

## **Comments on CAISO's October 8, 2015 Reactive Power Requirements and Financial Compensation Revised Straw Proposal**

October 27, 2015

On October 8, 2015, the CAISO released the Revised Straw Proposal for the Reactive Power Requirements and Financial Compensation initiative<sup>1</sup>. The CAISO held a web conference on October 15, 2015<sup>2</sup> to discuss this initiative. The California Department of Water Resources State Water Project (CDWR) appreciates the opportunity to submit comments.

### Background:

The purpose of this initiative is to discuss how asynchronous generators can better provide reactive power to the CAISO energy market. As more and more synchronous generators (which provide reactive power capability) are being displaced by asynchronous generators that do not have this capability, the CAISO needs to decide how to best maintain acceptable levels of reactive power capability in the electrical system as it expands and under various operating scenarios. The CAISO has proposed replacing the current system impact study approach with a uniform minimum reactive power requirement for both asynchronous and synchronous generators.

The debate of this initiative is centered around asynchronous generators wanting to first get compensated for being able to meet minimum reactive power requirements (in the form of a capability payment for reactive power equipment investment) and secondly get compensated for providing reactive power above and beyond the minimum requirements (in the form of provisional payments). In the revised straw proposal, the CAISO has proposed that both asynchronous and synchronous generators provide a base level of reactive power at no cost to the CAISO (no capability payments). However, the CAISO would make provisional payments for additional reactive power that may be required outside of this base power factor range.

CDWR supports the concept of provisional payments, but not base level capability payments. This initiative has focused on which, when, where, and why asynchronous

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[http://www.aiso.com/Documents/RevisedStrawProposal\\_ReactivePowerRequirements\\_FinancialCompensation.pdf](http://www.aiso.com/Documents/RevisedStrawProposal_ReactivePowerRequirements_FinancialCompensation.pdf)

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[http://www.aiso.com/Documents/Agenda\\_Presentation\\_ReactivePowerRequirements\\_FinancialCompensationRevisedStrawProposal.pdf](http://www.aiso.com/Documents/Agenda_Presentation_ReactivePowerRequirements_FinancialCompensationRevisedStrawProposal.pdf)

## California Department of Water Resources State Water Project

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resources should or should not be paid for providing reactive power. However, an equally important topic to discuss is who should pay for the additional reactive power payments. Currently, the CAISO proposes to continue to allocate provisional reactive power payments to measured demand – loads and exports. CDWR believes this is unfair because it is discriminatory, irrational, and is largely a result of historical practices that are no longer applicable or appropriate in today's California energy market. CDWR asks the CAISO to more equitably allocate provisional reactive power payments.

Historically, reactive power and voltage control services were “built-in” and part of a synchronous generator's design, cost, construction, service, and maintenance. Reactive power was inseparable from the real power a synchronous generator produced. In California's old vertical energy markets, before the CAISO was formed, any reactive power cost was just part of being a generator and was passed on to the end customer, the load. The end customer had little choice but to pay. If additional reactive power was required above what the synchronous generators could provide, transmission assets were installed and the cost of this was again passed on to the end customer. This cost allocation practice was acceptable back then because the vertical markets were built and owned by utilities for the sole purpose of serving their end customers, the loads. There were no other owners or market participants. It was just the utilities and their customers. This cost allocation practice was unfortunately accepted with the formation of the CAISO.

With the formation of the CAISO a new collaboration between various market participants was created. Instead of the customer (the load) being the only reason for having an energy market, the customer is now one of four reasons for having an energy market. There are now four participants that make up the energy market. Each participant comes to the energy market with their own purpose and agenda: (1) loads want to buy energy at the lowest price; (2) generators want to sell energy at the highest price; (3) transmission owners want to charge the most for transporting the energy. Everyone wants a safe, reliable, and fair energy market. (4) The CAISO's supervisory and neutral role is to make sure everything runs efficiently, everything is balanced and reliable, and all three of its customers' needs are met fairly both now and in the future. Additionally, market participants should not be unjustly discriminated against or given preferential treatment. And, fundamentally, a certain level of “good utility practice” is expected from everyone. Because of its important and unique role, the CAISO must advocate fairness. The CAISO should not simply allocate reactive power payments to measured demand because that is what has been done in the past or because there is no strong support to change it. The CAISO should follow its own

# California Department of Water Resources State Water Project

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Cost Allocation Principles<sup>3</sup> to properly determine how best to allocate reactive power costs.

