses below.</p>		
Comment		
<p>With respect to the manual process for using the ICE index in proxy cost calculations, could the CAISO clarify that, when the manual process is triggered, the cap on commitment cost bids will be 125% of the proxy costs calculated using the ICE index. The discussion in the proposal of the allowed 125% mark-up over proxy costs under normal circumstances and the 125% gas price premium at which the manual process would be triggered leaves some ambiguity about whether a mark-up above the proxy costs calculated with ICE prices would be allowed.</p> <p>Similarly, with respect to the inclusion of CAISO-calculated opportunity costs in proxy costs, would they be treated identically to other elements of proxy costs, i.e., would they be grossed up by 125% in determining bid caps?</p>		

In addition, it would be helpful if the CAISO could explain further the 10% adder that it is proposing to use to calculate the real-time prices that would constitute the basis for its proposed opportunity cost calculation.

ISO Response

The ISO clarifies that the cap on commitment cost bids will be 125% of the proxy costs calculated using the ICE index.

Please see Section 5.4, which explains that the ISO will delay discussion of the proposed opportunity cost methodology.

Comment

Finally, in addition to the types of explicit and opportunity costs addressed in the proposal, Calpine requests the consideration of another type of cost for inclusion in commitment costs, i.e., lumpy transmission costs. Certain dynamically scheduled resources may be subject to non-CAISO transmission tariffs. These non-CAISO tariffs typically involve lumpy charges related to whether or not a resource operates at all in a specific calendar month. Calpine would like to be able to include such lumpy costs in the start cost for a resource until the resource is committed and/or dispatched for the first time in a month.

ISO Response

The ISO will not be able to address this specific issue in this stakeholder process. However, we would like further clarification on whether or not this is a contract-based cost.

Company	Date	Submitted By
Department of Market Monitoring	7/8/2014	
Opening Comments		
<p>The Department of Market Monitoring (DMM) appreciates this opportunity to comment on the ISO’s revised straw proposal on commitment cost enhancements. DMM is very supportive of developing the opportunity cost adder for dispatchable use-limited natural gas resources. We believe that developing an opportunity cost calculation model is a significant undertaking and</p>		

that the ISO, with input from market participants, should use the additional time that currently exists to resolve implementation issues and to develop and deploy an opportunity cost calculation model before any must offer obligations begin.

DMM is supportive of the ISO's general approach to calculating opportunity costs, as noted in comments submitted during the flexible resource adequacy criteria and must offer obligation (FRAC-MOO) stakeholder process.¹ DMM supports the ISO's efforts to move from the existing prototype to a platform that will allow the ISO to include features listed in DMM's recommendations below.

ISO Response

The ISO appreciates your comments. Please see our responses below.

Background

The ISO proposed the opportunity cost adder as part of the FRAC-MOO process to allow use-limited resources to bid flexible capacity into the ISO markets. The opportunity cost adder offers an economic approach for use-limited resources to manage their limitation by including opportunity costs in commitment decisions, while still allowing the system to have the value of their bid should market conditions generate prices high enough to warrant the dispatch of the resource.

Currently, market participants submit use-limited resource plans that outline how the resource will be bid into the ISO markets. In many instances, participants submit plans that identify the hours that the resource will and will not participate in the market (e.g., peak vs. off-peak, etc...)² These plans have been effective in keeping resources from exceeding their limitations, but are not an economically efficient method to managing use limitations. In many instances, flexible capacity can be unavailable to the market at times when it would be most beneficial to have it available.

¹ For further discussion, see <http://www.caiso.com/Documents/DMMComments-FlexibleResourceAdequacyCriteriaMustOfferObligation-SecondRevisedStrawProposal.pdf>, <http://www.caiso.com/Documents/DMM-Comments-FlexibleResourceAdequacyCriteriaMustOfferObligation-ThirdRevisedStrawProposal.pdf>, and <http://www.caiso.com/Documents/DMMComments-FlexibleResourceAdequacyCriteriaMustOfferObligation-FourthRevisedStrawProposal.pdf>.

² Use-limited resource adequacy capacity is not required to supply bids in the ISO markets for every hour, but outline their use in their use plans.

The ISO proposal, described below, attempts to address the economic efficiency issue, while accounting for the use limitation, through the development of a calculated opportunity cost bid adder.

ISO Response

Please see Section 5.4, which explains that the ISO will delay discussion of the proposed opportunity cost methodology.

ISO proposal

The ISO proposes calculating opportunity costs as the difference in profits that occur as a result of incrementally restricting a resource through either a start or run hour limitation. For example, if a resource is limited to 10 starts, the ISO proposes calculating the opportunity cost as the difference in projected profits between operating the resource with a limit of 9 and 10 starts. In this example, the cost is then added to the start-up cost. If a resource is run hour limited, then the opportunity cost is added to the minimum load costs.

The ISO's approach is designed to calculate opportunity costs for both monthly and annual start-up and run time limitations based on physical and regulatory (often environmental) limitations. DMM understands that there are some limitations that are very complex in nature and are too complicated to be modeled using the current approach. For instance, limitations such as Delta Dispatch are not considered as part of the ISO's current proposal. Limitations that are economic or contract based are not considered as part of the ISO's current proposal. DMM agrees with the ISO that it is inappropriate to calculate opportunity costs on the basis of these limitations. Economic or contract based limitations, such as limits included in power purchase agreements (PPAs), should be addressed by the parties themselves and are not physical or regulatory limitations on resource performance.

The ISO has indicated that to start, the ISO will exclude multi-stage generating units from opportunity costs adders due to the complexity of modeling the optimal dispatch of these resources. DMM suggests that these complexity issues are software related and can be overcome. We suggest that the ISO address this limitation and extend the calculations to include these resources as soon as practicable.

ISO Response

Please see Section 5.4, which explains that the ISO will delay discussion of the proposed opportunity cost methodology.

Recommendations

DMM offers the following recommendations to improve upon the ISO's current proposed approach.

As described above, the current proposal will calculate opportunity costs on the basis of monthly or annual physical and regulatory limits on starts or run hours. DMM recommends that the ISO clearly define the requirements for use plan submission for opportunity cost calculation. The existing use plan submission process requires annual limits to be submitted as monthly increments. DMM recommends that resources with annual limits be required to submit data describing that annual limit. DMM also supports applying the existing evidentiary requirements tied to use plans submitted for use-limited resource adequacy resources to resources submitting use plans for opportunity cost adders. The ISO should also consider allowing a use plan submitted as part of the resource adequacy use plan process to satisfy the opportunity cost use plan requirement. This would reduce administrative burden on scheduling coordinators and the ISO.

The opportunity cost model developed by the ISO should be based on the expected future real-time prices of electricity, as well as the expected future prices of inputs including natural gas and greenhouse gas allowances. This calculation is an estimate of the true opportunity cost and will likely result in some form of error. Per the ISO's proposal, scheduling coordinators will have the flexibility to bid in between 0 and 125 percent of the ISO's calculated proxy cost and that the opportunity cost adder will be added on top of that calculation. DMM suggests including the opportunity cost adder along with the proxy cost. This will allow participants flexibility to adjust their commitment costs up or down should the calculated opportunity cost adder be either too low or too high. The 125 percent cap would limit the ability of market participants to exercise market power with their opportunity cost adder.

