

**COMMENTS OF  
THE CALIFORNIA ENERGY STORAGE ALLIANCE:**

**Energy Storage and Distributed Energy Resources  
Second Revised Straw Proposal**

Submitted by	Company	Date Submitted
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The California Energy Storage Alliance (CESA)<sup>1</sup> offers these comments on the California Independent System Operator’s (CAISO) Energy Storage and Distributed Energy Resources Second Revised Straw Proposal.<sup>2</sup> This Working Group is part of the larger Energy Storage and Distributed Energy Resources Phase 2 (ESDER) initiative.

CESA broadly supports the ESDER initiative but focuses its comments on additional changes needed and on key changes noted in the Second Revised Straw.

**A. Negative Bid-Floor rules should be lowered to -\$300 or lower to accommodate the costs of PDR resources.**

Many PDRs may seek to sell services to the CAISO market. In some cases the costs of these services could exceed the limit currently established as the CAISO’s negative bid-floor. It would be unreasonable for the CAISO to prevent participation by prohibiting resources from reflecting their costs. The negative bid-floor should thus be lowered significantly, e.g. to \$-300/MWh or lower. For symmetry with the bid cap, the bid floor should be set at -\$1000/MWh.

Consider a PDR resource seeking to increase its load by 1 MW for an hour in response to CAISO dispatch. Such a resource would face a *retail* energy settlement of 1 MWh. Roughly assuming a retail rate of \$.25/kWh, such a resource would have actual costs of \$250/MWh.<sup>3</sup> These costs would be represented

<sup>1</sup>The views expressed in these Comments are those of CESA, and do not necessarily reflect the views of all of the individual CESA member companies. (<http://storagealliance.org>)

<sup>2</sup>“Energy Storage and Distributed Energy Resources Second Revised Straw Proposal”, CAISO, September 19, 2016. [http://www.caiso.com/Documents/SecondRevisedStrawProposal\\_EnergyStorage\\_DistributedEnergyResourcesPhase2.pdf](http://www.caiso.com/Documents/SecondRevisedStrawProposal_EnergyStorage_DistributedEnergyResourcesPhase2.pdf)

<sup>3</sup> It is reasonable to consider the timing of when retail energy users may need to increase energy consumption to support CAISO grid needs, e.g. during periods of over-generation. Under some retail rates, even *off-peak* periods can have high rates. As just one example, a PG&E TOU rate can have an off-peak rate of \$0.37400 cents/kWh if consuming over 200% of Baseline. Further, *on peak* rates, which may not reflect overgen conditions, can have costs of \$0.56171 cents/kWh. A Negative bid-floor of -\$300 is likely too low. [http://www.pge.com/tariffs/tm2/pdf/ELEC\\_SCHEDS\\_E-6.pdf](http://www.pge.com/tariffs/tm2/pdf/ELEC_SCHEDS_E-6.pdf). The CAISO should look to Commercial and Industrial rates, such as PG&E’s A-6 rate, for more information.

as -\$250/MWh in the CAISO's market. A key barrier to this resource is the current bid floor limit of -\$150/MWh. The bid-floor limit is thus unreasonable.

Other benefits to a lower bid-floor exist. CESA and others have advanced efficiency-related arguments in favor of a lower negative bid-floor in the CAISO "Self Schedules Bid Cost Recovery Allocation and Bid Floor Initiative". CESA believes that rules that prevent a resource from reflecting its costs and competing in CAISO markets may be discriminatory and should be avoided, especially when such resources may also provide market liquidity, competitiveness, and efficiency. The CAISO has a good record of pursuing robust market designs and this proposed change will fit with this pattern, relying on key guiding principles to ensure its markets promote both efficiency and non-discriminatory access.

**B. PDR rules should allow provision of Regulation and Other services.**

Providing avenues for resources to compete and participate in the CAISO market is essential to the operation of a nondiscriminatory market. CESA appreciates the work of the CAISO and of the Load-Consumption Working Group to tailor avenues for participation by PDRs, including in the provision of Regulation. Further, increasing the available pathways to participate via fair rules that adequately address concerns regarding payment to PDRs for non-unique or non-incremental actions is an important advancement to market competitiveness, liquidity, and efficiency. The CAISO's legal assessment of its authority and legal basis for these changes is appreciated.<sup>4</sup>

All next steps identified in the Proposal Section 4.2.1.3 should be pursued. Ultimately this should yield avenues for PDRs to participate in a Zero-Net-Energy (ZNE) type of Regulation service without wholesale energy settlement as well as a more traditional Regulation service with wholesale energy settlement. So long as metering or settlement rules ensure the regulation 'dispatch' is discrete and incremental to any of the already scheduled 'load' of a PDR, such services will be valuable.

Finally, rules for net-exporting of PDRs should be accommodated. Some PDRs may have resources capability of physically exporting electricity to the grid. Exploration and accommodation of this approach is needed for these resources to have avenues to participate. CESA looks forward to learning of next steps for these capabilities.

