

System Market Power Analysis – Work Shop



Stakeholder Comments Template System Market Power Analysis – Work Shop

This template has been created for submission of stakeholder comments on the System-Level Market Power Analysis - Workshop that was held on July 15, 2019. The workshop, stakeholder meeting presentations, and other information related to this initiative may be found on the initiative webpage at:

<http://www.caiso.com/informed/Pages/MeetingsEvents/MiscellaneousStakeholderMeetings/Default.aspx>

Upon completion of this template, please submit it to initiativecomments@caiso.com.

Submissions are requested by close of business on **August 5, 2019**.

Submitted by	Organization	Date Submitted
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Please provide your organization’s comments on the following issues and questions.

Overall Comments:

SCE appreciates the CAISO’s effort of looking into the issue of system market power. Both the CAISO and the DMM’s analyses have confirmed that there were over 250 hours in 2018 when the market was structurally uncompetitive¹. The structurally uncompetitive periods are expected to continue as California supply conditions are tight and will continue to get tighter². As such, the CAISO should launch an effort to develop a system market power mitigation mechanism immediately.

- An uncompetitive market can lead to significant/catastrophic financial harm to consumers, a risk that cannot be over-emphasized

There was a material risk with the structural un-competitiveness in the last two years. For instance, in addition to the number of uncompetitive hours being studied, it was shown that the market implied heat rate trended up over the last few years with an estimate of excess rents of \$230 million for 2017 & 2018³. The DMM 2018 Annual Report also shows a substantial increase in

¹ I.e., DMM has found 272 hours (excluding virtual bids) and CAISO found 251 hours (with net virtual supply bids) respectively in 2018 when the market was structurally uncompetitive. DMM previously reported hundreds of structurally uncompetitive hours for 2017.

² *Assigned Commissioner and Administrative Law Judge’s Ruling Initiative Procurement Track and Seeking Comment on Potential Reliability Issues*, issued June 20, 2019 in Rulemaking 16-02-007.

³ PG&E presentation, dated July 15, 2019, slide 3. Available at <http://www.caiso.com/Documents/PG-EPresentation-System-LevelMarketPowerWorkingGroup-Jul15-2019.pdf>

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the price-cost markup from 2017 to 2018 (even with 2018 loads being lower)⁴. As a hypothetical example, market costs can hit \$1 billion when the price reaches \$1,000/MWh for every 20 hours (or for every 10 hours when the price reaches \$2,000/MWh)⁵.

The risk is expected to continue for coming years with tighter supply conditions. To mitigate the risk and ensure market competitiveness, the CAISO must have a system market power mitigation mechanism in place for those uncompetitive conditions.

- **Relying on bilateral contracting to address system market power is problematic**

During the workshop, the CAISO staff appeared to put a lot of weight on load serving entities' procurement and hedging as a measure to address the system market power issue. As commented by PG&E, many forward hedges will not mitigate the incentives for generators to exercise market power⁶. While in theory certain bilateral contracting (such as a tolling agreement or fixed-price forward energy contract) could change supply concentration in the market, relying on bilateral contracting practices to address system market power is problematic and may not ultimately solve the problem. There are two primary reasons for this. First, uncertainties around load migration make long-term forward energy contracting less practical. Second, when the fundamental market becomes structurally uncompetitive, it will have a detrimental effect on bilateral contracting.

Currently with the rapid growth of CCAs (e.g. as of April 2019, there are over 40 CCAs with 19 of them operational⁷), it creates uncertainties as a significant amount of load migrates from IOUs to another retail provider. It's unrealistic to base an energy market design on the premise of traditional IOU contracting practices (such as the use of tolling agreements). Even if long-term energy contracts exist between LSEs and physical generators, under this dynamic, long-term forward energy contracting could turn an LSE from a net buyer to a net seller when it loses load. This can result in two problems. First, the remaining customer base that has not migrated is left with paying for the entirety of the contracts procured by the LSE. While the LSE can attempt to sell those contracts, there will likely be gains and losses from such events. While those gains and losses would have occurred over time without load migration, the cost of the hedge would have been borne by the entire load it was intended to serve rather than a subset. Second, there is no reason to believe that an LSE that finds themselves in a long position, unless regulated otherwise, would

⁴ 2018 Annual Report, at 156-157, available at

<http://www.caiso.com/Documents/2018AnnualReportonMarketIssuesandPerformance.pdf>

⁵ Consider the cost to energy and A/S and assume the load is 47,200MW on average: \$1,000/MWh * 47,200MW * 1.06 * 20 hour = \$1 billion; \$2,000/MWh * 47,200MW * 1.06 * 10 hour = \$1 billion.

