Stakeholder Comments - System Market Power Analysis

Submitted by	Company	Date Submitted
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SCE appreciates the opportunity to provide comments on the CAISO System Market Power Analysis dated April 29, 2019 (the Analysis)[1].

1. There is an urgent need for market power mitigation at the CAISO system level

There has been an increasing number of hours that the CAISO's day-ahead market had experienced price spikes during the summer over recent years[2]. Both the CAISO and the Department of Market Monitoring (DMM) have observed aggressive supply-side bidding (e.g. in the form of steep bid curves or price-cost markups) during high load days and increasing supply-side concentration[3]. The CAISO and the DMM noted the tight supply conditions during those events[4].

The aggressive bidding pattern, coupled with tight supply conditions, has led to price spikes and significant costs for load serving entities (LSEs). With the anticipated once-through-cooling (OTC) unit shutdown, the supply conditions can get tighter and more concentrated. Further, the price cap will increase from $1,000/MWh to $2,000/MWh. These conditions can exacerbate the system market power issue identified by the CAISO and the DMM, and thus there is an urgent need for a system-level market power mitigation.

2. The conclusion of the Analysis must be revised by removing virtual supply bids from the supply stack

Although the analysis included various scenarios and sensitivity analysis, the CAISO intentionally drew its conclusion based on a scenario that includes virtual supply in the supply stack, and thus concluded that *55* hours were structurally uncompetitive in 2018[5]. However, the number of uncompetitive hours at the system level can be in the range of *200* to *600* hours without including

[1] Analysis of Structural System-Level Competitiveness in the CAISO Balancing Authority Area (the Analysis), dated April 29, 2019, http://www.caiso.com/Documents/SystemMarketPowerAnalysis-May6-2019.pdf. The Presentation, http://www.caiso.com/Documents/Presentation-SystemMarketPowerAnalysis-May6-2019.pdf.
[2] The day-ahead market price at the SCE Default Load Aggregation Point (DLAP) has been at or above $500/MWh for 14 hours since MRTU, all occurred during 2017 & 2018 (3 incidents for 2017 and 11 for 2018) with the highest price at $999.98/MWh.
[3] DMM 2018 Annual Report, at 152 -160. DMM Third Quarter Report 2018, at 81. DMM 2017 Annual Report, at 153. DMM Third Quarter Report 2017, at 16. The CAISO market performance and planning forum, July 2017, at 26.
[4] See, for example, the CAISO presentation, at 22-33, available at http://www.caiso.com/Documents/Agenda-Presentation_MarketPerformance-PlanningForum-Jul18_2017.pdf; the DMM 2017 Annual Report, at 1, 73-74, available at http://www.caiso.com/Documents/2017AnnualReportonMarketIssuesandPerformance.pdf.
[5] The Analysis, at 3, "[t]he CAISO drew its conclusion that 55 hours were structurally uncompetitive in 2018 based on a scenario using supply and demand inputs".

virtual bids[6]. Further, it appears that the Analysis included only virtual supply bids (bidding up to $1000/MWh), but no virtual demand bids. With such asymmetric treatment alone, the results can be skewed and misleading.

Fundamentally, the residual supply index (RSI) test evaluates structural market power based on *available* residual supply in the system. In this context, virtual bids should not be considered as *available* supply, simply because they do not provide physical power[7]. A system that is uncompetitive based on physical supply, will be uncompetitive regardless of the activity of virtual bidding – an example further demonstrating this point is provided at the end of the comments. Therefore, it is incorrect to conclude there were *55* uncompetitive hours in 2018; instead, the Analysis has shown the number of uncompetitive hours is in the range of *200* to *600* hours.

3. It's unjust and unreasonable to not mitigate the market power when market power is found to exist

Both the DMM and the CAISO have independently found that there is structural system market power. Despite the difference in the number of uncompetitive hours, both analyses support each other in terms of the finding that market power exists at the system level based on the latest data (i.e., 2018 data). It's unjust and unreasonable to not mitigate the system market power that's identified. The potential financial impact of not mitigating can be in the range of billions of dollars[8].

There are factors that can exacerbate the system market power issue, such as anticipated resource retirements including roughly 5,000MW of OTC units by the end of next year, and other factors listed below, none of which received consideration in the CAISO study:

- Requirements of physical supply to meet flexible ramping product needs
- A load condition corresponding to higher-than-average weather year
- Unavailability of excess supply in generation pockets due to congestion (which has similar effects as a generation outage in calculating RSI)

The CAISO should start to develop a system market power mitigation mechanism. If the CAISO does not take any steps in developing its policies in this area today, there is a significant risk to California consumers when system market power exists today and in the future, given that a significant amount of time will likely be required to develop and work out details thereof for a system market power mitigation mechanism.

[6] The Analysis, at 24, excluding net buyers. When net buyers are included, there are only a few hours in the year when the system was competitive.

[7] Even though some virtuals may be submitted to substitute the bids for otherwise physical plants in the day-ahead market timeframe, when those physical plants are included in the physical supply stack for the RSI calculation, there is no need to include the duplicative virtuals in the supply stack.

