



CESA Comments on FRACMOO Revised Straw Proposal

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The California Energy Storage Alliance (CESA)¹ provides these comments on the California Independent System Operator's (CAISO) Revised Straw Proposal for the Flexible Resource Adequacy Capacity Must Offer Obligations (FRACMOO) Revised Straw Proposal.²

The proposal highlights that the current flex capacity solution can be improved and that changes to the eligibility rules for FRACMOO will ensure any flex capacity is better suited to meet CAISO's flexibility needs.

System conditions have changed and CESA recommends the CAISO continue to incrementally improve the rules for eligibility for the current 1-year Flex RA. CESA supports these changes but thinks urgency is needed. Data on the duck chart, on a recent Stage 1 emergency, and on the high use of the load bias limiter all signal that grid operations are very challenging and that the need for faster flexibility units is important.³ While longer-start or slower ramping resources

¹ CESA is a 501(c)(6) non-profit. Individual member companies of CESA may have different views than those expressed by CESA. Learn more or join CESA today: www.storagealliance.org

² <http://www.caiso.com/Documents/RevisedStrawProposal-FlexibleResourceAdequacyCriteriaandMustOfferObligationPhase2.pdf>

³ See CAISO FRACMOO, Market Performance and Planning Forum, and Market Surveillance Committee Meeting slides respectively.

may still have a role in the grid, these resources are less likely to resolve the CAISO's more pressing short-duration ramping needs.

CESA also agrees that longer-term solutions should be explored, even while near-term solution are pursued. In this effort, CESA notes that there seems to be agreement that many resources can be valuable, but less agreement exists on the specific problems which the CAISO is proposing for FRACMOO to address. This outcome may have resulted from the original expectation for a single durable flexible product to emerge from FRACMOO. The CAISO should clarify the problems it intends to solve and should move forward expeditiously.

About CESA: CESA represents 65+ companies engaged in the energy storage industry, including large developers, small developers, manufacturers, software and support providers, etc. www.storagealliance.org.

CESA Comments:

- A. The CAISO should define its Capacity Planning tools as a means to ensure a sufficient and workable fleet with appropriate MOOs participates in the CAISO market to reasonably ensure reliable grid operations.**

CESA believes that capacity planning tools should ensure that the CAISO's market can operate reliably. At times, it seems like this definition and goal for capacity planning runs at odds with a view that annual capacity payments are merely 'life-support' payments designed to provide generators with payments needed to cover annual and operational costs not otherwise recouped through the CAISO's spot energy and Ancillary Services market.

CESA's definition, however, allows for competition from an array of resources, including energy storage, ensures reliability, and provides helpful signals to the generator community. This market-based approach should yield competition and capacity services that reflect the an 'efficient' market and market price, which may be low (in periods of supply gluts) or higher in periods of scarcity.

- B. CESA supports the short-term eligibility proposals**

The CAISO proposal evolves the eligibility requirements for RA. These new rules would apply to future years.

CESA supports ongoing collaboration with the CPUC to align rules and to ensure the rules allow for feasible outcomes. If CAISO needs indicate that grid needs cannot be feasibly met, such details should be highlighted to inform all capacity planning exercises.

Some energy storage capacity can be procured and brought on-line very quickly via energy storage solutions.⁴ This fact ensures that even ‘tight’ supply conditions that could emerge from FRACMOO rule changes can be addressed.

The CAISO’s solutions seem needed. Data from the Department of Market Monitoring on how and when some flex capacity resources are not available to support system ramping needs seems compelling. The eligibility changes seek to ensure near-term short-run ramping needs are met or that over-generation and excess commitment issues are addressed via smart capacity planning. This is an understandable evolution from the original Flex RA explorations and the intent of a single durable flex capacity product. Even in the case of evolving the Flex RA Category 3 concept, it is reasonable for the CAISO to include information on evolving system conditions and to tune the planning tools. CESA supports the retention of the Flex RA Category 3.

It is likely incorrect to equate or assume that CAISO actions to tune FRACMOO are endorsements that some resources currently tagged for Flex RA will have no role in grid operations going forward. Flex RA has been in effect for only several years, and flex capacity payments are only one aspect of multiple revenue streams that generators can pursue – and a newer stream at that. Flex capacity services highlight an important grid service but ineligibility for the currently defined flex capacity services does not preclude some generators from still providing other services to the grid. CAISO and stakeholders should recognize that longer-term solutions for flex capacity may allow resources that become ineligible near-term could yet have opportunities to serve as flex capacity in later evolutions of the design, e.g. if the CAISO begins to position units in its Day-Ahead market to reflect the known need for ramping and uncertainty capacity, thereby committing long-start units in the Day Ahead market, or if changes its Short-Term Unit Commitment (STUC) time horizon to such a degree that real-time commitments of long-start solutions could be doable.

Further considerations on the procurement feasibility for each LSE, and on considerations of regional requirements for Flex RA (i.e. rules that ensure a balance of flexible capacity is in both the northern and southern portions of the CAISO) should be added to the proposal.

C. CESA supports exploration of long-term solutions too.

⁴ 2016 Aliso Canyon Energy Storage (ACES) procurements in CA were brought online in months.

Short-term solutions appear to be increasingly critical to the CAISO reliability. That said, that long-run solutions can also be considered. Resource Adequacy (RA) proposals at the CPUC should be considered, and collaboration between the CPUC and CAISO will be key. CESA submitted proposals to the CPUC's RA Proceeding and looks forward to participation with both the CPUC and CAISO efforts.

CESA finds it helpful to remember that the origins of RA stem from periods where, for various reasons including actions by multiple bad actors, the CAISO faced serious reliability issues. Once amidst those reliability issues, emergency or costly actions were needed. The grid stakeholder community should take CAISO reliability concerns or projections very seriously and work proactively to avoid situations where emergency operator actions are needed.

D. An Effective Flexible Capacity (EFC) calculation based on a resource's ramping across two hours, rather than three hours should be considered now.

The CAISO's ramping needs affect reliability and are occurring acutely inside the 3-hour ramp-determination window. The CAISO should thus explore revisions to the EFC calculation based on a resource's two-hour ramping capability, rather than three-hour capability. This effort would likely reduce the EFC from the slow-ramping resources so that flex capacity portfolios would evolve to value very very slow resources differently.

This change should be accompanied by an adjustment of EFC counting for start-up times. Currently, the EFC counts the ramping from resources with start-up times less than 90 minutes (which is $\frac{1}{2}$ of the 3-hour ramp window.) With the change to a two-hour EFC counting window, it may be prudent to only adjust this counting aspect of EFC to resources which start-up in 60-minutes or less. Fleet data may highlight the effects of this change, but the change also could provide a signal for the types of flexibility which will be most needed and valued.

CESA recognizes that this shift to two-hour measurements will not match with the approach to the overall Flex RA need calculation, which is based on the system's ramping needs across three hours. This inconsistency, however, may be helpful to reliability in that it allows for more conservative flex capacity planning. In actual grid operations, the market optimizes for flex needs, contingencies, Ancillary Services, outages, and other factors across a multi-interval horizon. These operational rigors can result in a system with more ramping needs than just the pure system-wide three hour net-load ramp. By counting EFCs based on a two-hour ramp-window, the faster ramping flex capacity resources will be better poised to meet the actual and more complicated grid ramping needs, not just the study-based need.