⁶ PG&E Comments on System Market Power Analysis, at 4, available at

<http://www.caiso.com/Documents/PG&EComments-SystemMarketPowerAnalysis.pdf>

⁷ See for example, <https://cleanpowerexchange.org/california-community-choice/>; <https://leanenergyus.org/cc-by-state/california/>.

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not attempt to maximize profits from their portfolio. If market conditions present those LSEs the opportunity to gain from inflating their offer prices due to an uncompetitive CAISO market, one should expect that the unregulated LSE would have every bit the incentive that an unregulated generator would have.

As California experienced during the 2000-2001 energy crisis, the non-competitive nature of the spot energy market was not truly addressed by the contracting performed by the California Department of Water Resources. Rather, it was the implementation of new rules at the FERC and revisions to the CAISO market design, including local market power mitigation, that finally led to a rational market. When the fundamental CAISO market becomes structurally uncompetitive, such contracting can be difficult because a rational seller would likely either significantly increase the contract price or take advantage of an uncompetitive market condition⁸.

- **Scarcity does not obviate the need for system market power mitigation**

As observed by stakeholders, there were no “scarcity events” for the day-ahead market in 2018 while those uncompetitive hours occurred. As the supply becomes tighter, thus more concentrated/pivotal as indicated in the CAISO and DMM analyses (measured as RSI 3 value), those conditions speak for, rather than obviate, the need for market power mitigation.

It’s false to claim that there should be no market power mitigation under scarcity conditions in order to attract additional supply. Such a claim ignores the fact that the interests of consumers should, and must, be protected during those conditions. Indeed, market power mitigation would protect both consumers and suppliers because it ensures a reasonable clearing price and prevents potential wrongdoings such as “price gouging”.

Also, it’s a false claim that market power mitigation is not needed at the system level because imports with a presumed “low barrier” will force competitive outcomes for California. Even during periods when the interties between the CAISO and neighboring balancing authority areas are unconstrained, the imports into the CAISO balancing authority area (BAA) can be limited, for example, when there is a west-wide heat wave. As observed by stakeholders, other western U.S. states are beginning to aggressively pursue their own renewable and carbon reduction goals, which can reduce the amount of potential excess generating capacity to supply California. Different from internal resources, imports also need to purchase and secure transmission rights in order to deliver the energy.

Even if it’s true that there will be additional imports under scarcity conditions due to the “low barrier to entry”, that additional supply would be fully recognized and treated appropriately under

⁸ This reminds the cases of the expensive CDWR contracts in the last decade.

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a system market power mitigation mechanism (i.e., when the additional imports are sufficient so that the test results in a pass, there would be no mitigation; only when the test fails would the mitigation mechanism be triggered).

SCE agrees that significant discussion and examination of how imports should be treated within a market power mitigation mechanism are needed. SCE agrees that issues like mega-watt laundering under such a mechanism will need to be considered as well as the ability to attract energy when needed for reliability. While this discussion will not have simple answers, that fact alone is insufficient to conclude that no system market power mitigation is necessary.

- **Because a DEB ensures competitive compensation, plus a reasonable return, the benefits of system market power mitigation significantly outweigh any potential drawback**

The CAISO has made significant progress in calculating a resource's DEB⁹. Currently a DEB includes a 10% adder which means that even a resource setting the price at their own DEB would earn a return on the dispatch. Ideas have been presented during the workshop on how to define DEBs for imports¹⁰. Details on the DEB calculation for imports should be further discussed when the CAISO starts an initiative dedicated to the development of a system market power mitigation mechanism.

