



Comments of the California Energy Storage Alliance on the Resource Adequacy Enhancements Fifth Revised Straw Proposal

Submitted by	Organization	Date Submitted
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CESA's overall position on the RA Enhancements fifth revised straw proposal:

- Support
- Support w/ caveats
- Oppose
- Oppose w/ caveats
- No position

Overall CESA position:

Large changes to the CAISO treatment of Resource Adequacy (RA) rules and related matters should be undertaken carefully and with strong considerations of stakeholder input. The CAISO should recognize that it may need multiple stakeholder initiatives to evolve aspects of its market or tariff. In many cases, 'whole hog' changes should be avoided insofar as they may materially disrupt contracts or yield inefficient or ineffective market outcomes. *Primum non nocere* - at the minimum, do no harm.

While CESA supports the fundamental transition to a UCAP-based approach in RA counting and related outage and substitution matters, CESA strongly opposes several aspects of the market design proposed within the RA Enhancements initiative: 1) Strongly oppose the Minimum Charging Requirement. 2) Strongly oppose a calculation that applies any usage of an end-of-hour State of Charge (EOHSOC) towards a lower UCAP for an energy storage resource 3) concerns about CAISO's proposal to use class averages to calculate a new resource's UCAP; and, 4) concerns about the number of hours taken into consideration for purposes of UCAP evaluation, which may be excessive.

CESA has commented and participated in this RA enhancements initiative in virtually all of its meetings, straw proposals, etc., and CESA remains unsupportive, on net, with the current proposal. CESA's main concerns and goals are to support the

CAISO's adoption of UCAP while preserving the viability of existing and future contracts, e.g. disrupting neither Net Qualifying Capacity (NQC) nor Effective Flexible Capacity (EFC) definitions which are established contractual terms, and also while unleashing the flexibility, peaking, and other capabilities of energy storage RA capacity through traditional and non-discriminatory must-offer obligations that apply to CAISO markets which overwhelmingly should schedule and dispatch based on prices, not via a MCR or operator exceptional dispatches.

CESA also has process-oriented concerns about the inclusion of the MCR in the RA Enhancements initiative, as this matter was decidedly not scoped into the initiative. Moreover, the MCR proposal has been removed from this initiative and considered in others, where it was equally met with oppositions by stakeholders. The CAISO uses a well-established stakeholder process and should not deviate from this process unless there is exceptional need. To CESA, no such exceptional need has been determined for the MCR, which also lacks stakeholder support from CESA's vantage.

CESA elaborates on its positions below.

1. System Resource Adequacy

Please provide your organization's feedback on the System Resource Adequacy topic as described in section 4.1. Please explain your rationale and include examples if applicable.

CESA supports the ISO's efforts to incorporate the UCAP into the capacity valuation process for assets that seek to provide resource adequacy (RA) within CAISO's footprint. CESA understands that an estimation of dependability is necessary for the ISO to ensure the continuous and reliable operation of the electric grid. Nevertheless, CESA does not fully agree with the ISO's proposals on this issue. CESA's caveats are explored further in the following sections.

- a. Please provide your organization's feedback on the Determining System RA Requirements topic as described in section 4.1.1. Please explain your rationale and include examples if applicable.

CESA supports the proposal to use a stochastic bottom-up modelling approach to identify potential portfolio deficiencies. Compared to a deterministic model, a stochastic approach allows for greater flexibility in assessing a wide set of generation and load conditions. This, in turn, provides more robust results for the ISO to act upon.

CESA also appreciates the ISO's work to conduct an assessment of this methodology using actual June data in order to evaluate this approach and better inform the necessary inputs and the probabilities of stage emergencies and unserved energy. CESA will continue collaborating with the ISO when the supplement to this proposal is issued this month.

- b. Please provide your organization's feedback on the Unforced Capacity Evaluations topic as described in section 4.1.2. Please explain your rationale and include examples if applicable.

CESA is partially supportive of the proposals included in section 4.1.2. Specifically, CESA strongly recommends that the CAISO use different weightings for forced and/or urgent outages than as proposed. CESA also believes the number of hours used for reasonably determining UCAP vis-à-vis 'tight' system conditions are excessive, as proposed. Beyond that, CESA supports the methodology employed by the ISO to evaluate the UCAP of resources and also approves of the use of a seasonally differentiated methodology.

An important change that the CAISO should make lies in the use of some outage categories for derating UCAP. While the CAISO asserts that only Forced and Urgent outages would negatively impact the UCAP of resources¹, CESA observes that this approach creates perverse incentives for resource operators to avoid reporting potentially dangerous operating conditions via an Urgent outage request in order to preserve UCAP value. To mitigate this disincentive and maintain grid reliability, CESA recommends the ISO weight Forced and Urgent outages *differently*. Since the UCAP evaluation for a resource is done in an *ex post* fashion, CESA considers the ISO would be able to define the impact Forced and Urgent outages have on UCAP in a separate manner. Specifically, the weight of Urgent outages should be set at 0.5; that is, the impact of urgent outages on UCAP should be half of that of Forced outages. CESA also highlights that any derate derived from Urgent outages must only occur if the Urgent outage is approved and taken, not if it is only requested. In this sense, a resource requesting an Urgent outage could face three scenarios:

- 1) The resource requests an Urgent outage, it is granted and taken by the resource.
This outage should be considered an Urgent outage and should be weighted at 0.5 for UCAP purposes.
- 2) The resource requests an Urgent outage, it is not granted and the resource incurs in a Forced outage: or, it is granted but the resource is unable to maintain operations until its scheduled Urgent outage window and thus incurs in a Forced outage.
This outage should be considered a Forced outage and should be weighted at 1.0 for UCAP purposes.
- 3) The resource requests an Urgent outage, it is granted but the resource does not take it as it realizes it can continue operating until a Planned outage is granted.
This outage should be considered a Planned outage as the resource

¹ *Ibid*, at 16.

did not make use of the Urgent outage granted. As such, it should not negatively impact UCAP.

Importantly, the ISO must also reevaluate the outage definitions considered in this section to avoid discounting the UCAP of resources due to outages or failures of the electrical system beyond a resource's control (i.e. transmission outages). In the Fifth Revised Straw Proposal the ISO included a definition for UCAP exempt outages within Section 4.1.2 which lists only four causes that qualify an outage for exemption: natural disaster, act of the public enemy, war, and insurrection.² This set of outage definitions is problematic because it could inappropriately or excessively derate a unit when the unit otherwise was ready perform. A UCAP derate under these conditions is thus inappropriate. This concern is amplified by the growing occurrence of transmission outages due to increasing wildfire risks. To address this the CAISO must include an additional outage definition to be exempt from UCAP, a "Forced Transmission Outage" in line with the definition used in the Midcontinent Independent System Operator's (MISO) footprint (which doesn't have the issues of the 3-year lookback).

Furthermore, the ISO should seriously reconsider the impact using the end-of-hour state-of-charge (EOH SOC) optional parameter would have on the UCAP of storage resources, as explained below (Section 1.b.iv).

- i. Please provide your organization's feedback on whether the ISO should establish a dead band around a resource's UCAP value given the associated benefits and burdens, as described in section 4.1.2. Please explain your rationale and include examples if applicable.

CESA supports of the modification regarding the establishment of a 2% dead band in which resources would not experience a derate of their NQC value, as proposed by LS Power, SEIA, and EDF-Renewables. This proposal presents considerable benefits and certainty to operators, especially considering the UCAP evaluation hours will not be known beforehand.

- ii. Please provide your organization's feedback on the use of Option 1 or Option 2 for calculating UCAP for new resources without three full years of operating history, as described in section 4.1.2. Please explain your rationale and include examples if applicable.

CESA supports the use of a modified version of Option 2 to derive the UCAP values of resources without three full years of historic operation data. Specifically, the weighting of Year 0 performance and NQC for Year 1 calculations should be modified. CESA recommends the following weighting:

Year 1: 60% year 0 performance, 40% NQC.

² *Ibid*, at 17.

This recommendation reflects how resources should not be unduly derated for actions not undertaken by their operators. By this logic, CESA opposes Option 1 as it would derate the reliability contributions of brand-new assets based solely on the operational history of assets loosely considered within the same class. Option 1 could prove harmful and inaccurate for storage assets since penetration is currently low, but it is expected to increase substantially in the coming years.

The modified Option 2, by contrast, is well equipped to both represent the reliability contributions of new resources and to incent them to operate adequately early on. The specific modifications to the weights for calculating Year 1 will mitigate the potentially sharp decrease resources could experience after their initial commercial operation date (COD) where some quick but normal tuning is expected and not indicative of future performance. As CESA has noted previously in RA Enhancements comments, recently deployed resources may experience a short break-in period when entering CAISO operations. This, in turn, could lead to suboptimal operation due to the steep learning curve, and such a penalty might persist excessively under the Option 1 proposal as written. CESA's changes, by contrast, resolve this inappropriate derates:

- Year 0 (i.e. before actual operational data is available): NQC
 - Year 1: **60% year 0 performance, 40% NQC**
 - Year 2: 55% year 1 performance, 35% year 0 performance, 10% NQC
 - Year 3: 45% year 2 performance, 35% year 1 performance, 20% year 0 performance
- iii. Please provide your organization's feedback on the ISO's approach to use the historical availability during the RAIM hours for years prior to 2019 and the historical availability during the 20% tightest supply cushion hours in years 2019 and beyond for hydro resources, as described in section 4.1.2. Please explain whether this approach is necessary or preferred to the standard UCAP calculation to reflect hydro availability.