The ISO's proposal includes a proposal to add flexibility by calculating the opportunity cost as the average of multiple runs with progressively tighter limits. This is effectively a sensitivity on the constraint itself, one of the few modeling inputs that is known with certainty. DMM recommends that the ISO drop this sensitivity and instead perform sensitivities on other model inputs during the stake-holder process. These sensitivities may serve as the basis for

determining the appropriate range for opportunity cost bids.

Furthermore, DMM recommends adopting an additional approach to provide for more flexibility to address unique circumstances that may not be covered by the opportunity cost adder or the adjustment of proxy costs. Specifically, we recommend adopting an option much like the negotiated default energy bid approach for calculating the opportunity costs of some units. We recognize that not all situations can be modeled, and that there may be instances where having the flexibility to make additional negotiated adjustments would be prudent. However, this more flexible approach should only be relied upon as a supplement (rather than substitute) for the type of more automated standardized modeling approach that has been discussed as part of this stakeholder process. For instance, in some cases the type of sensitivity analysis described above might be utilized as part of the process of establishing an opportunity cost based bid under this negotiated approach. As part of the FRAC-MOO process, DMM identified additional methodology enhancements that may be important to incorporate into the approach. For instance, to the extent that 15-minute market prices underestimate revenues (which could include bid cost recovery payments), it is important to have a methodology flexible enough to incorporate systematic differences. DMM suggests that the ISO further develop its modeling to be able to test annual, in addition, to monthly use limitations; extend the model to how calculations would have worked during the 2014 winter conditions; and further refine the model to address DMM's concerns previously identified during the FRAC-MOO process.

ISO Response

[Please see Section 5.4, which explains that the ISO will delay discussion of the proposed opportunity cost methodology.](#)

Conclusion

DMM supports the ISO's proposal to develop an opportunity costs adder for use-limited gas units. We believe that further refining the opportunity cost methodology sooner rather than later will ensure that the ISO has time to begin the process to further test and refine the calculations prior to implementation of any mandatory must offer obligation.

However, we caution that substantial further work is needed to bridge the gap between the simple monthly spreadsheet model the ISO has currently developed and the type of full scale

model that could incorporate both annual and monthly limits simultaneously needed to actually determine the details of this initiative and then implement any resulting proposal. To date, progress on bridging this gap does not appear to have been made and there does not appear to be an ongoing effort or resources being dedicated to completing this project.

Therefore, DMM’s main concern about this part of the initiative at this time is if the necessary details and analysis can actually be developed on the timeline envisioned for the overall commitment cost initiative. However, DMM recommends that rather than stopping work on this aspect of the initiative, the ISO continue to work on the opportunity cost model so that this component can be implemented as soon as practicable, instead of being delayed further as it has been after being de-scoped from several previous initiatives. We see this as an active initiative that should continue forward regardless of the status of the rest of this initiative. Furthermore, rather than deferring it to another initiative, the development of an opportunity cost adder should continue to develop and progress as a separate project so that it may be addressed in another part of the stakeholder process.

ISO Response

Please see Section 5.4, which explains that the ISO will delay discussion of the proposed opportunity cost methodology.

Company	Date	Submitted By
Northern California Power Agency	7/1/2014	
Increase in the proxy cost option cap		
<p>NCPA believes it is important to retain market participants’ ability to bid below the calculated proxy cost value particularly in light of the increased proxy cost cap. NCPA supports this element of the CAISO’s proposal. Further, NCPA supports the proposed increase in the proxy cost option cap from 100% to 125%. NCPA believes that CAISO’s proposal is a good interim solution in conjunction with a modified version of the tariff waiver enabling the CAISO to use the current trade-date’s ICE price for natural gas when the trade-day’s index is over 125% of the lagged composite index. NCPA supports the change from the 150% threshold to the 125% threshold.</p>		

NCPA requests clarification with regard to the regional triggering 125% threshold for the tariff waiver enabling the CAISO to use the contemporaneous day's ICE index for the day-ahead market optimization. NCPA would appreciate confirmation that either (1) all market participants would be able to re-bid, but that the only participants bidding at pricing nodes within the triggering natural gas region(s) would have a different proxy cost cap; or (2) only participants bidding at pricing nodes within the triggering natural gas region(s) would be able to re-bid.

ISO Response

The ISO appreciates your comments. On the day of a gas price spike event, any one gas region can trigger the manual process but as a result, all regions' gas prices will be updated. It may be the case that after an update a certain region's gas price does not change significantly but the intent is to refresh the as much of the day-ahead data as possible with the most recent gas price index.

Periodic review of the proxy cost cap

Many changes are occurring and are anticipated in the natural gas and electricity markets. Among these are the FERC NOPR regarding the alignment of the electricity and natural gas markets, and the need for flexible gas-fired generation to help integrate intermittent resources. As such, NCPA appreciates that the CAISO has included in its potential "topics for the bidding rules initiative" the creation of a process through which the CAISO would periodically review the cost cap to ensure that it still enables headroom for market participants to accurately reflect their natural gas costs.

ISO Response

The ISO appreciates your comments.

Elimination of the registered cost option

In principle, NCPA supports the CAISO's proposal to eliminate the registered cost option and to instead incorporate opportunity costs into the proxy cost calculations of commitment costs. However, if the implementation of the opportunity costs element of the proposal is delayed or removed altogether from the proposal, the elimination of the registered cost option will differentially impact a subset of generation resources. This runs counter to the clear intent of the instant proposal to include opportunity costs for use-limited generators, and NCPA believes that as such the CAISO should carefully examine the impacts to use-limited resources if the registered cost option is eliminated and the opportunity cost element of the proposal is delayed

or removed entirely.

ISO Response

Please see Section 5.4, which explains that the ISO will delay discussion of the proposed opportunity cost methodology and discussion on how this related to use-limited resources.

Changes to the day-ahead market run under tariff waiver

In the helpful outline of the provided in Section 5.3, there is a note in 2.c.iii that the CAISO would “notify participants that the day-ahead market is open for (re)bidding and new time for close of the day-ahead market.” NCPA requests clarification of the means of communication and on the duration of the delay during which market participants would be able to reformulate and resubmit their day-ahead market bids. In addition, NCPA requests that the CAISO clarify that market participants may submit new day-ahead bids, but are not required to do so, and that if they do not submit new bids then the originally submitted bids will carry through

ISO Response

These are implementation details and will be provided in the appropriate BPM(s) as was the case when the FERC tariff waiver was in effect. Broadly, the ISO will inform the market participants of the manual process being triggered and will provide the revised gas prices indices per ISO region to be used, the approximate time window for which the day-ahead market will remain open to allow participants to resubmit bids, and as practical as possible an estimate of the new target time for publication of the day ahead results.

