

# Bidding Rules Enhancements

## *Issue Paper*

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### **Summary:**

Calpine's comments are premised on the belief that the integration of substantial variable resources is a differentiating factor between the CASIO market rules and those of other RTO/ISO. As such, we find the comparisons to others interesting, but not compelling.

In particular, we strongly support the RT bid flexibility present in CAISO markets, as it allows generators to signal RT opportunities to reduce or increase generation, based on awards in the DA and changed system conditions. We do not oppose reduced bid flexibility when a unit is constrained, but are not sure that the complexity of such a change is necessary. We support RT bidding of commitment costs, especially and particularly when there is no DA schedule, to allow for the substantial consumption of intra-day gas required to bring a CCGT on line. Finally, we do not oppose standardization of resource characteristics, but again, are not yet convinced that such a change is necessary.

### **Energy Bidding Flexibility**

In general, Calpine supports the ability to re-bid the energy curve in RT. Doing so allows generators to offer flexibility to the grid operator by offering to buy-back its DA position (via bids at or below marginal costs) and to reflect the risk of intraday incremental MW. This bid flexibility, which is highly used by the CASIO in current markets, should be retained in order to meet the challenges of increasing penetrations of variable resources.

Now, turning to the specific questions posed by the ISO:

1. Should the ISO market disallow or reduce changes to real-time energy bids during an inter-temporal constraint?
2. On the other hand, should the ISO 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?
3. What other options can the ISO consider including other limitations that are not compatible with energy bidding flexibility?

First, as a matter of principle, Calpine would not oppose constraints on bidding which would only and solely affect BCR payments. We seek information on how often this circumstance occurs, and when discovered, whether DMM has investigated such actions. In addition, we seek an analysis of BCR that would suggest that such actions are a significant portion of CASIO uplift payments.

Second, unfortunately, describing the circumstances when such a bidding constraint would be enforced would likely be very complicated and require a significant effort on the part of both the ISO and Stakeholders, especially for MSG units with multiple configurations. This complexity exists whether the bid constraint is imposed *ex ante* (*in bid rules*) or *ex post* (*in settlements*). Of these two options, Calpine would prefer *ex ante* rules, as they provide better transparency. Nonetheless, unless there is compelling evidence of inappropriate rebidding during inter-temporal constraints, Calpine would prefer to focus on other market reforms (e.g., CME).

Third, without detailed review and comprehensive analysis, we see a significant potential for unintended consequences. Those unintended consequences would be inefficient bid constraints. A simple example might illustrate how quickly this proposal becomes complicated and could result in unintended outcomes.

An MSG unit gets de-committed (transition down) from a higher configuration (HC) to a lower configuration (LC) based on the combination of its energy bids and the Pmin commitment costs. With the transition comes a minimum down time for the HC. So during the Min Down Time:

- Which energy bid changes are disallowed, the LC curve or the HC curve?
- What about Transition Costs (if RT bidding is allowed)
- If for LC, is the entire LC bid range frozen?
- Does the freeze last for the entire MDT, regardless of system conditions?
- Is there an asymmetric LC freeze? (e.g., no increased bids at Pmax, or no decreased bids at Pmin??)
- Are RT A/S bids also frozen?

In summary, unless compelling evidence of inappropriate bidding during inter-temporal constraints is identified, Calpine believes there are much more productive uses of our collective and limited resources.

## **RT Commitment Cost Bid Flexibility**

Calpine has, and continues to support the ability to re-bid commitment-type costs in Real Time (i.e., Start, Minimum Load as well as Transition Costs), particularly if a unit (or higher configuration) is not committed in the IFM. The primary driver of this bid flexibility, as the ISO has identified, is exposure to volatile RT, intra-day gas prices. As particular to our dominant technology, any “surprise” start of a CCGT in RT requires a substantial amount of intra-day natural gas in order to meet minimum load generation.

1. Should the ISO continue to use a gas price index?
  - a. Yes
  
2. If the ISO 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 ICE index? Does this mean the current manual process for a gas price spike should be retained? (This assumes that the ISO may or may not have additional market power mitigation for commitment costs.)
  - a. Yes, the ICE index more accurately will represent trading for the prompt day. If the ICE index is used, we do not see the ongoing need for a manual process.
  
3. If the ISO 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 ISO 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 ISO that impact commitment.)
  - a. Regardless of what solution is chosen, if gas costs are not represented reasonably in Default Bids applied during mitigation, an after-the-fact demonstration of costs should be allowed.
  - b. Without understanding the basis or structure of MPM applied to commitment costs, we cannot state an opinion on whether any manual process needs to be maintained.
  
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 ISO establish *a priori* a reasonableness threshold and not rely entirely on *ex post* verification?
  - a. The simplest solution would be to allow a higher bid cap in RT. For instance, rather than the current 125 percent of Proxy proposal,

- allow 175 or 200 percent for intra-day commitments/transitions that are incremental to the IFM awards.
- b. The cap should be sufficiently high as to minimize the need for *ex post* verification.
5. If the ISO 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.
    - a. Costs that do not vary between DA and RT could have the same cap. Natural gas costs, are however quite volatile and should be differentiated.
  6. ?
    - a. Excellent open-ended question.
  7. What process should the ISO 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?
    - a. A periodic review of the number of requests for *ex post* cost review would lend insight into the question of whether there is sufficient headroom.
  8. 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 ISO do about it?
    - a. No comment.

### **Resource Characteristic Standardization**

The ISO proposes a standardization of RDT unit characteristics such as MDT, and MUT. Calpine sees the value in standardization that the ISO seeks. In fact, we would welcome a safe harbor of resource characteristics if possible.

However, as we have said many times, there is no “operator manual” that comes with a custom designed power plant (such as a CCGT) that would definitively state the resource characteristics. Identification of every characteristic represents a risk factor that requires professional judgment. An analogy has been helpful in explaining this in the past.

The operating manual you receive when you purchase a car describes many attributes and requirements of the car. After reviewing the manual in detail, one might blindly conclude that you could continuously drive your car in first gear. Doing so is not prohibited by the operating manual, but based on the simplest understanding of risks and economics, such action is not advisable. Complex power plants are no different in that every operational mode creates risk tradeoffs – tradeoffs which we continuously revisit as the fundamentals of the market change.

With this context, we turn to the questions raised in the Issue Paper.

1. What characteristics, if any, should allow for engineering judgment? How can ISO verify this assessment independently?
  - a. It is difficult to identify any characteristic that *does not* require some engineering, or economic judgment. Something as simple as a heat-rate depends on factors such as plant age, elevation, ambient temperature, humidity, the state of the emission reduction catalyst, and time since the last overhaul of several key components (e.g., cooling system, turbines, generators, etc.) The same plant in different locations could have significantly different heat rates.
  - b. In addition, many characteristics are inter-related. The number of cold starts might drive major maintenance and the MDT might drive on-time Start risk.
  - c. With this said, a broad range of resource characteristics might be independently established by technology. RDTs that rest within these safe-harbor ranges might be allowed to be modified without review, but significant departures might need different scrutiny or information.
  
2. How often should resource characteristics be allowed to change?
  - a. Continuously, if needed. This market has experienced and will continue to experience a significant secular shift towards “preferred resources”. This shift will affect the economics and operational demands placed on the conventional fleet. The resource characteristics must be allowed to change in order to economically give the flexibility the ISO seeks.

3. Should ISO 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.
  - a. No. Parameters accepted by the ISO and used in bidding should be the basis of mitigated energy bids when necessary. There is no plausible connection between a non-competitive congestion component (which would drive LMPM mitigation) and static resource characteristics.
  
4. Should the ISO establish upper and lower bounds for resource characteristics regardless if there is mitigation?
  - a. See answers 1 and 3.

Thanks