When a DEB is appropriately calculated, it allows the resource full compensation at the resource's marginal cost, including opportunity costs, plus a reasonable return. For a resource that is infra-marginal, the resource is compensated at its cost plus the difference between the clearing price and its bid price. A system market power mitigation mechanism would never mitigate a resource below its DEB.

1. Resource adequacy provisions and bilateral capacity contracting

Please provide your organization's feedback on the *resource adequacy provisions and bilateral capacity contracting* topic. Please explain your rationale and include examples if applicable.

In addition to its Overall Comments above, SCE notes that: 1) the RA program is generally a capacity program and as such, does not address system market power for energy; and, 2) similarly, bilateral capacity contracting does not address system market power for energy as those contracts typically do not change the ownership structure in the market or dictate how

⁹ E.g., the Local Market Power Mitigation Enhancements and new DEB option for hydro, the Commitment Costs and Default Energy Bid Enhancements Initiative and gas price updates, and the Commitment Cost Enhancements and opportunity cost calculation tool.

¹⁰ PG&E Presentation, at 7-9; CAISO Presentation, at 22-24, available at

<http://www.caiso.com/Documents/Presentation-SystemLevelMarketPowerWorkingGroup-Jul15-2019.pdf>.

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physical resources bid energy to the CAISO market, as a result neither would materially change the concentration of supply for energy.

2. Load-serving entity energy procurement and hedging

Please provide your organization's feedback on the *load-serving entity energy procurement and hedging* topic. Please explain your rationale and include examples if applicable.

As stated above, many forward hedges (e.g. financial products traded on centralized exchanges and transacted over the counter) will not mitigate the incentives for physical generators to exercise market power. Even with long-term tolling agreements, there is no guarantee that this type of contract would mitigate system market power going forward. As the following example demonstrates, long-term tolling agreements could very well add to the problem of system market power.

Suppose an LSE's load is X MW for year one. The LSE signs multi-year tolling agreements to cover all X MW of its load seen at year one. However, the load undergoes migration which is not in its control. Suppose in year 3, a significant amount of load departs and the amount of load being served by the entity is a small amount compared to X. At this point, this entity essentially becomes a net seller for the remainder of the contract period. This situation adds to the issue of system market power.¹¹

As discussed above, the California Energy Crisis demonstrated that long-term contracting in a market with market power concerns may stabilize prices but will do so at a high cost through the contract. Thus, the market power is simply transferred from the spot market to the bilateral market. SCE believes that it is not sufficient to rely on LSE energy procurement and hedging (such as traditional IOU tolling agreements) to address the structural uncompetitiveness of the fundamental energy market.

3. System-level market power mitigation process

Please provide your organization's feedback on the *system-level market power mitigation process* topic. Please explain your rationale and include examples if applicable.

SCE appreciates the CAISO's initial thoughts on the system-level market power mitigation process as laid out in its presentation¹². SCE agrees with the CAISO it will likely be a significant effort to develop and implement a system-level market power mitigation process. For this same reason, SCE respectfully requests that the CAISO starts a stakeholder initiative immediately to allow the details to be worked out and allow time for implementation at least prior to the next summer. As commented above, the risk of a structural uncompetitive market cannot be over-emphasized. Having a market design mechanism in place to ensure market competitiveness should be a high priority for the CAISO and its stakeholders.

¹¹ SCE believes that an LSE in a long position will likely attempt to liquidate their long position by selling off the contract to another entity. However, this does not change the fact that while the LSE (e.g. an unregulated LSE) holds a long position and when they can liquidate that position, they will be faced with market incentives in bidding the energy from certain contractual arrangements.

¹² CAISO Presentation, at 20 – 25.

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- **Local market power mitigation (LMPM) does not function when the market is structurally uncompetitive**

As explained by the DMM, the local market power mitigation mechanism, which is the only market power mitigation mechanism that dynamically assesses market power in the CAISO markets, is based on the explicit assumption that the system marginal energy component (SMEC) is competitive¹³. Hence, the LMPM does not function when the market is uncompetitive on the system level. To ensure the LMPM functions appropriately, the CAISO must ensure the market is structurally competitive at the system level. When the market is structurally uncompetitive as demonstrated by the CAISO and DMM analyses, a system-level market power mitigation process must be developed and implemented.

