

## Flexible Resource Adequacy Criteria and Must Offer Obligation - Phase 2 Straw Proposal

Submitted by	Company	Date Submitted
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The California Energy Storage Alliance (CESA) offers these comments on the Flexible Resource Adequacy Criteria and Must Offer Obligations (FRACMOO) Phase 2 Straw Proposal (Proposal). CESA appreciates the CAISO's consideration and work on this matter.

CESA is disappointed in the direction of the Proposal. The Proposal seemingly fails to augment the CAISO's capacity tools, namely must-offer obligations, to reliably address over-generation and 'p-min burden' challenges. CESA provided comments on why a capacity construct could play an important role in addressing these challenges.<sup>1</sup> CESA feels that these changes are best-developed by the California Public Utilities Commission (CPUC), yet believes the CAISO must provide data and arguments in favor of a solution that leverages the CPUC's Resource Adequacy (RA) construct. That said, CESA supports continuation of the upward flexible capacity solutions included in the Proposal.

1. Provision of flexible capacity by import or export resources,

### **The CAISO should start with a conservative approach to inertia limits and qualification.**

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<sup>1</sup> CESA's Comments regarding the August 18, 2015 Working Group (pg. 2) stated: "While 'steel' in the ground may not change overnight, capacity product payments and related must-offer obligations can have real near-term effects both on grid resources and on grid operations. For instance, flexible capacity payments may create a willingness to submit more economic bids. 'Allowance' capacity payments, as described in the CAISO's proposal, may encourage renewable resources to provide bids for economic curtailment. Other generators may seek more flexibility through on-site equipment upgrades. Capacity payments to the 'right' resources can prevent planned retirements from certain resources while allowing for retirements by resources that no longer providing sufficient value to the grid. Capacity payments can prompt participation in one market vs in another. Based on capacity payments, maintenance schedules can be deferred or modified, and many other market responses may occur. To CESA, it is unreasonable to assume the grid's resources are unresponsive to the effects of capacity payments or that capacity product structures can have no effect in addressing over-generation and p-min burden challenges. Fundamentally, the RA market has an important and compelling role in ensuring that a workable fleet of resources 'shows up' in the market and participates in ways that allow the ISO to reliably operate the grid."

<http://www.caiso.com/Documents/CESAComments-FlexibleRACriteriaMustOfferObligation-WorkingGroupDiscussion081815.pdf>

CESA notes that there are numerous considerations in using interties for planning capacity purposes. Historical discussions on when and where to use interties for planning should be referenced in the Proposal.

Historical considerations notwithstanding, CESA suggests that the CAISO start with a lower initial allowance for flexible capacity provided through interties. In this manner, the scale of these ‘resources’ as part of the larger portfolio would be limited. This way, the potential effects of relying on out of state resources is prudently considered before the roles of such ‘resources’ are expanded.

The use of interties may provide flexibility in 15-minute dispatches but not in 5-minute dispatches (unless pseudo-tied). Not all neighboring BAAs trade on a less than hourly basis. Finally, imports can be more susceptible to intertie congestion; if the CAISO relies on a Resource Specific System Resource for meeting Flex Up needs, there is a risk that the CAISO may not be able to use this in real time if the intertie path is congested. Because of these reasons, the CAISO should work with the CPUC to consider whether excessive imports as Flex RA could yield too little 5-minute flexibility. By starting with a conservative limit on imports as flexibility, *i.e.* lower than 50% of the requirement, the CAISO can run fewer risks of unexpected outcomes.

The role of exports in providing flexible capacity needs further clarification. Exports may play a role similar to that of an energy storage system charging. Reductions in charging or exporting can provide the system with a ‘flex up’ response, which should be valued. The need for a portfolio of resources, however, is fairly clear in this case, because grid management could be difficult if too much of the CAISO’s upward flexibility need was sourced from exports. Situations could arise wherein the CAISO would need to export increasingly just to get ‘headroom’ to back off of exports to get a ‘flex up’ effect. Also, there may be dissimilar rate treatment issues on exports that provide flexible capacity that must be addressed.

