

**Bidding Rules Enhancements
Comments on Issue Paper
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Submitted by	Company	Date Submitted
Ed Charkowicz, eac@cpuc.ca.gov , 415-703-2421	California Public Utilities Commission	1/6/15

CPUC staff appreciates this opportunity to comment on the Bidding Rules Enhancements issue paper to help define the scope of the CAISO stakeholder initiative.

Summary

- The CAISO should maintain its existing use of gas price indices, and there should be an empirical basis for any changes to the gas index used.
- The CAISO should continue to rely on ex-ante market power mitigation schemes and not implement ex-post gas cost or other market abuse mitigation schemes.
- The generators should be limited to using bids up to 125% of the proxy gas costs components in their commitment costs.
- The bid costs used by the real time market to commit a resource should be used to settle bid cost recovery, even if the resource changes its bid subsequent to the commitment decision.

Background

The Bidding Rules Enhancements initiative (the initiative) was created to explore how the CAISO's bidding rules can be improved to support market efficiency and reinforce reliability. For example, the CAISO allows market participants to change real-time energy bids up to 75 minutes (T-75) before the trading hour in order to reflect the most current market conditions for efficient dispatch. In addition, under the *Renewables Integration Market and Product Review Process*, the CAISO decreased the bid floor to negative \$150/MWh to provide greater opportunities for renewable resources to reflect their curtailment preferences to ease over-generation conditions. The CAISO also proposed greater flexibility and clarity for bidding start-up and minimum load costs in the *Commitment Cost Enhancements Phase 1 and 2* initiatives.

The issue paper on the Bidding Rules Enhancement initiative proposes a stakeholder process that combines the energy and commitment cost bidding rules in order to refine and to improve

alignment between the three-part bids¹. The initiative will review the CAISO's current rules for energy and commitment cost bidding flexibility and resource characteristics definitions. This initiative will balance the benefits of allowing market participants to reflect actual costs through increased bid flexibility against the increased potential for inefficient market outcomes by inappropriately changed bid prices.

Detailed Comments: (Blue highlighted items pasted from the CAISO issue paper.)

Energy bidding flexibility should only be allowed based on *empirical* evidence that shows its efficacy.

Pursuant to these illustrative examples, the CAISO asks stakeholders the following questions:

- 1. Should the CAISO market disallow or reduce changes to real-time energy bids during an inter-temporal constraint?*

Yes. Real time energy bid changes should not be allowed during an inter-temporal constraint because there does not seem to be a market efficiency benefit. The disallowance of bid changes reduces the need for additional market mitigation measures during inter-temporal market constraints. The CAISO points out that current market bid flexibility provides sufficient opportunity for resources to respond to system and market conditions.

Additionally, disallowing bid changes during intertemporal constraints should reduce the need for additional market power mitigation measures that detect and prevent inappropriately changed bids from receiving bid cost recovery revenue when their resource cannot respond to dispatch instructions.

There appears to be no economic reason to change a real time bid during an inter-temporal constraint period except to exercise market power. The CAISO should consider rules that restrict real time bid changes when constraints bind or during intra-day transmission and generation outages.

- 2. On the other hand, should the CAISO market continue to allow real-time energy bidding flexibility but instead calculate bid cost recovery on the bid cost that the optimization used to make the commitment decision?*

Notwithstanding that it is logical that bid cost recovery be based on the bid costs that the optimization used to make the commitment decision, it would be beneficial to learn the arguments to the contrary. Specifically, what are the benefits of allowing bid costs to change after a unit has been committed? And why should that altered bid cost be used to calculate bid cost recovery?

¹ The integrated forward market (IFM) commits resources based on the three cost components - start up, minimum load and energy bids, referred to as a three part bid.

In addition, the issue under consideration appears to be: under what circumstances 'should a resource committed in the Real Time market up to four and a half hours (T-270) in advance of delivery'² change its bid(s) up to an hour and fifteen minutes (T-75) prior to delivery?

Changing bids after commitment could be problematic, because as the initiative paper notes "resources could get bid cost recovery on bid costs that did not trigger commitment."³ Allowing energy bid changes close to the operating interval may inappropriately incent some resources to bid in such a way as to maximize bid cost recovery payments without intending to operate their unit. It is possible that this behavior would not be detected and may not trigger dynamic market power mitigation measures.⁴

3. *What other options can the CAISO consider including other limitations that are not compatible with energy bidding flexibility?*

The CAISO should not consider any changes to bidding practices that require ex-post market mitigation measures or analysis, or complex and extensive market power mitigation schemes. Price changes after the market closes increase uncertainty, and could negatively impact market liquidity and efficiency. Perceived benefits from ex-post mitigation measures would likely be difficult to prove given how difficult it is to analyze historical counter-factual market results and situations.

Commitment cost bidding flexibility should only focus on fuel costs components and retain the use of indices and bid caps to bound commitment cost bids.