If the scheduling coordinator does not submit commitment cost bids (but has submitted energy bids, for example), then SIBR will generate these costs for the resource. This is also true on the day of a gas price spike and the gas price index is updated. If the scheduling coordinator submits commitment cost bids before a manual process is triggered but not again after, then SIBR will continue to use the commitment cost bids submitted in the earlier time frame.

Opportunity Costs

As a general comment, NCPA supports the CAISO’s proposal to incorporate opportunity costs for use-limited resources into proxy commitment costs, though as noted below NCPA has concerns about the complexity of the proposed methodology. That point made, this initiative to enhance the proxy cost calculations is an ideal situation in which to prove out the opportunity costs calculation methodology ultimately approved. As the CAISO notes on page 15 of the Revised Straw Proposal, implementation of opportunity costs as part of Commitment Costs Enhancements will enable fine-tuning prior to implementation of must-offer obligations for use-

limited resources as part of the Reliability Services Initiative.

ISO Response

Please see Section 5.4, which explains that the ISO will delay discussion of the proposed opportunity cost methodology.

Shadow settlement

NCPA has significant concerns about the feasibility of “shadow settling” the opportunity costs model as proposed. The underlying concept is described in the MSC presentation and the “sandbox” application of the methodology is well laid out the paper. It is inevitable, however, that implementation will compound complexity and create additional uncertainty and difficulty in predicting and validating CAISO market outcomes. As such, NCPA urges the CAISO to consider a less theoretically pleasing methodology in favor of a more transparent and tractable methodology. Opportunity cost approximations such as price duration curves that are being used in other aspects of the CAISO market have already been time-tested and are far more transparent to market participants than the elaborate methodology proposed here.

ISO Response

Please see Section 5.4, which explains that the ISO will delay discussion of the proposed opportunity cost methodology.

Year-over-year real-time price volatility

NCPA urges the CAISO to be cautious with the assertion made on page 17 of the Revised Straw Proposal that the proposed methodology “will allow the implied heat rate to inherently capture real-time price volatility...” At the two use-limited resources NCPA surveyed for the years of available LMPs, there has been significant price volatility as well as significant changes in that price volatility from year to year. NCPA appreciates the 10% adder which is partially incorporated in recognition of this potential forecast error and encourages the CAISO to vigilantly monitor the forecast accuracy if this methodology is ultimately implemented.

ISO Response

The ISO appreciates your comments.

Company	Date	Submitted By
NRG Energy, INC (“NRG”)	7/1/2014	Brian Theaker
Opening Statement		
In the June 10, 2014 Revised Straw Proposal (“RSP”) the CAISO:		

- Clarified that it will implement the manual process to default to the single ICE index and hold the DA market open to allow this index to be included when gas prices increase by 25% or more from day to day;
- Proposed to include an opportunity cost adder to help ration the use of use-limited resources;
- Modified the schedule for the stakeholder process to allow for additional discussion, primarily on the opportunity cost adder. The additional process makes December 1, 2014 the earliest date the CAISO can implement any changes for the upcoming winter gas season; and
- Deferred consideration of intra-day gas costs and breaking up the three-day weekend gas package into smaller Friday-Saturday and Sunday-Monday package to the bidding rules stakeholder process, slated to begin in Q3 2014. To NRG, this deferral effectively means that the CAISO expects it cannot implement any changes with regards to recovery of intra-day gas costs prior to the coming winter gas season.

ISO Response

[Please see our responses below.](#)

Summary

NRG offers these comments on the RSP:

- The CAISO should defer consideration of the opportunity cost adder to the bidding rules stakeholder process and implement the proposed changes to commitment cost bidding rules no later than November 1, 2014. Because of the potential for early winter season weather events to disrupt gas supplies (as they did in early December 2013 and February 2014) in November, and the additional complications posed by scheduling gas over the five day Thanksgiving weekend, the CAISO should not wait until December 1, 2014 to modify its commitment cost rules.
- Deferring any consideration of intra-day gas cost recovery to the bidding rules process implies that the CAISO will take no actions to reduce suppliers' exposure to these intra-

day gas costs prior to the coming winter gas season. While NRG supports the CAISO's proposal to allow for daily bidding for start-up and minimum load costs up to 125% of proxy cost, NRG remains greatly concerned about exposing suppliers to intra-day gas costs, in particular during cold-weather shortage events, with no opportunity to recover those costs. NRG urges the CAISO to provide some means for suppliers to recover intra-day gas costs for the upcoming winter gas season.

- NRG urges the CAISO to address market participants' ability to seek recovery of costs incurred during Operational Flow Order ("OFO") conditions or pipeline declared emergencies as part of this commitment cost stakeholder process rather than waiting until the CAISO begins to develop tariff language for the commitment cost initiative to address this issue.
- The implementation of mandatory MSG registration increases the need for the CAISO to modify its commitment cost bidding rules as soon as possible, as it introduces additional minimum load points into a unit's operating characteristics. Being able to bid up to 125% of a unit's proxy cost on a daily basis would help manage the risks around these additional minimum load points.

NRG will elaborate some of these points below.

- **Deferring consideration of the opportunity cost adder.** While NRG supports consideration of an opportunity cost adder to help ensure that use-limited resources are not "used up" prematurely, NRG does not support adding an additional process to consider implementing this opportunity cost adder prior to the winter gas season to the commitment cost stakeholder process, for these reasons:
 - NRG is greatly concerned that the additional stakeholder discussion needed around the proposed process for determining opportunity cost adders will prevent the CAISO from implementing the commitment cost revisions comfortably ahead of the winter gas season (i.e., no later than November 1).

- The analysis needed to determine opportunity cost adders is complex and data-intensive. Given that the CAISO proposes to conduct this analysis itself, the CAISO also needs to ensure there is adequate opportunity for market participants to review and, if necessary, seek amendment of the proposed opportunity cost adders, prior to those adders being put into service.
- Not all use-limited resources lend themselves to being handled through a simple opportunity cost adder. The use of NRG's Pittsburg Generating Station is limited by Delta dispatch regulations. This use limit, however, cannot be easily translated into a simple MWH, hour or start-up cost adder. While the exceptions always take as much or more time to consider than those resources that fit within the proposed rule, this complication will add to the time needed to translate use-limit plans into actionable adders and further threatens to delay implementation of the opportunity cost adders.

NRG also provides responses to the questions regarding intra-day procurement of gas presented on page 27 of the RSP.

ISO Response

The ISO appreciates your comments. Please see Section 5.4, which explains that the ISO will delay discussion of the proposed opportunity cost methodology and discussion on how this related to use-limited resources.

Please see Section 6.1, which discusses the feedback received from stakeholders on the questions from this section.

Regarding the timing of the ISO releasing its proposed tariff revisions to address resources' ability to recover OFO penalties, the ISO clarifies it will do so as part of an OFO policy tariff development that we plan to be concurrent with the policy development portion of this stakeholder initiative, likely beginning late July or August.