[8] With 55 uncompetitive hours, the impacted financial value can potentially be in the range of $2.5 billion (assuming 45,000MW load with $1,000/MWh price each of these hours); with 325 uncompetitive hours, it will be in the range of $13 billion (assuming 40,000MW load with $1,000/MWh price each of these hours).

4. Forward contracting is not a substitute for a system market power mitigation mechanism

The CAISO appears to suggest that load hedging practices, i.e. forward contracting by load serving entities (LSEs), can address the system market power issue[9]. While SCE appreciates the thought from the CAISO, reliance on LSE load hedging practices to address system market power is flawed for several reasons.

First, as mentioned above, the CAISO is obligated to ensure that its rates are just and reasonable regardless of load hedging practices.

Second, it's impractical to expect a competitive bilateral market when the CAISO's fundamental market is uncompetitive. A rational seller maximizes profit; if there is a system market power issue within the CAISO market that can yield higher return, the costs for bilateral contracting will simply rise, diminishing any attempt to transact at a competitive price. In addition, the reality is that there is significant uncertainty in the amount of load to be served in future years for LSEs with increasing load fragmentation, e.g., with the formation of Community Choice Aggregators (CCAs).

Third, load hedging in general is for hedging uncertainties, i.e., probabilistic events, such as higher demand with above-average weather or potential supply shortage related to fuel and forced outages. Practical load hedging is not intended to address the system market power issue, i.e., a deterministic event that is systemic.

Therefore, load hedging cannot replace a system market power mitigation mechanism. Rather, it speaks to the importance of the need for such mechanism.

5. Import cost verification cannot replace a system market power mitigation mechanism

The CAISO has recently launched a new initiative for Import Bid Cost Verification. While there is a need to cost verify imports bidding above $1,000/MWh as contemplated by the CAISO under the initiative, it cannot replace a system market power mitigation mechanism simply because a system market power can exist when suppliers bid below, at or above $1,000/MWh.

6. Summary

The CAISO should revise the conclusion of the Analysis by removing virtual bids from the physical supply stack because it's incorrect to include virtual bids in the supply stack to calculate an RSI. Instead, the Analysis has shown that the number of uncompetitive hours is in the range of *200* to *600* hours in 2018. Despite the difference in the number of uncompetitive hours, both the CAISO and the DMM have independently found that structural system market power exists. The market

[9] The Analysis, at. 4. The Presentation, at. 17.

has observed an increasing trend of price spikes and aggressive supply-side bidding during high load days. The anticipated OTC unit retirements can potentially exacerbate the issue. Therefore, the CAISO has an obligation to ensure its rates are just and reasonable. The CAISO should work with its stakeholders to address the system market power issue by developing and implementing a system market power mitigation mechanism. There is a great risk to California consumers if the CAISO does not take any steps to address the system market power issue identified by the CAISO's own analysis.

Attachment

An example illustrating the effects of including virtuals in the RSI calculation

Suppose there is a system with 10,000 MW physical demand. The total amount of physical supply is 15,000 MW. The total amount of physical supply from the three largest suppliers (S1, S2, and S3) is 6,000 MW, i.e., S1 + S2 + S3 = 6,000 MW. This leads to RSI3 less than 1 (i.e., 9,000 MW/10,000 MW); the system is uncompetitive. Without system market power mitigation, the three suppliers can jointly bid above their production costs up to the cap, $1,000/MWh, which will subsequently set the market clearing price.

Now suppose there is 1,500 MW virtual supply bid out there (for simplicity, consider no virtual demand bid). When the virtual bid is included in the supply stack, it will be concluded that the system is competitive because RSI3 is now greater than 1 (i.e., (9,000 MW + 1,500 MW)/10,000 MW). However, this conclusion is erroneous for the following reasons:

1) The real-time market will still rely on the physical supply. In other words, the real-time market cannot clear without any of the physical supply from the three largest suppliers. That is, the RSI3 remains less than 1 and the system is uncompetitive. For example, if the three largest suppliers bid at $999/MWh, then the real-time market will clear at $999/MWh. It seems obvious that the real-time market experiences uncompetitive periods regardless of the virtual bidding. Further, in addition to the uncompetitive real-time market, given the general expectation of price convergence between the day-ahead and the real-time markets, the day-ahead market price will rise and become uncompetitive.

2) The only possible way for the virtual supply to stay profitable is to bid a price higher than the expected real-time market clearing price. Under this example, when the real-time market clears at $999/MWh, the virtual bidder would increase its price to $1,000/MWh. It's clear then that virtual bidding does not make the day-ahead market more competitive, i.e., relying on virtual bidding to address supply concentration generally doesn't work. Instead, the role of virtual bidding is the potential for price convergence between the day-ahead and the real-time markets when both markets are liquid.

This example clearly demonstrates that it's inappropriate to include virtual supply bids in the RSI calculation since doing so will lead to false conclusions about market competitiveness.