Stakeholders have requested additional bidding flexibility to reflect intra-day gas costs, which will help to manage gas use and avoid balancing penalties from natural gas pipeline companies. The CAISO notes that pending improvements resulting from the Federal Energy Regulatory Commission's (FERC's) notice of proposed rulemaking regarding gas/electric coordination has the potential to improve gas and electric industry alignment. Any policy created here should leverage these national improvements.

At minimum, the CAISO can allow resources that did not receive a day-ahead schedule to rebid into the real-time market. For greater bidding flexibility, the CAISO may also need to modify or

² <http://www.aiso.com/Documents/IssuePaper-BiddingRulesEnhancements.pdf>. "Outside of an inter-temporal constraint, the short-term unit commitment (STUC) time horizon commits resources based on bids that can be later revised up to T-75. The CAISO performs STUC starting for the third fifteen-minute interval of the current trading hour extending up to the next four trading hours."²

³ Ibid. "Therefore, the ISO market's bid cost recovery calculations will use bid costs that did not originally trigger commitment."

⁴ Ibid. "None of these examples would necessarily trigger the dynamic market power mitigation. A similar problem exists for the real-time unit commitment (RTUC)."

expand its market power mitigation methodology for commitment costs (which currently relies on bid caps). The following questions assume that the policies under Commitment Cost Enhancements Phases 1 are approved by the FERC 48.

1. Should the CAISO continue to use a gas price index?

Yes. Gas price indices should continue to be used as an objective proxy for contemporaneous gas prices. The current method of using two indices is a reasonable proxy for the cost of gas used for commitment purposes. Because each generator and resource manager has the option to hedge gas prices, they could mitigate most gas price changes inter and intra-day.

2. If the CAISO does retain use of the gas price index, should it permanently shift the close of the day-ahead market later in order to use the single Inter-Continental Exchange (ICE) index? Does this mean the current manual process for a gas price spike should be retained? (This assumes that the CAISO may or may not have additional market power mitigation for commitment costs.)

The CAISO needs to show that using one index, e.g. the Inter-Continental Exchange (ICE) index, will be more efficacious and accurate for predicting next day's gas costs than using the current two index paradigm. CPUC staff does not support making changes without empirical evidence to justify a change that could result in no net benefit or in negative unintended consequences.

The use of two indices already provides a reasonable proxy for the gas prices paid by California generators. Nothing prevents California generators from hedging gas price risks under the current paradigm.

The operating characteristics of the California gas market do not correlate with the eastern gas markets (I.E. PJM, NE-ISO, and NYISO). Therefore, the solutions to the eastern gas markets' problems do not necessarily apply to California problems. The dynamics of California's gas supply and storage, coupled with different climate and usage characteristics do not appear to pose significant ongoing problems that would require extensive redesign of the gas pricing rules. Some California specific problems are short-lived due to maintenance issues (E.G. pressure restrictions following the San Bruno incident) that do not correlate with eastern gas market problems.

3. If the CAISO does not continue to use a gas price index, should there be a cap on what costs can be bid into the market or allow for after-the-fact cost recovery? Does this mean the current manual process for a gas price spike can be eliminated? (This assumes that the CAISO will have market power mitigation beyond the current bid caps for commitment costs and will involve consideration of the complex interaction of minimum online commitment constraints, exceptional dispatch, and other tools used by the CAISO that impact commitment.)

The current manual gas price change tariff provisions appear adequate to address aberrant day-over-day gas price spikes.

CPUC staff believes that the CAISO should strive to use approximations of actual commitment costs in the optimization process. Scheduling coordinators and generators should manage their opportunity costs through their energy bids or through the opportunity cost component being developed for use-limited resources within Phase II of the Commitment Cost Enhancements stakeholder initiative.

There does not appear to be good reason to discontinue the use of gas price indices. Recognizing that discontinuing the use of gas price indices require reliance on market participants to specify gas costs and place an inordinate burden on the CAISO to check and validate market abuses after the fact. This raises significant concerns because there is no way for the CAISO to effectively determine a resource's gas cost. The CPUC believes the following questions should be considered before discontinuing the use of gas price indices:

- How would the CAISO determine what gas price to use to mitigate a bid price? It would seem that any ex-ante mitigation scheme would use an index or a combination of multiple indices.
- What kind of ex-post mitigation scheme would be effective and efficient?
 - How would the CAISO determine an objective reference gas price versus what was bid by any given resource?
 - If a range was used for mitigating gas costs, how would the mid-point and the outer bounds get determined?
 - Would it require auditing all procurement as well as hedging records, futures gas purchases, spot purchases and long term purchase contracts?
 - Would a simple affidavit be sufficient? Or would that be too difficult due to the complexities and permutations that could make up the purchases at any given time.
 - Would it be sufficient that a market participant simply attest to the highest price for any portion of gas existing anywhere in its supply chain?
 - What grounds would the CAISO have to dispute that price? Would CAISO even try to dispute that price?

The CAISO should continue to use indices and price caps as effective tools to prevent and mitigate the market abuses and increase market efficiency. Even though the CAISO strives to prevent and mitigate market abuses, it is not reasonable to assume that the CAISO will always design efficacious market power mitigation schemes for every eventuality in its complex market. CPUC staff notes that each year the electricity market

evolves in more complex ways. Therefore, the CAISO should try to use reasonable ex-ante controls that pre-empt market abuses.

4. *In the day-ahead timeframe (as well as real-time for short-start units), bids reflecting intra-day gas costs are estimates as the gas has likely not been procured. How can the CAISO establish a priori reasonableness threshold and not rely entirely on ex-post verification?*

This issue question needs clarification.

If this question is asking about aberrant intra-day gas price spikes, which happen rarely, then the current manual intervention tariff for such events appears adequate given the rarity of such events.

Alternately, if this question is asking about normal operating conditions, then it is not clear why it is the CAISO's responsibility to establish a reasonableness threshold for normal intra-day gas price changes. First, the CAISO needs to show that generators cannot adequately manage their gas procurement effectively under normal conditions without some CAISO intervention. It would seem that over many years of market operation, generators would have learned how to manage their gas price risks through various means such as hedges, storage or virtual bidding. Also, it would seem reasonable to assume that on average intra-day gas prices would fluctuate up and down equally, therefore, generators on average should be neutral on gas price changes.

5. *If the CAISO retains a bid cap, should it be differentiated among the various proxy cost components? For example, stakeholders have proposed a low bid cap on all non-gas items (O&M, greenhouse gas cost, etc.) and a higher one for gas.*

Yes, the bid cap for commitment costs should be differentiated among the various proxy cost components.

The CAISO should only allow a markup on fuel costs used to calculate the proxy cost bid cap rather than all commitment costs included in proxy costs. Only the costs directly related to fuel cost that would be affected by day-over-day gas price fluctuations should be allowed to increase up to 125% of the proxy gas cost within the cap calculation. The static and/or actual cost-based commitment costs such as Grid Management Charge (GMC), major maintenance, and variable Operations and Maintenance (O&M) should not be increased by any factor in the base calculation for the proxy cost bid cap.

The CAISO shows in Table 1 of its April 30, 2014 Commitment Cost Enhancement straw proposal⁵ that in a 5 year period (April 2009-April 2014) day-over-day gas prices deviated

⁵ http://www.caiso.com/Documents/2014-04-30_CommitmentCost_StrawProposal.pdf

only 7 times by more than 25% in California, which is less than 0.4% of the time. In other words, 99.6% of the time gas prices do not increase more than 25% from the day before. Therefore, by allowing a 25% mark up on the proxy gas costs (which is based on current index prices) any day-over-day change should be covered 99.6% of the time. Therefore, to include a 25% market up on all the other costs that remain static overly compensates generators and provides additional perverse incentives to seek bid cost recovery revenues which increases market inefficiency. By differentiating the bid cap to proxy cost components should address the concern over fuel price risk and commitment costs would not be unnecessarily inflated thus avoiding market inefficiency and uplift.

6. *What process should the CAISO institute to periodically review the cost cap (if retained) to ensure that it still enables headroom for market participants to accurately reflect their natural gas costs?*

The CAISO should entertain reviewing the cost cap when it finds:

- That market participants consistently bid at the cap and do not bid under the cap to facilitate optimal unit commitment. The existence of such a finding raises the concern that the market is not competitive enough for suppliers to feel the need to bid under the cap or may be the cap is set too low.
- The appearance that some market participants bid in ways that results in uneconomic under commitment of their generation resources, raises concerns of market power abuse, economic withholding or receiving excessive bid cost recovery revenues.

7. *Some stakeholders have requested a breakup of the current three-day weekend gas “package.” If this is not currently an available index option, what, if anything, can the CAISO do about it?*

No suggestions or comments at this time.

Resource characteristics should be reviewed and validated by the CAISO to ensure reasonableness of costs and performance benchmarks.

Many of the resource characteristics are difficult to verify as they may legitimately require some engineering judgment to balance excessive wear and tear and the technical capabilities of the resource. The CAISO believes that the vast majority of resource characteristics should be static over a period of time reflecting resource vintage and use. The CAISO currently does not have default thresholds and does not mitigate resource characteristics.

1. *What characteristics, if any, should allow for engineering judgment? How can CAISO verify this assessment independently?*

No suggestions or comments at this time.

2. *How often should resource characteristics be allowed to change?*

No suggestions or comments at this time.

3. *Should CAISO establish default resource characteristics for different generation technology types and use these parameters when a resource is mitigated? For example, combined cycles of a certain vintage may have heat rates within one range but for every 10 years the heat rates will change to a different range.*

No suggestions or comments at this time.

4. *Should the CAISO establish upper and lower bounds for resource characteristics regardless if there is mitigation?*

Yes. The CAISO should establish reasonable ranges that are empirically based on upper and lower boundaries' characteristics, costs and performance. The CAISO already provides an opportunity for market participants to negotiate certain costs and characteristics in excess of established bench marks. That practice appears reasonable as long as market participants provide sound evidence to support any exception.