Stakeholder Comments Template

RI Phase 2 – Day-of Market 7/6/11 Initial Straw Proposal

Submitted by	Company	Date Submitted
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Summary:

Calpine's previous comments in this stakeholder process suggested that as the first priority, the CAISO fix existing markets. Indeed, our views in this – as well as the related RIMPR1 process – are consistent. Specifically, we support BCR reform as one specific, targeted and significant improvement that must be made to CAISO markets.

Many of the larger "fixes" are teed-up in this RIMPR2 proposal, but left on the tee. Calpine continues to believe that all constraints on the system should be modeled and priced. Calpine supports the development of an explicit "Flexibility" bid-based capacity product, as presented in the Straw proposal. However, while the Straw proposal identifies other unpriced constraints (e.g. MOC, Inertia, etc.), it offers no concrete fixes for these issues.

In addition, many pages of the Straw proposal are dedicated to a discussion of the compensation challenges for conventional resources as associated with declining revenues and increasing costs. However there are only cryptic discussions of forward capacity markets, or other changes that may support ongoing operation and investment in flexible compensating generation. In addition, one of the principles, discussed below, seems to wrongly imply that a standard for reasonable compensation is to ensure that generation is merely "commercially viable."

Finally, the Market Vision and Roadmap contains an unstated and unsupported premise that the CAISO needs more frequent dispatch (1 minute) and needs resources that can respond more quickly than the current fleet. If the Roadmap is intended to extrapolate what *might* be necessary in the future, we find the proposal provocative.

If however, the Roadmap is intended to be a work plan for the near term, we find the proposals to contain unsupported and possibly misguided, costly and unnecessary design modifications. To factually support the end-state, the CASIO should identify with clarity and magnitude, the attributes that are needed for integration. Only with this knowledge can the CAISO design markets that will deliver what is needed while holding tightly to the goal of being technology-agnostic.

1. Please provide any comments on the ISO's proposed schedule, timeline, or process for this stakeholder process.

   Calpine finds it difficult to provide comprehensive comments on this proposal without understanding how this proposal might relate to DA markets. Indeed, Calpine believes that the primary proposal contained herein – that of a new market for Flexibility Services -- should be matched with bid-based capacity product in the IFM. In the IFM, co-optimization of energy, A/S, Flexibility and commitment could be accomplished in a way that allows both the CAISO and suppliers to secure the grid at least cost.

2. Are there additional goals or operational challenges that the ISO should be addressing through this stakeholder process?

   The Straw Proposal offers an interesting and provocative proposal to manage real-time flexibility needs. We look forward to CAISO proposals to address forward market issues.

3. Please indicate whether your organization agrees with the guiding principles listed in the straw proposal. If not, please indicate why not. If you would like to have other guiding principles added, please describe those additional principles.

   Calpine believes that the principles are both comprehensive and appropriately focused. We strongly support the principle that CAISO markets should be "Durable and Sustainable".

   However, we believe that the "Expected Outcome" in that section is misstated. Specifically, the expectation that "resources are commercially viable…" may have been inadvertent, but is an inappropriate and insufficient standard. Rather, the outcome should be that compensation for resources is just and reasonable, and that it provides both a return of and on invested capital.

   "Commercial viability" is an insufficient standard that implies that resources should merely cover their going forward costs. This proposal would perpetuate price discrimination between new and existing assets. It also sets an internal inconsistency within the expected outcome that resources are "incented to enhance availability and performance".

   Finally, it might be an interesting exercise – and an enlightening one – to review the current market design against the stated principles and expected outcomes. It would yield a significant list of near-term market fixes.

4. Please provide your organization's views on any incremental ancillary services you believe are necessary to accommodate the intermittency of renewable resources.

   Calpine's view is that the CAISO's proposal for a bid-based capacity product to acquire ramping capability is directionally correct. Conceptually it is an insurance policy that protects against unforeseen variability, and ensures that the grid will be secure within a reasonable range of expected variability. The cost of this product will provide a partial benchmark for the costs of integration.