- **A BAA-level system market power mitigation mechanism already exists for EIM Entities**

As part of the EIM design, a binding EIM transfer, in the import direction, will trigger the three-pivotal supplier test and market power mitigation for the entire EIM BAA, i.e., a BAA-level system market power mitigation already exists today in the CAISO markets.

Because the EIM-BAA level market power mitigation operates under the LMPM framework, it is also based on the explicit assumption that the entire market footprint is competitive.

- **While both CAISO and PG&E offered preliminary discussion on import DEB, the issue should be further explored**

The CAISO has provided a preliminary approach to calculate a DEB for imports based on the DEB option recently developed for hydro resources with storage capability. In particular, the DEB would have three components: Gas floor (based on a peak plant heat rate times gas price index with 10% adder), short-term component (maximum of day-ahead, balance-of-month and month ahead price indices times a multiplier), and long-term/geographical component (maximum of short-term component and multiple month ahead price indices with 10% adder)¹⁴. Similarly, PG&E's approach would be the maximum of the shaped trading hub price (i.e. to convert a block price to hourly prices including transmission rate) and 75th percentile of historical LMPs at the intertie.

In addition, SCE believes that it is worth discussing the potential to not mitigate import prices and instead develop rules regarding the export of power, particularly from RA resources, out of California. This coupled with the current discussions regarding what is necessary to ensure that import RA is available for use by the CAISO to maintain reliability could provide sufficient mitigation while ensuring reliability. As mentioned in SCE's opening comments, such a mechanism would need to pay particular attention to the ability of resources to participate in

¹³ DMM Presentation, at 2 – 4, available at <http://www.aiso.com/Documents/DMMPresentation-System-LevelMarketPowerWorkingGroup-Jul15-2019.pdf>

¹⁴ CAISO Presentation, at 24.

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mega-watt laundering. This may require new rules or additional monitoring to detect and refer to the FERC if necessary.

SCE believes that each of these approaches are worthy of further discussion. The CAISO's approach appears to be built on existing policy discussions around hydro resources, and thus provides for opportunity costs that may be unique to hydro resources. PG&E's approach appears more dynamic and straightforward. Each of the first two approaches assume that trading hub future price indices are competitive in calculating a DEB – an assumption that may need to be further examined (e.g. develop additional measures to filter out illiquid periods or locations), while the third approach avoids determining a DEB for imports while placing appropriate restrictions to avoid gaming.

The CAISO also posed a question regarding whether a system-level mitigation should only apply when the CAISO BAA is import constrained. SCE believes that a system-level market power can exist, such as when the three-pivotal supplier test fails, regardless of congestion. Even if the CAISO BAA interties are not constrained (i.e. no congestion), imports into the CAISO BAA can be constrained for other reasons, for example, when there is a heat wave across the west. Further, since the amount of imports would be included in the three-pivotal supplier test, to the extent that the imports are sufficient to address system market power, it will be fully recognized by the test (i.e., when the additional imports are sufficient so that the test outcome is passed, there would be no mitigation; only when the test fails, would the mitigation be triggered).

To some degree, a system-level market power mitigation design should differentiate RA imports and non-RA imports. RA imports receive RA credit and have firm commitment to serve CAISO load when needed (e.g. firm energy, transmission and reserve requirements). Non-RA imports do not have the same level of commitment and are not subject to a similar must offer obligation as RA imports. SCE believes these differences should be considered in the design¹⁵.

One option is to identify the scheduling coordinator of an import and include the import in its portfolio, i.e. a participant's portfolio can include internal supply and import resources when applicable and the participant can be a supplier or buyer. Then perform the RSI3 test based on this and mitigate bids only when the RSI3 test fails¹⁶.