What were the intra-day gas prices and costs incurred by units that had a real-time-related commitment (e.g., real-time only commitment to minimum load or real-time exceptional dispatch) versus the gas price index?

Q. What were the intra-day gas prices and costs incurred by units that had a real-time-related commitment (e.g., real-time only commitment to minimum load or real-time exceptional dispatch) versus the gas price index? Note the ISO is seeking actual costs incurred versus simply the intra-day gas prices. We prefer the data to be provided for at least a year to analyze trends and overall impact to the resource.

A. NRG has not yet pulled together the kind of analysis the CAISO is seeking. NRG is examining what information it may be able to provide at a later date.

Market participants do not know their CAISO DA awards by the time the timely nomination process closes. Depending on their fleet, and the reasons why their units are operating (e.g., in merit order for economics or out of merit order for local area reliability), some market participants may be better able to reasonably project their gas burns and procure gas in the timely nomination cycle, while others may not. In either case, market participants bid their units into the CAISO's DA market based on their expectation of CAISO dispatch and their expectations of where and how they will acquire gas to support that dispatch.

Under un-stressed gas supply conditions (e.g., where there are no supply restrictions early in a balancing period), there may be opportunities for market participants to recover the costs of gas that was not procured in the timely nomination cycle. However, there is no guarantee that gas prices will decline to the level seen in any particular timely nomination cycle over the course of the remainder of a balancing period. So while there are better opportunities to recover intra-day procurement costs over a longer balancing period, there is no guarantee that intra-day costs can be recovered over the course of a balancing period.

However, under stressed conditions (e.g., daily balancing or operational flow order conditions) there may be no additional opportunities to procure gas at timely nomination cycle prices to support burns that could not have been reasonably anticipated in order to

transact that gas in the timely cycle. Under highly stressed conditions, it may be difficult or impossible to procure gas outside of the timely nomination cycle.

Furthermore, over the course of a balancing period, it can be very difficult to re-create all of the transactions that were necessitated by an unexpected burn – or an unexpected failure to burn - on a given day. Such events create imbalances that a market participant may have to work over days or even weeks to re-balance in an economic way.

However, as noted above, it is unreasonable to think that market participants will always have opportunities to recover balancing costs, especially under daily balancing conditions. To that end, NRG believes the CAISO should provide some opportunity to invoice the CAISO for balancing costs incurred, typically under stressed conditions. The December 2013 and February 2014 events clearly demonstrated that a system that allows suppliers to recover their gas costs under “most” but not “all” conditions is not reasonable when suppliers incur huge costs to follow CAISO dispatch and curtailment instructions under stressed conditions.

ISO Response

The ISO appreciates these comments and would be open to any additional data NRG would like to provide. The ISO is open to signing a non-disclosure agreement with NRG to protect confidential information.

The ISO would like to understand how the proposed increase in the proxy cost option cap would or would not cover intra-day gas costs, which NRG notes may be higher than the gas price index from the previous night.

NRG brings up a very interesting point about stressed conditions with regard to balancing or operational flow order conditions. As NRG recognizes, the ISO has already received Board approval to allow recovery of certain operational flow order charges during defined conditions. However, there is a broader policy question embedded here and that is whether a penalty designed to increase the reliability of the natural gas system should be reimbursed in the electricity market, which may undermine the use of these penalties. This is an important issue

for both industries and may be better addressed within the context of the FERC's NOPR for electric and gas industry coordination. As such, the ISO will not be able to sufficiently address this issue in this interim stakeholder initiative but can consider it in the longer-term bidding rules initiative.

How would the increased bid cap be considered with out-of-market intra-day gas cost recovery?

Q. How would the increased bid cap be considered with out-of-market intra-day gas cost recovery? For example, should the proxy cap be reduced to 100% for any resource that also receives this type of cost recovery? The ISO would also propose that the costs be considered in bid cost recovery.

*A. NRG would not object to intra-day gas cost recovery being included in bid cost recovery. NRG also does not envision seeking recovery of **all** intra-day gas costs incurred under all circumstances. Where intra-day gas costs are not widely different from the gas price used in the proxy cost calculation, NRG expects to be able to manage its intra-day risk through its bids, where possible. The situation in which NRG would seek to recover intra-day costs through some extraordinary mechanism is the one in which the intra-day gas costs are much higher than the daily gas prices indices and NRG has been forced to procure gas in those intra-day markets (likely because it had no way to reasonably predict its burn prior to the timely nomination cycle).*

ISO Response

The ISO appreciates these comments. What are NRG's criteria of including or excluding intra-day gas costs? Would this be differentiated between gas (commodity) versus penalty costs, or a percentage increase over the proposed 125% proxy cap? (Note, the proposed 125% cap is on all costs, not just gas so the actual intra-day gas price increase may be more than 125% from the gas price index but still fall within the calculated proxy cap.) To incorporate these changes, the ISO would need to develop rules for reimbursement, have a settlements process and mechanism that also flows through to bid cost recovery, and be able to validate submitted costs. Does NRG have a sense of the frequency for which the "extraordinary mechanism" would be used based on past experience? Would they be limited to gas price spike events such as occurred on February 6th? If so, would the manual process for updating the gas price index not be sufficient?

What happens when natural gas prices are lower in the intra-day than day-ahead?

Q. What happens when natural gas prices are lower in the intra-day than day-ahead?

A. *This question dismisses the potentially catastrophic problem associated with having to procure gas to support unexpected burns in the intra-day markets. If a supplier can accurately predict its gas burn and can reliably procure gas in either the timely nomination cycle or the intra-day markets because of relaxed balancing conditions, and it chooses to defer its procurement of gas to the intra-day markets, it stands to make additional profit. It stands to make additional procurement because it has assessed and voluntarily assumed the risks of deferring gas procurement to the intra-day market. Given that the intra-day markets are less liquid, however, NRG does not expect that suppliers would make a habit of deferring procurement to the intra-day gas markets, though it is theoretically possible that suppliers could do so, if they reasonably believed the price of gas in the intra-day markets would be lower there than in the timely nomination cycle. NRG notes that, unless that particular supplier that deferred their gas procurement to the intra-day market is marginal, there is no additional cost to load from the supplier deferring his gas procurement to the intra-day market. In that case, the supplier has voluntarily assumed a risk to try to earn a reward.*

But if the supplier is forced to the intra-day markets by CAISO market awards or dispatch instructions, or forced to wait until pipeline restrictions (e.g., OFOs) are lifted and gas can be procured in subsequent next day markets, because it cannot predict its gas burn and secure that gas in the timely nomination cycle, the supplier is almost certainly exposed to gas costs it cannot recover. As evidenced by this past winter, rules that provide gas cost recovery under "most" conditions still leave suppliers exposed to catastrophic losses under unusual conditions – losses that cannot be presumed to simply be made up over time.

The RSP includes this at pages 27-28: "At this point, we have some evidence that intra-day costs can be higher than during the timely and evening nomination cycles but we do not know the extent to which this impacts stakeholders over time."

