

**Comments of Powerex Corp. on
System Market Power Mitigation
Straw Proposal**

Submitted by	Company	Date Submitted
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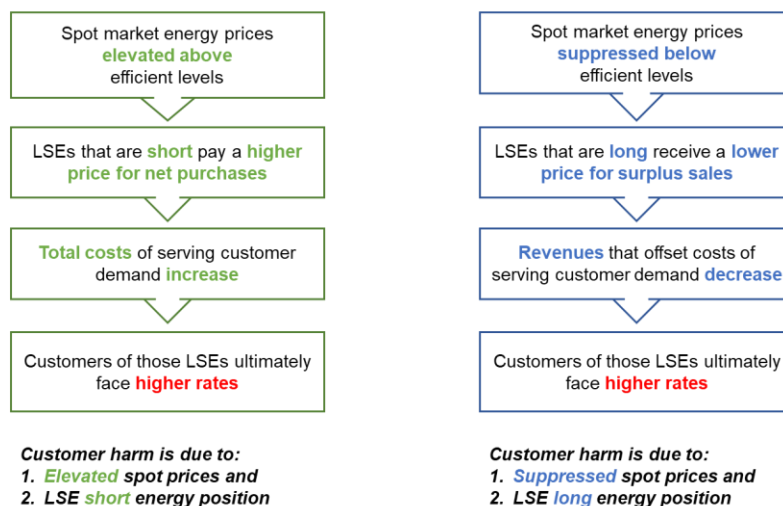
Powerex appreciates the opportunity to provide these comments on the CAISO’s December 11, 2019 *System Market Power Mitigation Straw Proposal* (“Straw Proposal”).

Powerex strongly supports the pursuit of market designs that produce accurate and efficient prices across all hours. Efficient prices promote and reflect the optimal dispatch of available resources, accurately signal the need for participation of additional supply or reductions in consumption, and provide investment incentives for resources to be available when and where they are most valuable to the grid. “Getting prices right” is arguably the single most important priority of market design.

In real-world application, there are numerous factors that can cause market-clearing prices to depart from efficient outcomes. This is true even in well-established markets operating under rules that have been approved FERC. When market prices depart from efficient, workably competitive levels, not only are participation and investment incentives weakened, but consumers may ultimately be harmed. For example, if short-term wholesale market prices become elevated well above efficient, workably competitive levels, consumers of load-serving entities that are net purchasers in these markets may ultimately bear substantial financial consequences. Powerex understands this is precisely the concern of California load-serving entities (and other advocates for California consumers) that has led to this stakeholder process.

It is important to recognize, however, that other consumers in the West can similarly experience significant harm when prices are inefficiently *low*, as many other consumers in the West are served by entities that are net sellers in the CAISO short-term wholesale electricity markets, particularly retail customers of Pacific Northwest hydro entities. Thus, in the context of the multi-state CAISO real-time market, it is both merchant generators (both inside and outside California) **as well as consumers of entities in other regions** that can experience significant harm from inefficiently low prices.

Customers are harmed when spot market energy prices are distorted **above or **below** efficient levels:**



Powerex continues to be concerned with the fact that the narrow—and prospective—price formation concerns associated with the potential for seller system market power is being prioritized over other, existing and thus more pressing, price formation topics. To be clear, it is entirely reasonable and expected for California load-serving entities to raise price formation issues of greatest concern to *them* and to *their* customers, such as the potential for CAISO market prices to become elevated above efficient and workably competitive levels. Arguably, it may also have been understandable for CAISO to have preferentially prioritized those stakeholder topics of greatest importance to California load-serving entities when CAISO was the market operator for a single state market. But Powerex finds it troubling—in the context of the CAISO as the market operator for a multi-state real-time market—that significant CAISO, DMM, MSC and stakeholder resources are being preferentially diverted to examining the price formation concerns raised by California load-serving entities, as they have been over the past year. Moreover, despite careful analyses by CAISO and DMM showing that there is no evidence that any seller system market power materially or frequently exists today in CAISO markets, and no evidence that it is having any material effect on market prices currently,¹ this topic has nevertheless now been preferentially set for a formal stakeholder process.

¹ See, e.g., **CAISO Analysis of Structural System-Level Competitiveness in the CAISO Balancing Authority Area** (September 3, 2019), at 3 (concluding that the CAISO BAA “was likely structurally uncompetitive in 201 hours in 2018” and noting that “this analysis did not examine whether suppliers actually exerted market power to raise the energy prices above marginal costs”); **CAISO DMM Q3 Report on Market Issues and Performance** (December 5, 2019), at 106 (“Analysis by DMM indicates that in the last few years system market power has had a limited effect on market prices even during the limited number of hours when the ISO system was structurally uncompetitive. In 2019, market prices have continued to be relatively low and stable due to a combination of favorable market and system conditions.”); and **CAISO Market Surveillance Committee Opinion on System Market Power Mitigation** (Final version adopted November 5, 2019), at 3 (“We take from these analyses that pivotal supplier tests indicate that there might have been some limited potential for market power at the system level, but, according to analyses of prices and costs that have been carried out to date, this market power has not been exploited very frequently or aggressively.”)