   Additionally, the CAISO should only consciously and carefully conflate the absence of wind or sunshine with a traditional outage. For a hundred years, the grid has been secured by buying operating reserves (spin and non-spin). These operating reserves were held to be deployed during infrequent, but significant disruptions in supply – outages of generation or transmission.

   The sudden absence of sun or wind generation will be commonplace – first because of fairly predictable diurnal patterns, but also because of less-predictable meteorological events. Calpine believes that the insurance against the two very different events (contingencies versus fuel-related ramps) should be procured and managed separately.

5. Does your organization believe that Residual Unit Commitment should be performed more granularly than daily (i.e. on-demand RUC)? Is on-demand RUC needed if the 15 minute unit commitment, either in RTED (Option A) or RTPD (Option B) looks forward 8-10 hours?

   First, and primarily, Calpine supports a longer look-ahead in RT mechanisms in either Option A or Option B. Indeed, part of the reason Calpine withdrew from MSG was because the RT market was unable to manage minimum downtime (MDT) constraints and "see" a future start-up. The current RT dispatch holds units on line and exhausts their MDT, which forces either violations of MDT, missed IFM start schedules, or both.

   Second, the product "Residual Unit Commitment" has a very specific purpose – to ensure that capacity is acquired to meet the ISO's forecast of *demand* if higher than the cleared IFM demand. RA resources are required to bid into RUC at precisely zero. The commitments envisioned in the new product are of a different nature, and are related to supply variability. They should be treated differently than RUC, and should be allowed to bid and be paid for incremental capacity options, like any other A/S.

As to whether an on-demand UC ("ODUC") is needed, the answer, in part, depends on whether the CAISO intends on acquiring "Flexibility" capacity in the IFM -- a proposal we would support. If it does acquire a statistically determined amount of flexible capacity in the IFM, it would significantly diminish the need for on-demand UC.

If changes to unit commitment are contemplated, such as the design of an on-demand feature, the CAISO should consider modifications that would allow de-commitment, as well as new commitments.

6. Please provide your organization's views on replacing today's Hour Ahead Scheduling Process (HASP) for inter-ties with a simpler method that would not involve establishing separate hourly prices for the inter-ties and that would not include bid cost recovery. Please suggest proposals concerning what accommodations are necessary at the inter-ties to provide scheduling flexibility for western market entities.

Calpine has been continually concerned about structural differences in pricing between hourly intertie schedules and 5-minute internal generation dispatch.

However, consistent with our theme of fixing the current market first, we do not support the addition of a third, hour-ahead settlement market. We see no substantial benefit to doing so, and see significant cost and added complexity.

Additionally, we believe that the benefits of higher scheduling granularity at the interties could be significant in terms of managing variability. While provocative for a Vision of how interties and internal generation can finally compete head-on, convergence of pricing, scheduling, dispatch and settlement on a 15 minute basis would have significant direct cost (e.g. systems) and indirect cost (e.g. masking volatility). Given that movement to 15 minute scheduling and pricing at the interties is highly uncertain in the near term, the CAISO's focus should remain on fixing current markets.

7. Does your organization prefer a two settlement market or a three settlement market? Please describe why.

See 6.

8. Please provide your organization's feedback on the concept of a 1 minute Real Time Imbalance Service (RTIS).

As stated above, Calpine believes that the development of a bid-based capacity service is directionally correct. We do question both the need for

incremental granularity in dispatch and the new regulation design. We have not been presented with data or analysis that suggests that such changes are needed.

However, the studies, and CAISO operational experience shows us that unloaded, ramping capacity is needed to address changes that may have occurred between RTPD runs and RTD. Without further analysis or identification of required attributes, it seems much simpler that this capacity could be acquired, on a forward basis and at reasonable cost, and dispatched over the current 5-minute horizon.

Finally, we see that RTIS attempts to acquire ramping capacity "just-in-time". In doing so, the CAISO avoids the risk of buying early what it might not need later. However it does so at the risk that what is needed may not be available (as like today.) We believe that unloaded capacity should be co-optimized in the IFM, not bought, or worse yet, commandeered in RT.

a. Does your organization agree that with RTIS, regulation should be changed to a bi-directional service?

We are not convinced that Regulation needs to change.

b. Is one minute the correct dispatch interval for RTIS?

We have no basis to determine its "correctness", as we have no data or analysis that demonstrates that 5 minute dispatch is insufficient.

We however would conclude that if the CAISO needs more frequent dispatch than 5 minutes, that 5-minute granularity in pricing is insufficient. If the demands on the system are changing significantly within the 5 minute window, energy prices should reflect that variability. This of course begs the question of whether we pursue one-minute pricing – a question that Calpine will answer when and if the CAISO presents data to support the need for 1 minute dispatch.

Finally, if the CAISO does move to one-minute dispatch, Calpine cannot envision a workable manual dispatch environment, and the CASIO should include in its analysis the costs and complexity inherent in automating one-minute dispatch.

c. How should RTIS be bid, selected, and dispatched? Should a mileage bid be used for dispatch with a market clearing mileage price determined each minute?

RTIS, and hopefully its IFM counterpart (IFMIS?) are capacity options. They should be bid with a capacity price and an energy strike price. A mileage component might be necessary if units are expected to move substantially – and these factual determinations should be evaluated with simulations.

d. Does your organization's opinion on RTIS differ depending on whether Option A or Option B is chosen?

As discussed below, we prefer energy markets that will expose energy market value. We are not convinced that 15 minute energy markets improve price transparency and indeed that they may mask important volatility. That said, the need for a new product increases in Option A as the CAISO must manage intra-15 minute variability.

9. Please comment on your organization's preference for Option A or Option B with regard to the real time market. If neither option is feasible in your view, please provide input on how the real time market should be configured.

Calpine is convinced that the combination of 5-minute dispatch and the acquisition of incremental unloaded capacity would be insufficient to meet the needs of the CAISO as described in the Straw Proposal and in the CAISO's Integration Studies. The benefits of 15 minute pricing discussed in the Straw proposal, in our view, do not support such a wholesale modification to the markets. Indeed, extending the price interval to 15 minutes would tend to mask real, important and valuable market value.

While open to a 1-minute market – if it can be demonstrated that such is required -- we believe that a measured pace to these fundamental market changes is prudent.

a. Would 15 minute real time prices enable price responsive demand or demand response?

Maybe, we don't know.

But the question seems somewhat technology-religious rather than technology-agnostic. The more appropriate question might be, "Do 5-minute prices create a barrier to price-responsive demand or demand response?"

b. In Option A, with 15 minute RTED, what is your organization's opinion about a 10 minute ramp period?

This question may be a bit premature, because the ramp period may have direct impacts on the need for energy dispatch (just as 20 minute intertie ramps have today.) Once the CAISO determines the energy dispatch frequency, the RTED ramp period may be more rationally evaluated.

As a general matter, however, within the limits of our machines, Calpine could accommodate whatever ramp period the CAISO determines. Faster ramps will create more thermal stress, and therefore more costs.

10. How often should renewable resources be allowed to schedule?

First, the significance of the question must be established. This is an issue that was raised in both the discussion at the stakeholder meeting, and in the Straw proposal, and never clarified.

What does the CAISO mean by a "schedule" and how does it relate to energy imbalance? In our view an imbalance is created when there is a difference between forward awards (IFM or HASP) and metered output and that difference is settled at the RTD price. Is the CAISO suggesting that this fundamental tenet of settlement be modified? Is the ISO suggesting that this foundational component of settlement be modified *just for renewable resources*? That seems again to be technologically religious, not agnostic.

Or maybe the CAISO is suggesting that renewable resources *must* provide a near-real-time estimate of output for CAISO operational purposes?

If the CAISO is considering the possibility that renewable resources could not bid into DA markets, and wait until very close to RT to "schedule" how might that be any different from just selling at the RT price?

a. In Option A does every 15 minutes make sense?

See 10.

b. In Option B should renewable generation be able to schedule every 5 minutes, 15 minutes, or some other time interval?

See 10.

c. Does it make sense to limit this scheduling opportunity to only renewable resources, or should it apply more generally? Who should be able to schedule more granularly than hourly?

See 10.

11. Please provide any other comments your organization would like the CAISO to consider through this initiative.

Thank you for allowing us to comment.