As Keynes noted: in the long run, we are all dead. Averages ("over time") can be deceiving. The average current a single lightning strike delivers over the course of a year is not fatal. However, a single lightning strike is instantly fatal at that moment, if you

happen to be the unlucky target. In the same way, the CAISO should not assume that market participants need only an opportunity to recover gas costs over an undefined but extended period of time. To ensure a reliable supply system, the CAISO must provide market participants with an opportunity to recover extraordinary costs from a single catastrophic event, such as the two gas supply events experienced in the 2013-2014 winter gas season.

ISO Response

The ISO appreciates NRG's explanation but we would like to focus on NRG's point regarding certain "losses that cannot be presumed to simply be made up over time." This relates back to ISO's request for data to show over a period of time (preferably one year) the impact of these extraordinary events. For example, one major event may be so detrimental that it impacts profitability for the year. These historical incidences also need to be considered in light of the proposed manual process to update the gas price index on the day of a gas price spike event, which can provide considerable relief.

Who would be responsible for validating out-of-market intra-day gas costs?

Q. Who would be responsible for validating out-of-market intra-day gas costs? Aside from real-time-related commitments, when else would recovery of out-of-market intra-day gas costs be allowed or under what specific conditions?

A. The CAISO would ultimately be responsible for validating out-of-market intra-day gas costs. To facilitate this review, perhaps the CAISO could require suppliers to submit the information in a specified format and provide back-up information that identifies and explains the nature of the intra-day gas costs.

ISO Response

The ISO appreciates NRG's comments and we agree that the responsibility will be CAISO's. We would need to work closely with supplies to better understand information submitted as well as provide a clear format and process. Additionally, we will need to clarify the policy on commodity versus penalty costs.

Would recovery of out-of-market intra-day gas costs discourage hedging (either financial or physical)?

Q. Would recovery of out-of-market intra-day gas costs discourage hedging (either financial or physical)?

A. Market participants are not likely to be in the intra-day market except to the extent that they cannot predict their gas burn. The CAISO's goal should not be to promote or force market participants into hedging markets to manage their risk. In NRG's experience, intra-day markets are not liquid enough for a market participant to cover its gas risk on a consistent basis. Out-of-merit / out-of-cycle dispatches are usually covered with a combination of same day gas and subsequent next-day purchases depending on pipeline restrictions in place at the time.

ISO Response

Hedging is a business decision left to resource owners. While it may not be economic to hedge against every contingency, the ISO does not want to discourage practices that attempt to mitigate risk. The focus of this question is to better understand whether participants can hedge, what mechanisms are available, and whether there are obstacles or disincentives in using those existing mechanisms arising out of the ISO's market design. For example, what mechanisms, if any, can a gas-fired generator use to hedge (either financially or physically) the cost of buying gas in the intra-day market when the generator is not scheduled to operate day-ahead? For each hedging mechanisms identified, please explain how the generator would be able to recover the cost of the hedge.

Would the overall FERC effort to align the electric and natural gas days help to alleviate the stakeholder concerns about intra-day gas price volatility and illiquidity?

Q. Would the overall FERC effort to align the electric and natural gas days help to alleviate the stakeholder concerns about intra-day gas price volatility and illiquidity?

A. As NRG understands one current gas-electric coordination process (the NAESB process), the timely nomination cycle would close before CAISO market participants had been notified of their DA awards. This still leaves suppliers exposed to the intra-day market. Again, gas index prices represent a survey of what was transacted in the timely nomination cycle. Suppliers have no guarantee that they can procure gas in the less-liquid intra-day markets at the daily index price. Intra-day prices in both the December 2013 and February 2014 gas supply events were several times, even ten or more times, the associated daily index prices. It is not reasonable to construct a cost recovery system that allows suppliers to recover extraordinary gas costs only through a long

period of successful participation in “ordinary” markets.

ISO Response

Please see the ISO's responses above.

Company	Date	Submitted By
PG&E	7/1/2014	Erica Brown 415-973-5535
Opening Comments		
<p>Pacific Gas and Electric Company (PG&E) offers the following comments in the stakeholder process on the California Independent System Operator's (CAISO) June 10, 2014 Commitment Cost Enhancements Issue Paper and Straw Proposal and June 17, 2014 conference call.</p> <p>PG&E supports the CAISO's efforts to ensure its optimization does not produce anomalous and inefficient results due to gas price volatility. As a secondary priority, PG&E supports CAISO's efforts to establish start-up and minimum load costs that best reflect day-to-day gas price variation and unit-specific costs; however, PG&E cautions against changes that are too broad or too hasty.</p> <p>Regarding the prevention of inefficient dispatch prior to winter 2014/2015, PG&E's comments are as follows:</p> <ol style="list-style-type: none">1. PG&E supports CAISO's proposal to manually update the gas price input when there is a day-over-day increase of 25% or greater in gas prices, and proposes CAISO similarly manually update the gas price input on days when there is a day-over-day decrease of 25% or greater in gas prices. <p>Regarding the effort to enhance start-up and minimum load cost mitigation, PG&E's comments are as follows:</p> <ol style="list-style-type: none">2. Before retiring the registered cost option, CAISO should confirm the impact on hydro and pumped storage resources and should address transparency		

and arbitration issues with the start-up and minimum load cost approval process.

3. The implementation of an opportunity cost adder is premature at this time, but could be considered on a trial basis.
4. PG&E believes that a 25% proxy cost buffer applied to all resources during all hours may not sufficiently protect against the exercise of market power.
5. PG&E has also included other comments related to the pending Bidding Rules Initiative:
 - a. PG&E has concerns about the validation of intra-day gas trades due to the lower volume of gas traded and the lack of transparency into the intra-day gas market.
 - b. PG&E supports a movement toward using an index based on the single timely ICE gas price input instead of an index based on two lagged gas price indices.
 - c. PG&E recommends that CAISO monitor prompt month versus December delivery Greenhouse Gas (GHG) allowance trading volumes to ensure that the CAISO GHG index appropriately reflects market costs.

ISO Response

The ISO appreciates these comments. Please see our responses below.

PG&E supports manually updating the gas price input to the single InterContinental (ICE) gas price index when gas prices increase by 25% or greater day-over-day; similarly, the gas price input should be updated for significant decreases in day-over-day gas prices.

PG&E supports the proposal to update the gas price input when there is a 25% increase in gas prices day-over-day. However, this initiative should be balanced in providing protection to load against unnecessarily high uplift costs due to gas price volatility in the same way it proposes to protect generators against unrecoverable operating costs due to volatility. Failure to update these costs as prices drop can lead to unnecessarily high prices and inefficient market outcomes. PG&E understands that CAISO's start-up and minimum load calculations serve as a bid cap and that units are permitted to submit lower bids; however, it is currently not mandatory that all market participants lower their start-up and minimum load bids when there is a significant decrease in gas prices so failing to include a symmetrical adjustment does not

provide sufficient mitigation to protect load from potentially inflated prices.