All of this has occurred while multiple other stakeholders—including those with different customers and different interests in other regions—have repeatedly identified other price formation issues that are currently resulting in inefficiently low prices that are causing real harm to *their* ratepayers. More specifically, there is mounting evidence that CAISO market prices are frequently and materially suppressed below efficient and workably competitive levels as a result of: (1) pervasive out-of-market supply procurement for the CAISO BAA; (2) very large and systemic load biasing in the morning and evening peak periods in the CAISO BAA; and (3) extensive and growing side payments to fossil fuel units across the CAISO day ahead and real-time markets. Thus, price formation challenges that are currently causing *actual and material* harm to ratepayers in regions outside California today—day after day—are not being addressed, or even examined. Powerex continues to oppose a stakeholder process limited to examining the narrow and prospective price formation topic of system market power. Powerex urges the CAISO to instead commence a broader price formation stakeholder process where all current and prospective price formation issues, including system market power, can be examined and appropriate market enhancements can be developed.

Notwithstanding the significant prioritization concerns raised by the focus on the seller system market power topic over the past year, and the accelerated commencement of this stakeholder process, Powerex reiterates its commitment and support for ensuring that prices in the CAISO markets are accurate and efficient, including ensuring that prices are not inefficiently distorted by the exercise of market power. Powerex also wishes to emphasize that it greatly appreciates the efforts of CAISO staff to put forward a measured and balanced Straw Proposal, which Powerex largely supports in concept, as discussed further below.

I. Powerex Largely Supports The Straw Proposal’s Conceptual Framework

Powerex believes that the primary driver of efficient market outcomes is competition among and between suppliers of energy, capacity, and flexibility in the CAISO markets. By encouraging maximum participation, the CAISO markets can continue to experience structurally competitive supply conditions in the vast majority of hours. System market power mitigation procedures can therefore be viewed as having at least two objectives:

1. Limit the ability of sellers with market power to raise prices significantly above efficient and workably competitive levels; and
2. Achieve the above while maintaining strong incentives that encourage continued and expanded supply participation in the CAISO markets.

Powerex believes that carefully crafted measures can provide a very substantial degree of protection from excessively high prices (objective 1, above) –with minimal risk of discouraging participation in the CAISO markets (objective 2, above). Finding this balance requires recognizing the significant inaccuracy inherent in any simplified or formulaic estimate of a resource’s marginal costs—particularly for resources with significant opportunity costs—as well as recognizing the unavoidable inaccuracy in the “triggers” for the application of bid mitigation procedures.

Powerex largely supports the key concepts and framework of the Straw Proposal. In particular, the Straw Proposal delineates the specific conditions in which system-level market power may be

a concern in the CAISO BAA, and seeks to limit interventions only to the extent needed to address those conditions. While significant additional technical details still need to be developed, at this point Powerex offers comments on the conceptual approach in the following sections.

II. Enhancements To Key Design Principles Are Needed To Avoid Mitigating Below Efficient Levels

The Straw Proposal sets forth four principles for the design of market power mitigation.² Powerex believes two important refinements are needed.

1. Design Principles Must Recognize That Energy Prices Must Rise Above The Marginal Cost Of The Highest Cost Unit During Scarcity Or Shortage Conditions

The first principle states that “Energy prices should reflect the marginal cost of the highest cost resource used to meet demand.” As stated, however, this principle ignores that, **during scarcity conditions, efficient prices must rise above the marginal cost of the highest cost unit** used to meet demand. When supply is constrained, the price of energy must reflect the social cost of reduced operating reserves, and the associated reliability risk of doing so. A framework that limits energy prices only to the “marginal cost of the highest cost unit” that is dispatched will thwart efficient pricing during scarcity or shortage conditions.

Powerex believes the Straw Proposal’s first design principle should be revised to read as follows:

Energy prices should reflect the marginal cost of the highest cost resource used to meet demand, or the social cost of scarcity or reserve shortage, whichever is greater. Energy prices should be competitive across the region when energy transactions are not limited by transmission capability.

2. Additional Principle Needed That Mitigation Should Not Result In Energy Prices Below Efficient Levels

The Straw Proposal’s second design principle is that a “supplier should not be forced to sell power below its offer price if it cannot exert market power.” Powerex supports this principle, since a seller that lacks market power will generally have an incentive to offer its supply at a price that reflects its own evaluation of its marginal cost (including opportunity costs). Mitigation below offer prices would therefore result in forced sales below such sellers’ estimates of their respective marginal costs, which is both inequitable and a strong deterrent to participation in the first place.³

Powerex notes that the potential for over-mitigation is not limited to mitigation below an individual seller’s offer price; over-mitigation occurs any time that the market-clearing price is reduced below efficient levels as a result of mitigation. Consider an example in which mitigation results in a market-clearing price of \$80/MWh, which may be equal to, or even greater than, the marginal cost

² Straw Proposal at 7.