Charging energy storage also provides support for p-min burden and over-generation conditions. The CAISO now has sufficient information on which to assume 2016 will return hydro conditions in California, and perhaps in other Western states, to higher levels. CESA thus reiterates its suggestion for a planning capacity construct that could address over-generation and p-min burden. If bounties of this capacity exists, it will trade and cost very little but could still, if procured by LSE’s in line with other planning capacity, ensure the CAISO has a fleet with must-offer obligations to ensure reliability.<sup>2</sup> Concerns that RA procurement with an additional ‘flex down’ product in mind would yield no difference in the fleet are short sighted. The fleet could have different must-offer obligations so the system operations could change. The new rules could prompt upgrades or changes over time.

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<sup>2</sup> A capacity solution to over-generation and p-min burden could transact at low capacity costs, if the supply pool for such resources is deep and liquid. Given comments at CAISO meetings regarding how Variable Energy Resource curtailment could partly address over-generation challenges, CESA believes such resources could compete to provide ‘flex down’ capacity, indicating a competitive supply pool and presumably lower costs for the procurement of this capacity. More importantly, capacity contracted as ‘flex down’ would ensure the CAISO has adequate bids and resources in its market to operate reliably and without excess out of market actions. Currently, there is no guarantee the CAISO will have this capability. While other ideas have been noted about how the CAISO *could* resolve over-generation or p-min burden situations, capacity tools guarantee it. Capacity tools might also be faster, easier, and more competitive than, say, changing the CAISO’s Short-Term Unit Commitment (STUC) or other ‘in-optimization’ solutions. Since FRACMOO seeks to ensure reliable operations, a solution that fails to yield a reasonably guaranteed solution seems risky.

2. Flexible capacity from pumped-storage hydro model

CESA believes energy storage charging, subject to counting rules, can provide useful and reliable flexibility. Large energy storage resources like Pump-Hydro Storage can and have played critical roles to support grid operations.

3. Merchant Variable Energy Resources

*No comment.*

4. Allocating negative contributions to flexible capacity requirements

*No comment.*

5. Resource adequacy showing requirements for small LSEs

*No comment.*

6. Other.

**The CAISO should clarify that flexibility through storing and/or shifting energy use is a superior flexibility option versus curtailment or simple added load**

CESA notes that downward flexibility due to energy storage charging has an added benefit relative to other potential downward flexibility options such as renewable curtailment, namely that stored and/or shifted energy can be used at a later time to support upward ramping needs. Storage and/or shifted energy resources will make better use of renewable energy generation and support local renewable goals.

Renewable curtailment, on the other hand, could require additional renewables to be installed to meet regional RPS targets, which would likely increase the overall flexible ramping product requirements. Solutions other than mass curtailments could likely be useful, if not essential.

**CESA supports the study of charging EFC in local areas, but the CAISO should account for the time of day in charging EFC limits.**

Other stakeholders have previously noted that the ability of a resource to provide downward flexibility through charging load could be constrained at certain times of day due to local capacity limits. CESA encourages the study of local charging capacity limits to assess this phenomenon further.

Further studies should account for the time of day in their establishment of EFC limits. Local capacity limits during the evening peak likely differ from local capacity limits during the

midday period. The hourly EFC charging limits should take into account the actual use of energy storage resources to charge to provide downward flexible capacity. Those charging limits should also allow for energy storage resources to interconnect with a contracted limit on charging activity during times when charging is not beneficial to the grid, while still retaining an EFC based upon charging capability during the midday time period.

**The CAISO should allow downward flexible charging capacity from non-NGRs, such as storage paired with renewables.**

CESA agrees with the CAISO that downward flexibility from charging NGRs can serve both to support the downward ramp and to reduce upward flexible ramping needs. Such charging capability should therefore be counted as part of the EFC of a resource. CESA notes that such charging characteristics may also apply to non-NGR resource types, such as energy storage integrated with VERs. Therefore, downward flexibility due to charging should be explicitly included in a VER calculation as appropriate.