As stated above, when the system market power mitigation is necessary following a failure of the RSI3 test, there is a potential that mitigating imports may not be necessary if the rules around RA import are evolved such that RA imports would participate in the CAISO market with additional clarified rules and possible restrictions. Currently the CPUC is evaluating the rules in this area¹⁷. In particular, if these rules are established, mitigating imports may not be necessary. In its comments on the CPUC ACR regarding this matter, SCE proposed that restrictions on the bidding of import RA could be implemented. These could consist of

¹⁵ Also see slide 7, SCE Presentation, available at <http://www.caiso.com/Documents/SCEPresentation-System-LevelMarketPowerWorkingGroup-Jul15-2019.pdf>.

¹⁶ During this process, intertie capacity may be considered if it's known that there are more imports bidding into the market than the transmission capacity could support. This will add complexity to the process. Whether this is needed depending on the magnitude of the underlying problem and how it would affect the accuracy of the test.

¹⁷ CPUC ACR Ruling Seeking Comment on Clarification to Resource Adequacy Import Rules, R. 17-09-020, July 3, 2019.

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elements such as a least cost dispatch bidding requirement or when the LSE is not the Scheduling Coordinator (SC) for the resource, there could be a specification of a strike price in the contract that the resource cannot bid above (e.g. \$500/MWh)¹⁸. Under either situation, there would be an appropriate mechanism in place to ensure appropriate RA import bidding that would mitigate market power from import RA resources.

With these mechanisms, it may be sufficient to provide appropriate incentives for RA imports to participate the CAISO market without the need to mitigate imports. To the extent there is still a need to mitigate import resources, there can be two scenarios: 1) the mitigation is only applied to RA imports given its firm commitment to serve CAISO load when needed, and 2) the mitigation applies to all imports (RA & non-RA) to an appropriate level of the DEB for the import that captures opportunity costs it may incur outside the CAISO. SCE believes further details, including pros and cons of each option, should be worked out in a stakeholder initiative dedicated to the development of a system market power mitigation process.

4. Enhanced ISO market scarcity pricing provisions

Please provide your organization's feedback on the *enhanced ISO market scarcity pricing provisions* topic. Please explain your rationale and include examples if applicable.

As stated above, scarcity does not obviate the need for a market power mitigation mechanism but rather speaks to the importance of market power mitigation. Market power can exist with or without a scarcity event.

As observed by stakeholders, there were no scarcity events for the day-ahead market in 2018. Even with a more "enhanced" ISO market scarcity pricing than what exists currently, the scarcity pricing only addresses true scarcity events, while the CAISO and DMM have found there were over 200 hours when the market was structurally uncompetitive in 2018, i.e., it's hard to imagine all those hours represent scarcity conditions.

5. Optional comments on stakeholder-presented topics

On WPTF Presentation:

SCE appreciates WPTF's thoughts on this important subject. In addition to the opening comments above covering various topics, SCE does not agree that "conditions necessary to exert market [power] have not been shown to exist" as stated in the WPTF presentation¹⁹. Contrary to WPTF's statement, the CAISO has shown a near-perfect correlation between the reserve margin (supply/demand) and the uncompetitive index (i.e. RSI 3 failures) based on

¹⁸ SCE Opening Comments, July 19, 2019, SCE Reply Comments, July 26, 2019, and Public Advocates Office Reply Comments, July 26, 2019, on CPUC ACR Ruling Seeking Comment on Clarification to Resource Adequacy Import Rules.

¹⁹ WPTF Presentation, at 6, available at <http://www.caiso.com/Documents/WPTFPresentation-System-LevelMarketPowerWorkingGroup-Jul15-2019.pdf>. In particular, the presentation lists these conditions being 1) predictable and persistent conditions, and 2) timely information to identify forthcoming uncompetitive conditions.

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empirical data²⁰. The CAISO also explained the calculation of the reserve margin and much of the calculation can be based on public information (e.g. weather & load forecast, generation outage information etc.).

6. Additional comments

Please offer any other feedback your organization would like to provide on the topics discussed during the workshop.

In summary, SCE respectfully requests that the CAISO launch an effort to develop a system market power mitigation mechanism. As this process would take time, the CAISO should start this effort immediately for a target implementation date at least prior to the next summer. In the meantime, the CAISO should be open to other temporary measures should conditions warrant.

²⁰ The CAISO Presentation, at 8.