CESA has no comment at this time.

- iv. Please provide your organization's feedback on the modifications for UCAP counting rules for storage resources as described in section 4.1.2. Please explain your rationale and include examples if applicable.

CESA has serious concerns with this section and believes further work must be done to better align UCAP rules with opportunities for resources to self-manage their SOC to deliver on Day-Ahead schedules. As currently drafted, this proposal creates a disincentive to use EOH SOC parameters since it could adversely impact the UCAP of a resource. This eliminates the benefits of said parameter, foregoing the

potential certainty its use provides to both the ISO and asset operators. CESA concludes that the impact of the EOH SOC parameter on UCAP must be revised, especially when assets opt to use this parameter specifically to ensure they will be fully charged to comply with day-ahead (DA) schedules.³

In addition, CESA highlights that it is unclear how the ISO would treat storage assets that have been optimized to be dispatched during hours that are used within the UCAP assessment framework, as these hours are only identified in an *ex post* fashion. The ISO has not elaborated on this idea enough to provide certainty as to the effects of optimal market dispatch and bidding when adopting its proposal to further de-rate the UCAP value of energy storage resources. CESA considers the following example must be explicitly addressed by the ISO.

A storage resource has been set up to start Hour-Ending 1 with a 100% SOC. HE 1 is not considered for UCAP valuation. Over the course of HE 1 the resource is optimized to be dispatched fully, reaching a 0% SOC by the end of HE1. The storage resource starts HE 2 with a 0% SOC. HE 2 is considered for UCAP valuation.

What will be the impact of this scenario on the storage asset's UCAP value?

If an asset's SOC is the result of market dispatch, it should not affect its UCAP value, as the resource bid into the market and dispatched following ISO instructions; however, it is not clear that will be the case. CESA urges the ISO to further develop this and welcomes the opportunity to further work with the ISO in this initiative to come up with market-centric ideas that will ensure the flexible and reliable operation of energy storage.

- c. Please provide your organization's feedback on the System RA Showing and Sufficiency Testing topic as described in section 4.1.3. Please explain your rationale and include examples if applicable.

CESA sees the ISO's decision to only model RA resources as reasonable. This method is for analysis and could enable LSEs to be more aware of potential shortcomings in the RA market, incenting procurement for future cycles. With regards to the ISO's decision to utilize the simulation tool currently employed for the Summer Loads and Resources Assessment process, CESA believes that this determination is viable and timely. The repurposing of an existing tool that has been examined previously by stakeholders allows for more expedited implementation of this proposal.

³ CESA understands this application would be duplicative of the minimum charge requirement (MCR) included in this initiative; however, as CESA mentions later in this document, the MCR proposal should be tabled in favor of a broader application of the optional EOH SOC.

- d. Please provide your organization's feedback on the Must Offer Obligation and Bid Insertion Modifications topic as described in section 4.1.4. Please explain your rationale and include examples if applicable.

CESA has no comment at this time.

- e. Please provide your organization's feedback on the Planned Outage Process Enhancements topic as described in section 4.1.5. Please explain your rationale and include examples if applicable.

CESA has no comment at this time.

- f. Please provide your organization's feedback on the RA Import Requirements topic as described in section 4.1.6. Please explain your rationale and include examples if applicable.

CESA has no comment at this time.

- g. Please provide your organization's feedback on the Operationalizing Storage Resources topic as described in section 4.1.7. Please explain your rationale and include examples if applicable.

CESA is strongly opposed to the MCR proposed in section 4.1.7, Operationalizing Energy Storage Resources. While CESA understands the CAISO's general reliability intent, this proposal may (1) seriously hinder market participation; (2) increase reliability risks by constraining flexible RA supply; and, (3) potentially discriminate against storage resources while running afoul of CAISO principles of non-discrimination and efficient market-oriented policy. CESA also has process concerns with the inclusion of the MCR in this initiative, after it was 1) not scoped in 2) removed from the initiative 3) removed from the ESDER initiative and 4) returned back to this initiative later in its development cycle.

To better understand the potential market participation and reliability issues the MCR could bring, consider a case where a storage asset is scheduled to provide a significant dispatch in the hours after sunset. For this resource, the MCR could limit the asset's ability to provide minor dispatch that would be extremely valuable during the periods where flexible ramping capacity is needed (i.e. the sunset period). The MCR proposal thus could limit the participation of energy storage assets during the periods where they must stand idle in order to fulfill DA schedules. This will result in a loss of value for developers and owners, and, more importantly for CAISO's system efficiency, as well as the potential for increased reliability risks via the inability to dispatch the resource. In other words, the ISO's MCR proposal could increase the risks of the very issues which, as CESA understands it, the ISO seeks to mitigate through the MCR. Limiting the participation of storage assets in the sunset hours introduces additional uncertainty to the calculation related to the use of either imbalance reserves or Flexible RA.