Therefore, CAISO should manually update the gas price input when there is a 25% decrease in gas prices day-over-day.

ISO Response

The ISO appreciates these comments. The proposed 125% cap seeks to balance market power concerns and administrative burden. For the market on a system-wide basis, the ISO expects bidding of commitment costs to be competitive. In other words, should the gas price index decrease, the ISO expects a decrease in commitment cost bids overall. For areas with market power concerns, energy bids will be mitigated and the commitment cost bids will be capped to 125% for most natural gas-fired resources, lower than the current registered cost cap of 150% of proxy. The ISO views this as an improvement over the status quo.

Before retiring the registered cost option for all units, CAISO should a.) Confirm that the retirement will not affect the use of Master File registered start-up and minimum load costs for non-gas fired units, and b.) Improve the transparency of and arbitration process for start-up and minimum load cost review by Potomac Economics, particularly for existing contracts that have been approved by the CPUC.

PG&E supports using the most accurate possible costs in dispatching generation and views the proxy cost option as superior to the registered cost option in its use of a variable gas price input. However PG&E cautions against retiring the registered cost option without considering and protecting against unintended consequences. Specifically, PG&E seeks to ensure that non-gas fired resources are not negatively impacted by the retirement of the registered cost option and that start-up and minimum load costs in existing CPUC-approved contracts are included in the unit-specific proxy cost calculation (e.g., as a major maintenance adder).

a.) PG&E seeks to confirm its understanding that the retirement of the registered cost option will not alter the tariff language such that the start-up and minimum load charges currently submitted by hydro and pumped storage resources change. It is PG&E's understanding that the proposed retirement of the registered cost would not alter the CAISO Tariff Section 30.4.1.1.2, which allows a proxy cost calculation for non-natural gas-fired resources either a.) Based on a formula described therein or b.) Specified by the scheduling coordinators and pursuant to certain formatting and validation provisions. PG&E would appreciate confirmation from CAISO that the proposed retirement of registered cost would not affect the status quo for hydro and pumped storage resources.

b.) PG&E appreciates the review of submitted start-up and minimum load costs to mitigate potential over-recovery, but is concerned about that lack of transparency in the methodology used to review the reasonableness of those costs and the arbitration process for disputing allowable costs. Currently, if Potomac Economics (Potomac) deems the start-up and minimum load costs contained in the contract are too high, PG&E's only routes to contest that assessment are: a) escalating the dispute to FERC, or b) requesting further review by Potomac (however, Potomac's criteria for assessment of reasonableness is not clear to or shared with market participants).

In such cases where Potomac's cost estimate was not sufficient to cover valid costs, currently parties can work around any discrepancy using the registered cost buffer of 50% over proxy costs. With the retirement of the registered cost option, PG&E is concerned that there will be actual contractual start-up and minimum load costs that will not fit within the allowed buffer. PG&E notes that costs in its contracts are validated for reasonableness through a competitive process (solicitations), often further reviewed by outside engineering firms, and then reviewed and approved by the CPUC.

To address this potential problem, PG&E proposes that CAISO change its arbitration process for determining start-up and minimum load costs and provide greater clarity as to how the reasonableness of costs are determined. After appeal to Potomac for further review and before filing with FERC, PG&E believes an intermediate step should be added where CAISO, or another non-market participant entity that is qualified to review the reasonableness of costs, should participate in appeals process to ensure that the costs are assessed in a way that recognizes the fact that the costs in these contracts have been substantiated in that they resulted from competitive solicitation processes and have been reviewed and approved.

ISO Response

The ISO appreciates your comments. Please see Section 6 of the second revised straw proposal for a discussion on maintaining existing processes. No changes are proposed to Master File entries that are currently used to calculate the proxy cost option such as the start-up energy curve or the start-up fuel cost curve. Furthermore, this initiative does not automatically modify any negotiated costs such as major maintenance adders. Aside from the proposed

increase in the proxy cost option cap, all other elements of the proxy cost calculation remain the same such as the cost elements it shares with the registered cost option.

PG&E's point about "arbitration" is not clear. With the exception of major maintenance adders and the ability to negotiate a customized O&M adder for resources under the proxy cost, costs components for start-up and minimum load costs for gas fired units are based on resource-specific actual costs. Potomac is not involved in negotiating these items. For major maintenance adders, the ISO tariff adapted the process used for negotiated default energy bids which allows the Scheduling Coordinator to file with FERC in the event it is not satisfied with the negotiation process. The ISO has always maintained that contractual costs should not be reflected in the proxy cost calculation.

Based on conversations with the CPUC staff, not all contract costs approved by CPUC processes are reviewed line-by-line. Not all contracts are individually reviewed and approved by the CPUC staff. For example, if contracts are entered into in accordance with the CPUC-approved bundled procurement plan and included in a utility's quarterly compliance report, then the individual contracts are not further reviewed for reasonableness. If the CPUC has approved the utility's contracts or the IOUs have signed contracts in accordance with a Commission approved bundled procurement plan, then cost recovery for these resources is already guaranteed without further reasonableness review.

The implementation of an opportunity cost adder for gas-fired resources is premature at this time, but could be considered on a trial basis.

The use of an opportunity cost adder to more efficiently dispatch use limited gas-fired resources is interesting and worthwhile to consider, but PG&E would like to see improvement in the functionality of the model, sensitivity testing to determine the best model inputs, and improved dispute processes before the opportunity cost adder is made a requirement for use limited gas-fired resources. PG&E would support a roll out of the cost adder on a trial basis for gas-fired resource in the interim as improvements are made.

Prior to implementation, PG&E suggests additional development of the model including work on the following:

Model Limitations

- a. Run the model with 15-minute pricing as proposed in the Revised Straw Proposal. PG&E agrees with CAISO that using 15-minute pricing is appropriate since unit commitment and de-commitment decisions are made based on the 15-minute real-time price;
- b. Increase efficiency of model by co-optimizing run-time and start-up limitations for gas-fired units subject to both types of limitation;
- c. Produce annual results for gas-fired units facing annual limitations. PG&E agrees with CAISO that the model should be expanded to an annual optimization. PG&E would not support an optimization that allocates annual hour or start limitations between months prior to calculating the adder;

Model Inputs and Sensitivity Testing

- d. Determine whether the model better predicts future prices using the prior year's implied heat rate, the average implied heat rate based on multiple years, or a weighted average of implied heat rates with the most recent years weighted more heavily;
- e. Use forward gas prices instead of average prior month gas prices similar to the way the registered cost option is currently calculated;

Transparency and Process

- f. Explain coordination and consistency with the current Potomac process of calculating opportunity cost adders for default energy bids for gas-fired resources. PG&E would like to know if CAISO is proposing to calculate all opportunity cost adders and to be able to assess what changes would occur, if any, to the current process;
- g. Develop a dispute process similar to that for default energy bids (explained further below);
- h. Develop a mechanism to allow for adjustment if a use-limited gas fired unit is being dispatch too frequently and clarify whether there would be a back-stop limitation in the optimization to prevent units from violating limits;
- i. Publish a magnitude of the adders. This could be done as a percentage adder to proxy costs and could be provided as a distribution to protect sensitive unit information;
- j. Due to the complexity of the calculation and the reliability and cost risks of inefficient dispatch (for example, using up too many of a dispatch allotment early in the summer),

allow external review of the model, preferably by the DMM.

PG&E proposes that the CAISO develop a dispute process similar to the default energy bids in recognition of the fact that the formula used to calculate the opportunity cost adder for gas-fired use limited resources may not capture all types of use limitations or differences between different types of units. For example, the Delta dispatch limitation is fairly complex and it would be unreasonable to develop a model so complicated so as to capture this limitation, but a negotiated adder for this unit may be feasible. This dispute process could be modeled after the dispute process for calculating default energy bids.

ISO Response

[Please see Section 5.4, which explains that the ISO will delay discussion of the proposed opportunity cost methodology.](#)

PG&E believes that a 25% proxy cost buffer applied to all resources during all hours may not sufficiently protect against the exercise of market power.

PG&E favors establishing a lower buffer to captures minor day-to-day gas price variation and addressing unit-specific costs through improvements to the proxy cost formula (including improving the process of approving major maintenance adder costs). Improving unit-specific cost calculations instead of applying a higher buffer for all units will prevent the over-recovery of costs for units that do not need a large buffer. PG&E is concerned that establishing generous buffer on proxy costs to accommodate units currently on registered cost could increase overall uplift costs by increasing the mitigation cap for those units already on the proxy cost option. The proposed gas price input update threshold of 25% and the potential addition of the opportunity cost adder for use limited resources further reduce the need for a permanent 25% buffer even for those units currently on the registered cost option.

A tighter mitigation buffer would be reasonable if the proxy cost calculations were improved as PG&E suggested above through better aligning approved contractual costs and the costs allowed in the CAISO optimization. Additionally, PG&E supports mitigation bands that vary depending on market conditions. For example, under conditions when market power may exist, the band could be lower. These include minimum online commitment constraints that may commit units at minimum load based on location or during increasingly frequent low net load conditions where thermal resources are kept at minimum in anticipation of a ramp.

ISO Response

The ISO appreciates your comments. Please see the ISO's comments above regarding the proposed 125% cap, which is an improvement over the status quo.

PG&E has also included other comments related to the pending Bidding Rules Initiative:

- a. PG&E has concerns about the validation of intra-day gas trades due to the lower volume of gas traded and the lack of transparency into the intra-day gas market. A lower volume of gas is traded in the intra-day market meaning that these prices would be more susceptible to market manipulation if ex-post cost recovery were allowed. Additionally, there is currently no index of intra-day trades, and, while trades performed on ICE are stored on ICE, intra-day bilateral trades are not recorded.

If CAISO were to adopt an ex-post recovery mechanism for intra-day gas price variation, the mechanism should reflect increases and decreases in price. Further, it would be appropriate to adjust the proxy cost cap downward to prevent double recovery; implementing both a higher buffer and a separate cost recovery mechanism would be redundant.

- b. PG&E urges CAISO to explore ways to use only the ICE gas price index instead of two lagged gas price indices to develop the gas price input without affecting the day-ahead market schedule. PG&E does not have concerns about the robustness of this index given the volume of trades and believes that using the timeliest possible index as an input on a daily basis may alleviate some generator concerns about intra-day gas price variation and the weekend gas price blocks.
- c. Although PG&E believes the current Greenhouse Gas (GHG) index calculation is appropriate, PG&E recommends that CAISO monitor prompt month versus December delivery GHG allowance trading volumes in the future to ensure that the CAISO GHG index appropriately reflects market costs. PG&E understands that the CAISO index relies on trading volumes for allowance prices scheduled for December delivery because the market for those allowances has the highest volumes of trades and, therefore, produces the most reliable price. If trading volumes for prompt month

increase to the point where the market is considered as robust as the market for December delivery allowance and if there are systematic price divergences between prompt month and December delivery prices, it may be appropriate to revisit the way CAISO calculates its GHG index.

ISO Response

The ISO appreciates your comments for the longer-term bidding rules initiative. We seek clarification on PGE’s concern with the GHG index calculation. For example, what is meant by “prompt month?”

Company	Date	Submitted By
Southern California Edison (SCE)	7/1/2014	Wei Zhou 626-302-3273

Opening Comments

To allow sufficient time to test the performance of the opportunity cost model and address policy questions regarding the opportunity cost adder, the CAISO should consider phasing this initiative and implement only the elements that are absolutely necessary for this winter (Winter 2014-2015). Considering that severe gas price excursions are likely to occur infrequently (for example, the excursions only occurred on two days in the past year and may not happen at all this year), the measures described in the Tariff Waiver³ seem appropriate to address those types of situations. The proposed elimination of the Registered Cost Option and the proposed 125% Proxy Cost cap are more dramatic changes and, therefore, should be considered after the opportunity cost calculation model is fully developed and ready for production use, perhaps by the following winter (Winter 2015-2016). In the interim, the CAISO should run the opportunity cost model as an advisory tool, work out the mechanics of information exchange with stakeholders, and share the calculated costs with market participants as optional parameters to include in submitted startup and minimum load costs under the Registered Cost Option. This will allow adequate time to calibrate and improve the model, ensure absolutely needed measures to be implemented for the coming winter, address issues with permits and contracts that may not fit within the current design on the opportunity cost model (and allow for modifications to the model if needed) and allow a smooth transition to the scheduled must-offer obligation timeline under the Reliability Services Initiative.

3 The measures that were approved by FERC but expired are described in:

http://www.caiso.com/Documents/Mar6_2014_TariffWaiver_GasPriceIndexRequirement-Next-DayER14-1442-000.pdf

ISO Response

The ISO appreciates your comments. Please see the ISO's comments below.

Does the Proposal create inconsistency issues with the current definition of what constitutes a ULR?

As cited below, CAISO Tariff Appendix A defines a ULR as a resource that "is unable to operate continuously on a daily basis." In other words, if the resource can run for an entire calendar day, it is not a ULR, regardless of whether it has monthly and/or annual use limitations. The CAISO should clarify whether the Proposal, which is structured for resources with monthly and/or annual use limitations, is consistent with this definition. The CAISO should also clarify whether the current ULR definition should be changed to resolve the inconsistency.

Tariff definition of Use-Limited Resource –

A resource that, due to design considerations, environmental restrictions on operations, cyclical requirements, such as the need to recharge or refill, or other non-economic reasons, is unable to operate continuously on a daily basis, but is able to operate for a minimum set of consecutive Trading Hours each Trading Day.

ISO Response

The ISO proposal does not create any inconsistencies with the current definition of use-limited resources. The current definition of use-limited resources does not require an interpretation that would automatically disqualify a resource if it can run for more than 24 hours (one calendar day) continuously, as SCE claims and that is not how the ISO is applying that definition. There is no black and white rule, however. The Scheduling Coordinator must demonstrate why its resources cannot operate with a 24/7 offer obligation based on physical, environmental or regulatory restrictions. Contractual restrictions play no role in this assessment. In addition to the tariff, SCE can refer to the BPM for Reliability Requirements where use-limited resources are discussed in section 6.1.4. The definition of a use-limited resource is further clarified on page 77 as: "the nature of Use-Limited Resources prevents them from being available every hour of every day." Furthermore, page 78 notes "that under the ISO tariff, contractual limitations on the availability of Resource Adequacy resources, do not qualify a resource for Use-Limited status." Please see also the ISO's response to PGE above regarding contract-based costs approved by the CPUC.

How does the Proposal address annual use limitations? Does the CAISO plan to test the model for such limitations before implementing?

For resources with annual use limitations, opportunity costs should be calculated beyond a month. For example, suppose a resource has 20 starts available in a year and the simulation month is July – how many of those 20 starts should be allocated to July? Will the CAISO rely on market participants to provide this information? If so, what is the mechanism to ensure those estimates comport with the CAISO opportunity cost calculation methodology? Since this information is critical to ensure use limitations are not violated while concurrently maximizing the resource value, a mechanism to allocate annual use limitations on a monthly basis should be included, and adequately tested, before assessing the Proposal in its entirety.

ISO Response

Please see Section 5.4, which explains that the ISO will delay discussion of the proposed opportunity cost methodology.

What is the mechanism to ensure use limitations will not be violated under the Proposal?

Without an appropriate mechanism, the Proposal may result in violations of resources' use limitations due to its potential inaccuracy in calculation. For example, given the dynamic nature of the CAISO market (or any market), the simulated real-time prices may be very different from actual market prices which may result an under-estimated opportunity cost adder, which can in turn result in violations of resource use limitations. This may also result a risk in breaching resource contracts in case where the contracts specify resources usage between two or multiple parties.

The CAISO needs to clarify what will be the mechanism to ensure use limitations will not be violated under the Proposal.

ISO Response

Please see Section 5.4, which explains that the ISO will delay discussion of the proposed opportunity cost methodology.

How does the Proposal align with the must-offer-obligation element of the Reliability Services Initiative?

The CAISO should clarify how market participants can manage the risk of potential use-limit violations for scenarios where the CAISO generates opportunity cost-derived bids in accordance

with a must-offer obligation.

ISO Response

Please see Section 5.4, which explains that the ISO will delay discussion of the proposed opportunity cost methodology.

Is there a contingency plan if the opportunity cost calculation is not effective?

To the extent that the opportunity cost calculation methodology is not effective, will the CAISO consider alternatives, such as reverting to the Registered Cost Option?

ISO Response

Please see Section 5.4, which explains that the ISO will delay discussion of the proposed opportunity cost methodology.

How will use limitations of a rolling year, rather than a calendar year, be addressed under the Proposal?

The CAISO should clarify how other types of opportunity cost may be treated under the Proposal. In addition, resources can be limited on both a calendar and rolling year basis. How will such opportunity costs be calculated?

ISO Response

Please see Section 5.4, which explains that the ISO will delay discussion of the proposed opportunity cost methodology.

Transparency regarding the opportunity cost calculation model.

Since the CAISO proposes to calculate the opportunity cost, and to some degree, manage use-limited resources for market participants, the CAISO should clarify what information will be shared with market participants. For example, the CAISO should identify what specific information from the Master File and/or the ULR Use Plan will be used, simulated prices used in the calculation, the frequency of opportunity cost updates, as well as its plans to improve the model.

ISO Response

Please see Section 5.4, which explains that the ISO will delay discussion of the proposed opportunity cost methodology.

Closing Comments

Finally, in response to questions listed in Section 6 of the Proposal, SCE agrees with the

CAISO that it is not ideal to reimburse intra-day gas costs, as that would undermine efficient market dispatch and raise other issues. For example, how will intra-day gas costs be verified, as liquid intra-day gas price indices may not be available? There can also be instances when intra-day gas prices are lower than day-ahead prices. As CAISO stated, the proposed 125% Proxy Cost cap will provide flexibility to account for factors such as normal gas price volatility⁴. SCE suggests that the discussion on the intra-day gas costs should be linked to the effectiveness of the proposed 125% Proxy Cost cap, which can be evaluated when real-world data is available, should the CAISO Proposal be adopted.

ISO Response

Please see Section 6.1, which discusses the feedback received from stakeholders on the questions from this section.

Company	Date	Submitted By
Western Power Trading Forum	7/1/2014	Ellen Wolfe, Resero Consulting for WPTF, 916 791-4533, ewolfe@resero.com

We appreciate the CAISO’s revision to implement the manual process at the 125% of prior day’s cost level.

The 125% roughly comports with proposed proxy price cap and thereby roughly ensures that there is not a large gap in compensation before manual processes will all use a single index at the ISO.

ISO Response

The ISO appreciates your comments.

The CAISO should provide a means for intra-day gas cost recovery.

WPTF provided extensive comments on this aspect in its May comments, including providing some intra-day gas data demonstrating the volatility of intra-day gas prices relative to forward prices. The CAISO’s June 10, 2014 revised straw proposal asks for more data. It is not feasible for WPTF to provide actual data at the level requested by the CAISO. Collecting all the intra-day charges is an onerous task, and WPTF not being a market participant has no direct access itself to this data.

WPTF asks that the CAISO recognize that it is quite possible that intra-day commitments and

de-commitments will impose costs on the market participants beyond what the CAISO proposes to compensate for based on forward gas indices. Even without exact data it is undeniable that suppliers are at risk for intra-day charges beyond what would be covered by the CAISO's straw proposal design. Leaving suppliers exposed for such charges can result in increased costs for all market participants in the form of risk premiums the supplier would have to add to other price structures such as bilateral contracts.

The ISO should more firmly commit to addressing this in their bidding practices stakeholder forum, selecting to either provide an automated way for such costs to be addressed in bids and/or payments or providing a mechanism for after-the-fact cost compensation.

ISO Response

The ISO appreciates your comments. The ISO would then seek to have market participants provide this information, rather than WPTF.

The 125% proxy cost proposal is a significant improvement to provide a means for DA gas cost recovery.

As we indicated in our prior comments, an increase of the proxy cap to 125% seems to afford a much improved opportunity for participants to recover commitment and minimum load costs from DA IFM commitments. However, in light of the fact that the CAISO's proposal does not address the costs of procuring gas in the intra-day markets, WPTF believes further dialog as to whether the proposed 125% cap is adequate is needed. To recognize that there is a gap regarding intra-day gas but do nothing to fill the gap – even in the interim – is not reasonable nor is it efficient for the market. Similarly, given that the CAISO intends to eliminate the Registered Cost option it should consider a Proxy Bid cap of 150%.

ISO Response

Please see Section 5.1 for why the 150% cap on registered is not equivalent to 150% on proxy given the different rules and functionalities available under each option.