**C. Station Power rules should direct Tariff changes to allow for permitted 'netting', equivalent to traditional resources, for both charging and discharging.**

CESA appreciates the CAISO's work to vet and assess viable and fair station power rules. One conclusion in the paper appears to be that permitted netting within an interval should be authorized for both a charging and discharging resources.<sup>5</sup> CESA recommends the CAISO not wait for CPUC action to implement these changes.

The proposal should thus authorize this permitted netting and direct Tariff changes accordingly. This minimal step can occur even as the CAISO expects CPUC action on Station Power. CESA appreciates the work of LS Power to provide data-based examples of how a lack of permitted netting for energy storage

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<sup>4</sup> See *Proposal*, pg. 12-13.

<sup>5</sup> See *Proposal*, pg. 53-58.

could be discriminatory. The LS Power example is likely conservative in that it doesn't reflect high 'peak' rates which can be in excess of \$.50/kWh, increasing the illogically disadvantaged position of storage resources compared with conventional resources.<sup>6</sup>

**D. NGR enhancements should reflect use-limitation approaches and rules developed in CCE3 and MWh-throughput solutions should be pursued.**

NGRs should have avenues to qualify for use-limitations and should be able to represent Commitments Costs and through-put or other limitations. CESA's comments<sup>7</sup> the ESDER NGR Working Group reflect much of this input.

The development of a 'MWh-throughput limitation' tool or constraint is also important. Such a tool would help manage NGR resources in line with use-limitations, contractual restrictions, or physical parameters of the resource. For example, an NGR may have near infinite ramping capability in some cases, and a resource may be unable to economically deter the optimization from cycling the resource from P-min to P-max and back to P-min in successive RTD intervals. While such utilization may provide high value to the grid, allowing Regulation resources to 'catch up' or recover while balancing the system, such directed movements, over time, may stress NGR resources in excess of warranty or contractual levels. A MWh-throughput allows resources to provide high-quality services up to an established limit, after which the resource would no longer be dispatched by the optimization. Currently, there is no use-limited rule, as CESA understands it, to economically represent this limit.<sup>8</sup>

Some tool is needed to manage any excess utilization of these resources. In addition to the MWh through-put constraint, CESA has also contemplated the idea of updating bid stacks, or major-maintenance adders. The Commitment Costs for NGRs remain poorly understood and the CAISO should address this dearth of information through accommodating rules that clarify how resources may economically or administratively rule reflect their preferences for dispatch.

Use-limited resources play a vital role in the CAISO's market. The CAISO should allow use-limited status through attestations or other means. Local-Regulatory Authorities, in their capacity planning roles, can determine what mix of resources, including use-limited and non-use-limited resources, are appropriate for achieving planning-related reliability goals. For example, the CPUC uses its Resource Adequacy Proceeding to evaluate or direct a fleet's ability to meet key planning criteria. The CAISO should thus not regulate or limit use-limited resources or access to this status based on planning capacity views, which are out of scope for ESDER.

ESDER should confirm the eligibility of NGRs to have use-limited status, how such status is acquired, and how outages and (a lack of) bid mitigation rules accommodate use-limitations and related

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<sup>6</sup> See PG&E's A-6 rate.

<sup>7</sup><http://www.aiso.com/Documents/CESAComments-EnergyStorageandDistributedEnergyResourcesPhase2WorkingGroup-Sep132016.pdf>

<sup>8</sup> CESA also recommends that Pay-for-Performance Regulation rules be improved to include the accuracy adjustment to all aspects of the pay-for-performance formula, so that inaccurate capacity is discounted and less valued.

**E. Additional settlement and metering tools are needed for select distributed energy resources configurations.**

If a DER is placed in series and behind the distribution metering for the distribution utility it is possible that the energy consumed in round-trip efficiency (RTE) losses by a DER, especially storage, could be paid to the CAISO twice. As the true consumption of the energy is at the DER the DER should be responsible for the net cost of that energy and a Settlement payment equal to the net payment by the DER be made to the respective Utility.

This situation amounts to a potential double payment condition by a Utility due to RTE losses in a DER. CESA recommends exploration of a settlement-style 'credit' to utilities equal to the net energy payment made to CAISO by the DER.

Additionally, DER devices used in multiple use applications should have the option to be measured in isolation to assure accurate whole measurements of RTE and to separate from station power uses. CESA lays out preliminary details on this matter in the Appendix.

**Appendix A: Separating Station Power from RTE for certain configurations**

CESA’s understanding of this matter continues to evolve, and CESA welcomes further input and discussion on this matter.

From the CAISO vantage, a storage device should be measured at BOTH the consolidated input and combined output of the device and netted such that all energy consumed by the DER is considered a purchase and all energy released is considered a sale by the DER. Such an outcome can be enabled by placing station power (and not auxiliary load) devices either (a) behind a retail meter on the combined output of the DER such that their retail uses are clearly measured, or (b) if the DER is behind a retail meter the net use of the DER is reported and settled as a separate data set and it can be easily inferred that all other energy use is Station Power or other retail uses.

This isolated measurement simplifies DER, especially Storage, measurement certainty and clearly capture RTE losses while keeping Station Power and other retail loads accurately measured. See figure below:

