Comments of Calpine Corporation on

2016 Stakeholder
Initiatives Catalog and Roadmap
Draft

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Summary:

Calpine believes that one of the most pressing matters facing the California market is the unprecedented development and at times, overabundance of renewable energy. In reviewing the draft Roadmap, we were particularly struck by the paucity of proposals on managing potential, or with a return of normal hydroelectric conditions, highly likely overgeneration conditions.

In this document, Calpine proposes changes that range from simple, low-hanging fruit – to more complicated, but potentially effective strategies to manage overgeneration, particularly in light of the beneficial EIM market expansion that is occurring. We also offer proposals that that improve price transparency and improve the efficacy of LMP pricing.

We understand that the CAISO asserts that its plate is full with ongoing initiatives as well as new, likely controversial proposals it wishes to advance (e.g., Stepped Constraint Parameters). We believe that a reprioritization, when coupled with incremental resources should be considered. In particular, Calpine would not object to supporting the cost of incremental contracted resources, if necessary, to manage more Stakeholder Initiatives.

Overgeneration Simple Fixes

Here are five, relatively simple fixes to energy markets that could allow the ISO to manage overgeneration more effectively.

- **Eliminate Export Fees in Both DA and RT**

  Export fees create an administrative and financial barrier to transactions, particularly when the ISO has an overabundance of renewables. The financial hurdle is (1) unpredictable, as several charge-types are allocated to exports, and (2) generally in the range of $8 to $12 per MWh (which can exceed, or be a significant fraction of the energy price during many hours of the day.)

  Interestingly, the ISO already has the discretion to waive or negotiate export charges during "declared" overgeneration conditions in RT (Operating Procedure 2390). This flexibility was granted to Operators since the dawn of the CAISO in order to productively dispose of energy in relatively rare circumstances. Simply put, the secular changes in the generation fleet will make overgeneration conditions (now in DA as well as RT) commonplace during certain times of the year, rather than rare, and efficiency can be improved by allowing energy to flow without this hurdle. In fact, eliminating the export fee may very well reduce expected renewable curtailments.

  The most significant portion of the export fee is the wheeling-out fee which is intended to recover a very small portion of the transmission revenue requirement often referred to as the Transmission Access Charge (TAC). A slightly higher cost burden might be placed on loads if the Export Fees are reduced or eliminated, but the beneficial effects on renewable curtailment and price formation appear to significantly outweigh this burden.

- **Drop the Bid Floor to Negative $300, or lower.**

  Calpine has historically advocated a deliberate approach to dropping the Bid Floor. The stunning growth of, and at times, overabundance of renewable energy has caused us shift to a more aggressive stance. We support a significant reduction in the bid floor as soon as the FlexiRamp down product is implemented.

  Dropping the bid floor further will allow a rational decline in LMP prices that will encourage resources to cycle off, or curtail output in both DA and RT markets. While a reasonable first step may be to enjoin the CAISO plan which was to evaluate a reduction to -$300, Calpine would not object to a reduction which yields symmetric cap and floor with a magnitude of $1000.

- **Modify MSG BCR to Encourage Rather than Discourage Decommitment in RT**

  Current Bid-Cost Recovery (BCR) rules encourage an MSG resource to remain in the awarded DA configuration during RT and potentially penalize resources that are decommitted to lower configurations. This unintended incentive is obviously counterproductive to managing overgeneration.

  Take a simple example in which an MSG unit has a DA award in its 2X1 configuration. RT conditions change, for example, because renewable production is higher than anticipated. The combination of unit constraints, bids and the ISO's forecasts in STUC allows the unit to be optimally decommitted for three hours. The unit "buys back" the difference between DA award and RT dispatch level at the presumably lower RT LMP.

  All goes well IF the CAISO forecast is correct. However, if conditions change and prices recover while the higher configuration is constrained off – and particularly, if prices exceed DA -- the resource owner will buy back their DA position by paying the CAISO. In essence they are penalized by the CAISO's decision to decommit the unit, when in hindsight, the decommitment was suboptimal.

  In particular, current BCR rules will allow uplift *within the lower RT configuration, but not for the energy "short" in the higher DA configuration.* This unintended result is a direct consequence of MSG rules and would not apply if the unit was still scheduled with a Forbidden Operating Region.

  Calpine believes that the optimal choices of the CAISO should result in revenue protection for any and all of the difference between DA and RT conditions. In order to address gaming concerns, Calpine would not object to reasonable protections, such as "freezing" bids for "from" configurations when optimal decommitments are made.

  Decommitments, including full cycling down or off, could be a very effective way to manage overgeneration and reduce self-scheduling and will be more willingly implemented if BCR rules are fixed.

- **Greatly Reduce Options for Self-Scheduling and Self-Supply**

  There has been significant discussion of the maladies created by self-schedules, particularly in the face of overgeneration conditions. Of course, self-scheduling defeats the main purpose of the market—which is to optimize the selection of resources. Self-scheuling also reduces the pool of available economic bids and when overgeneration occurs and the CAISO runs out of economic bids, it must cut self-schedules pro-rata and the price automatically and discontinuously falls to the bid floor. Self-Supply of A/S also may result in a reduction of downward ramping capability and similar constraint violations.

  Non-conditional elimination of self-scheduling/supply may not be appropriate, as some resources are classified as must-take (e.g., nuclear, QF, etc.) Nonetheless, many internal resources and imports are routinely self-scheduled. Most of these resources likely have an economic point of indifference that can be bid, rather than being granted price-taker status. As such, the CAISO should limit the amount of discretionary self-scheduling.

- **Eliminate Minimum Hourly Block Imports**

  The current tariff allows for scheduling of invariant, multi-hour block imports. The optimization must take all or none of the block bid. This constraint can at times, create RT and or DA inflexibility. Units that must run for consecutive hours can more effectively be modeled as Resource-Specific System Resources.

Other Efficacious Price Reforms

- **Implement Administrative Pricing in Certain Circumstances**

  In several circumstances, the actions of the CAISO operators have the unintended effect of suppressing LMPs. We suggest that forms of alternative bidding or administrative pricing be implemented in the following circumstances.

  - **Exceptional Dispatches (ExD)**

    Units that are Exceptionally Dispatched are currently inserted into the market model as self-scheduled energy. These price-taker bids have the effect of shifting the supply curve out to the right, thereby lowering the LMP. In order to address this price effect, the CAISO should consider two options – ERCOT's approach or alternatively, insertion of DEBs.

ERCOT has a process to reflect Operators actions simply. They run the market, dispatch resources and set LMPs first with all out-of-market transactions included. This sets dispatch levels and initial price levels. Subsequently, and only for settlement purposes, they re-run the same market *without the operator actions* and create a second set of LMPs. Any increases in LMP are reflected in an adder at each node.

Alternatively, the CAISO could insert the default energy bid into the market model for any exceptionally dispatched energy. Settlement of the ExD energy would be unaffected, but a non-zero bid could reduce the otherwise undue price suppression. This may require a tariff change to allow ExD energy bid at DEB to set the LMP.

- o **Administrative Pricing for MOC Dispatched Energy**

  Units committed under the MOC constraint are allowed to be dispatched incrementally above Pmin in both DA and RT markets. However, that incremental dispatch can displace otherwise optimal commitments. That is, an incremental offer curve for an uneconomic MOC unit could be lower than the commitment costs of an otherwise economic unit. While the objective function will be met by dispatching the MOC unit, it does this on the basis of false competition.

  To correct this unjust result, the CAISO should consider (1) the ERCOT re-run discussed above, or (2) imposing administrative pricing to the incremental cost curves of units committed under MOC – or any other unpriced capacity constraint. The administrative price should be significantly above the average commitment costs and should, if required for system reliability, be allowed to set the LMP.

- o **Administrative Pricing during DSM deployments/ FlexAlerts**

  The participation of resources in the CAISO's PDR and RDRR programs has been extremely limited, and while we do not know, Calpine believes that those participating resources have never set the LMP. On the either hand, the CAISO has the right to trigger utility demand-side load curtailments and program implementation and has done so in the recent past. Implementation of these

programs reduces clearing prices – an ironic result during shortage conditions.

Again, rather than allowing this price suppression, the ISO should consider an administrative price during periods of requested load relief.   Alternatively, the ISO could use the ERCOT re-run methodology and place a proxy load into the market which represents the amount of curtailed load.

- **Improve Transparency**

    Calpine believes two steps will add significant transparency to the market processes

    - **Review Distribution of Operating Procedures**
      The CAISO has nearly 250 Operating Procedures, the majority of which are unavailable to Market Participants, presumably for fears of market power. We suspect that many of the designations were made before the ubiquitous local market power mitigation measures were implemented. The ISO should engage a public process to revisit the designation of each Operating Procedure with a rebuttable presumption that each should be available to Market Participants (under appropriate non-disclosure agreements, as needed for physical security reasons).

    - **Distribute the Algorithms/Results Driving Operator Actions**
      The CAISO has several non-transparent algorithms that provide information to CAISO Operators. The Operators take non-market actions based on these algorithms that clearly affect price outcomes. Calpine repeats, herein, its often stated request to make the substance of the algorithms, inputs and outputs (including operator actions) available to Market Participants.

      Without limitation, these algorithms include:
      - Load Biasing mechanisms used at the conclusion of the IFM and before RUC.
      - If different, RUC algorithms that recognize virtual bidding, unscheduled renewables and other factors prior to running RUC
      - Intertie biasing algorithms that may result in hourly pre-dispatch of imports.
      - Post DA security algorithms which may suggest the need for Exceptional Dispatch.

In addition, the CAISO should consider the ERCOT approach wherein operator actions that are out-of market are allowed, but a re-run of the market excluding those actions establishes LMP adders for settlement purposes.

CAISO "ongoing" and "new initiatives"

Calpine strongly supports continued focus on both CME and Flexible Ramping Products. The apparent absence of recent progress on each of these initiatives is of great concern. Specifically, Calpine believes the undue and unjust influence of Minimum Online Capacity constraints must be addressed forthwith.

Calpine understands that several new initiatives will be necessary to address the complicated issues associated with EIM expansion as well as the possible incorporation of PacifiCorp in the CAISO BAA.

Nonetheless, we believe that several initiatives are misplaced as 2016 priorities. We disagree that 5.2.1, "Stepped Transmission Parameters" is FERC-mandated, and suggest that it can be deferred. We do not understand the "problem" that is being posed with 5.2.3, Fifteen Minute Market Liquidity and suggest it, too can be relegated to meetings for further development. While we do see value in a longer real-time look-ahead, we ask that the ISO further describe the value of 5.3.4, Real-Time Market Enhancements.

Thanks