CDWR asks the CAISO to evaluate and explain in the next proposal why it is not following most of its own cost allocation principles as it pertains to reactive power. For example:

- **Causation** – “Costs will be charged to resources and/or market participants that benefit from and/or drive the costs.” Load alone is not the only driver for having enough reactive power in an energy system. Generators need a stable voltage to be able to produce their maximum output. Proper voltage support throughout the system allows energy to be transported. Load alone is not the only one receiving a benefit from having enough reactive power and a stable voltage.
- **Comparable Treatment** – “Similarly situated resources and/or market participants should receive similar allocation of costs and not be unduly discriminated against.” Load is being unduly discriminated against because it is the only one that has to pay for provisional reactive power payments. Other market participants should receive similar allocation.
- **Accurate Price Signals** – “The cost allocation design supports the economically efficient achievement of state and federal policy goals by providing accurate price signals from the ISO market. Economic efficiency is achieved through appropriate and accurate allocation of costs in the ISO market...”. CDWR does not dispute this principle.
- **Incentivizing Behavior** – “Profit maximization by market participants that are allocated costs should lead to lower costs incurred by the ISO market over a reasonable timeframe.” Having provisional reactive power payments allocated only to demand does not incentivize other market participants to reduce the need of having enough reactive power. On the contrary, the lack of allocation to other participants may incentivize bad behavior.
- **Manageable** – “Market participants should have the ability to manage exposure to the allocation... Allocating unmanageable costs does not provide market participants with the opportunity to minimize the cost drivers the cost allocation is intended to incent.” CDWR does not dispute this principle. Loads, to an extent, can manage their exposure to provisional reactive power payments by meeting minimum power factor requirements. However, as mentioned throughout the proposal, various other system conditions affect the amount of reactive power that is required. Therefore, loads alone cannot minimize provisional reactive power payments.

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<sup>3</sup> <http://www.caiso.com/Documents/DraftFinalProposal-CostAllocationGuidingPrinciples.pdf>

## California Department of Water Resources State Water Project

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- **Synchronized** – “The cost driver of the allocation should align as closely as possible to the selected billing determinant.” Reactive power cost allocation (MWh) is not synchronized with the cost driver (MVAR). Measured demand (MWh) is not the best cost driver. By the CAISO’s own admission, “there is no reasonable methodology for accurately identifying and subsequently allocating the costs to resources”. CDWR believes the CAISO’s reason to only allocate to measured demand is therefore irrational. How does the lack of an accurate allocation methodology justify allocating all reactive power provisional payments only to measured demand?
- **Rational** – “Implementation costs/complexity should not exceed the benefits that are intended to be achieved by allocating costs (e.g. it would be economically inefficient to mail a check/bill that is less than the cost of postage.” Based on CDWR’s review of its historical allocation of supplemental reactive power (CC 1303), these dollar amounts have been zero to minimal for the past five years. Also, the CAISO verbally stated in an MSC meeting on October 20, 2015, discussing this initiative, that reactive power payments made by the CAISO have been negligible. CDWR therefore understands that it is difficult to justify spending money upfront to re-allocate little to no provisional reactive power payments. However, the ethical value of fairness should not be overlooked in the rational principle. CDWR believes if the cost difference between making a cost allocation change versus not making a change is not that significant in the long run, but it is more ethical to make the change, then the change should be made. CDWR asks the CAISO to evaluate the long-term cost to allocate provisional reactive power payments to all participants and take into consideration fairness. CDWR suspects that in the long run the implementation costs of allocating provisional reactive power payments to all resources (loads, exports, generation, imports) versus continuing to only allocate to measured demand (load and exports) will not be that significant. Especially if this re-allocation cost is seen as an incremental cost to other changes that are being proposed in this initiative (creation of a new exceptional dispatch category and settlement mechanism). CDWR is not proposing at this point to allocate provisional reactive power payments to transmission owners because it would add a greater level of complexity and cost.

CDWR understands that the CAISO’s Cost Allocation Principles are just principles and are not hard set rules. However, based on the spirit of these principles and the universal importance of reactive power capability, CDWR feels that continuing to allocate provisional reactive power payments only to measured demand is irrational and discriminatory. CDWR asks the CAISO to equally consider this new allocation methodology as much as they are considering the new proposed settlement methodologies proposed in this initiative.