Further development, vetting, and stakeholder input is necessary if the CAISO seeks to further explore this concept.

The MCR, as proposed, is also unduly restrictive to asset operations, well beyond the *de rigueur* requirements of must-offer obligations. With the MCR, the ISO seeks to disregard offers!

Finally, and concerningly, this proposal may unintentionally be discriminatory insofar as it forces resources of particular technology classes to “sit-out” several intervals instead of ensuring price signals and market optimization function properly. As CESA understands this issue, such restrictions are not placed upon other technologies. This generally is a concerning deviation from the CAISO’s normal market operations where units that miss schedules must ‘pay’ to buy out of their DA schedule, ensuring the economics of ‘balancing the system’ in the imbalance (real-time) market are efficiently managed. For instance, if a gas unit buy on the lower end of gas-burn expectations compared to its DA schedule, does the CAISO not allow the resource to generate during mid-day hours? Does the CAISO monitor that the water within complex multi-dam hydro systems is administered to ensure afternoon energy availability from a downstream resource?

CESA believes different market-oriented solutions could address CAISO’s concerns in more efficient and flexible ways that do not limit participation. In this spirit, CESA proposes the ISO consider the following reforms.

- Near-term actions:
 - The ISO should modify its bidding floors and ceilings to ensure these price signals can work in order to incent the desired resource behavior. CESA considers this modification would be aligned with the ISO’s commitment to non-discriminatory, market-driven solutions.
 - The ISO should reframe the EOH SOC parameter contemplated in the ESDER 4 initiative to allow operators to reach the needed SOC prior to significant DA-scheduled dispatches. As mentioned previously in this document, the use of said parameter must not affect a resource’s UCAP as it seeks to provide certainty to the ISO while maintaining the potential for flexible response.
- Mid-term actions:
 - The ISO must fundamentally revise its real-time (RT) market structure to properly represent the bid curves submitted by asset operators. Currently, the ISO’s RT market captures the bid curves supplied by storage operators and dispatches them according to the implied spread between charge and discharge bids. CESA notes that this method carries potential risks as some resources might receive uneconomic instructions regardless of the expected spread. This, in turn, increases the likelihood RA-providing resources participating in the RT market would find themselves unable to comply with DA schedules. Hence, CESA urges the ISO to reform the RT market

optimization tools to act based on specific bid points and not expected spreads.

- The ISO must invest in optimization schemes with longer look-ahead periods in preparation for times when battery storage penetration is significant. As currently drafted, the ISO's MCR proposal seeks to prematurely address an issue that, while significant, does not pose great reliability risks in the present time. Considering energy storage will be deployed *en masse* in the coming years, CESA considers investments in better optimization software are warranted in order to prepare the ISO to mitigate this risk.

2. Flexible Resource Adequacy

Please provide your organization's feedback on the Flexible Resource Adequacy topic as described in section 4.2. Please explain your rationale and include examples if applicable.

CESA has no comment at this time.

3. Local Resource Adequacy

Please provide your organization's feedback on the Local Resource Adequacy topic as described in section 4.3. Please explain your rationale and include examples if applicable.

CESA has no comment at this time.

4. Backstop Capacity Procurement Provisions

Please provide your organization's feedback on the Backstop Capacity Procurement Provisions topic as described in section 4.4. Please explain your rationale and include examples if applicable.

CESA has no comment at this time.

5. Please provide your organization's feedback on the implementation plan, including the proposed phases, the order these policies must roll out, and the feasibility of the proposed implementation schedule, as described in section 5. Please explain your rationale and include examples if applicable.

CESA is supportive with caveats of the ISO's proposed implementation plan. Specifically, CESA urges the ISO to increase its coordination with the California Public Utilities Commission (CPUC) in order to ensure a timely and certain transition of UCAP features. As the ISO is aware, the CPUC is currently evaluating potentially fundamental reforms to the RA program through Track 3 of the ongoing RA proceeding, R.19-11-009. CESA has noted that some of the proposals to be filed in this proceeding seek to revamp the RA program in manners that could potentially

delay the implementation of the ISO's UCAP proposal. In order to avoid uncertainty and ensure the continued reliance of the electric sector, CESA urges the ISO to work closely with the CPUC within this initiative and R.19-11-009.

6. Please provide your organization's feedback on the proposed decisional classification for this initiative as described in section 6. Please explain your rationale and include examples if applicable.

CESA has no comment at this time.