³ The second principle of the Straw Proposal goes on to state that “Supply offers should be mitigated to marginal costs to the extent supply has market power.” Thus, the Straw Proposal appears to recognize that even supply with market power should not be mitigated below marginal cost.

of a given marginal resource in the applicable dispatch. If, in the same interval, CAISO operators were procuring energy out-of-market at a price of \$100/MWh, it is clear that the mitigated market-clearing price is inefficiently low, as it does not reflect the incremental cost of serving demand.

An additional principle therefore is necessary as a corollary to the Straw Proposal's first principle:

Mitigation should not result in market-clearing prices that are less than the efficient short-term price of energy, including procurement activities and costs that are incurred out-of-market.

III. The Competitive Proxy Price Must Be Retained As Vital Protection Against Over-Mitigation

The Straw Proposal contemplates eliminating the use of the "competitive locational marginal price" when system market power mitigation is triggered.⁴ Thus, each resource will be mitigated to its Default Energy Bid ("DEB") when system market power mitigation is triggered. The market-clearing price, in turn, will be based on the highest DEB of the units dispatched through the optimization software.

Powerex believes such an approach will lead to systematic over-mitigation, and resulting short-term energy prices below efficient levels for several reasons, including:

1. A resource's DEB represents only the variable energy component of production, and thus ignores start-up and no-load costs. These commitment costs can represent a significant portion of the cost of meeting demand, particularly during the morning and evening peak hours.
2. The DEB of the marginal resource dispatched in the FMM or RTD may be below the cost of supply procured out-of-market or through operator actions in the HASP or earlier timeframes.
3. The DEB of the marginal resource dispatched in the FMM or RTD will fail to reflect scarcity or shortage conditions due to either capacity limitations or flexibility limitations.

Stated differently, the Straw Proposal's approach would be appropriate only when all of the following conditions are met:

1. There is sufficient supply to meet demand while maintaining all necessary operating reserves;
2. Meeting demand did not require any commitment of fast-start units with start-up or no-load costs that are not recovered under their default energy bid; and
3. All supply is procured through the real-time market optimization without any manual operator actions.

⁴ Straw Proposal at 34.

Powerex believes that many—or perhaps all—of the hours in which system market power mitigation may be triggered are likely to experience one or more of the circumstances described above (*i.e.*, scarcity; out-of-market procurement; commitment of peaking units with bid cost recovery side payments; and/or other out-of-market actions, procurement and/or costs). In such cases, prices based exclusively on the default energy bid of resources dispatched through the market software are likely to be below, and potentially well below, efficient levels, which would violate the design principle discussed in Section II.2, above.

To prevent the inefficient suppression of market-clearing prices, Powerex urges the CAISO to revise and retain the concept of a “competitive locational marginal price” as a floor to mitigated offer prices. This concept will need to be materially different from the use of a competitive LMP under the existing local market power mitigation procedures, which is based on supply offers from locations that are deemed competitive, and hence has no direct analog under conditions of system-level market power. Rather, a competitive proxy price should be calculated when system market power mitigation is triggered, ***and would be equal to the maximum of:***

1. The price paid for any out-of-market procurement of energy undertaken for system (rather than local) reasons. This should include all supply procured out-of-market—even if such procurement occurred prior to the real-time operational window—since all out-of-market supply reduces the quantity that is procured through the real-time optimization, and therefore inefficiently reduces real-time market-clearing prices.
2. The full cost of energy from peaking units committed in order to meet demand (including start-up, no-load, and incremental energy cost components). At a minimum, the full cost of committed units with a lead time of 60 minutes or less and a minimum run-time of 60 minutes or less should be reflected in the system-level competitive proxy price.
3. The estimated social cost associated with scarcity or shortages of operating reserves (including contingency reserves, regulation, or any other type of stand-by capacity ordinarily procured by CAISO operators to maintain reliable operation - either within the market or through out-of-market actions).

It is important to note that the proposed system-level competitive proxy price *cannot* be calculated solely from the output of the real-time market optimization. Rather, the proxy price is necessary precisely *because* the market optimization may not fully reflect the incremental cost of meeting demand. This will require CAISO to track all out-of-market activities and costs, as well as processes for incorporating these into the competitive LMP, for the purposes of both system level market power mitigation and local market power mitigation. This will also require CAISO to develop more robust procedures to objectively identify (and measure) scarcity or shortage conditions.

Powerex believes that supplementing the Straw Proposal’s conceptual approach in the manner described above can lead to a workable framework that provides substantial protection against the potential exercise of system-level market power in the CAISO BAA while minimizing the potential to discourage competitive supply participation or to inefficiently suppress market-clearing prices.