

**Comments of the
California Energy Storage Alliance (CESA) on the
RA Enhancements Straw Proposal Part 2**

Submitted by	Organization	Date Submitted
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Introduction:

CESA offers these comments on the RA Enhancements Straw Proposal, issued on February 28, 2019. CESA appreciates the opportunity to comments and looks forward to working with the CAISO on these important issues.

CESA Comments:

The CAISO proposes several changes to the RA counting rules and assessments in its RA Enhancements Straw Proposal part 2. These include: consideration of forced outage rates for system and flexible RA requirements. The CAISO’s proposal focuses in part on Installed Capacity (ICAP), Unforced Capacity (UCAP), and Effective Forced Outage Rate of Demand (EFORd) definitions and related metrics.

As the CAISO proposes changes to the RA counting and assessment rules, CESA recommends the CAISO avoid changes to the Net Qualifying Capacity (NQC) or Effective Flexible Capacity (EFC) terms related to resources since these terms are heavily referenced and defined in existing contracts.

CESA suggests several changes or nuances to the CAISO’s EFORd-related UCAP proposals.

First, the CAISO should not change the EFC term but may instead explore how to introduce a new term such as Effective Flexible adjusted UCAP (EF-UCAP) so that any new approaches do not materially disrupt the language used in many existing contracts. CESA observes that the CAISO



developed a similar path in its proposal for counting a resource's expected available capacity, namely that the CAISO does not modify the NQC but instead establishes a different terminology which is viable, namely ICAP and UCAP.

Second, rules or modifications are needed for establishing UCAP and ICAP for energy storage, particularly in cases where, under the Non-Generator Resource (NGR) model, the total Effective Flexible Capacity can exceed the NQC. Under the current proposal, the EFC would be equal to or less than the UCAP, which would be a material change from today's rules and, as CESA understands it, not the CAISO's intent regarding the RA counting rules for energy storage. Specifically, the CAISO denotes $EFC = UCAP * (\text{Percent of available capacity economically bid into the CAISO's market})$.¹

Additionally, instead of limiting the EFC to be at or equal to the UCAP, the CAISO should establish a new term, the EF-CAP, which would be an outage-adjusted version of the current EFC calculation which can effectively be up to $2 * \text{the NQC}$ or $2 * \text{the ICAP}$, pursuant to CPUC rules regarding the energy duration abilities of the energy storage resource. Since the EFC of an NGR can effectively be 2 times the NQC or ICAP, the EFORD discount may have 2 times the effect of a storage resource's EF-CAP if the formula if the UCAP formula is applied to the EFC. This seems like an oversized reduction to an energy storage resource's EF-CAP, and the CAISO should only apply the EFORD discount to part of the storage resource's ICAP.

Finally, CESA understands the role of averaging in establishing a preliminary EFORD metric but suggests several modifications be considered on this aspect of the proposal. The use of class averages may need modification for asset classes with low numbers of resources on the system. Some resources, however, may be unfairly undervalued if, say, one resource of very few resources performs poorly. For example, imagine that only 4 energy storage resources of a certain class exist, and one resource operates exceptionally poorly due to exogenous factors, but the others operate perfectly. The EFORD methodology could deliver a large 'hit' to the ICAP of a resource because of one poor resource, the performance of which may not represent the performance of other resources. This outcome is one of several risks associated with averaging², so CESA recommends consideration of special practices for i) resources with few peers in their asset class in the CAISO or ii) newer resources whose performance can be expected to increase across time. CESA recommends the CAISO allow for corrective actions or case-by-case determinations of energy storage resources due to the above concerns. Also, changes to the EF-CAP could be limited to a certain change year-over-year so that a single bad event in a year does not lead to unreasonably low UCAPs or EF-CAPs for many years, assuming the class average or resource performance data from past years is carried into future years in determining the EFORD.

¹ "RA Enhancements Straw Proposal, Part 2", CAISO, 2/28/19, pg. 18.

² Both older and newer resources, being subject to Weibull (bathtub curve) probability should have mechanisms to cure EFORD penalties, whether assessed based on asset class (small numbers may skew probability), force majeure (an outage outside the resource's control), or exceptional events (an unusual equipment failure). Another risk is that the outage likelihood appears even across time when outages may increase in certain conditions, such as end of life, or during periods of frequent starting/stopping, etc. Comparing the performance of resources decades old with that of a new resource may be unreasonable.

About CESA:

CESA is an industry advocacy association focused on grid-connected energy storage. CESA's mission is to make energy storage a mainstream resource that accelerates the adoption of renewable energy and promotes a cleaner, more efficient, reliable, affordable, and secure electric power system. The CAISO's ESDER initiative specifically addressed market participation pathways for energy storage in select applications and is a core priority of CESA's.

CESA is a 501(c)(6) non-profit that represents over 70 member-companies and leaders in the energy storage industry.³ www.storagealliance.org.

³ 8minutenergy Renewables, Able Grid Energy Solutions, Advanced Microgrid Solutions, AltaGas Services, Amber Kinetics, American Honda Motor Company, Inc., Axiom Exergy, Brenmiller Energy, Bright Energy Storage Technologies, Brookfield Renewables, Carbon Solutions Group, Centrica Business Solutions, Consolidated Edison Development, Inc., Customized Energy Solutions, Dimension Renewable Energy, Doosan GridTech, Eagle Crest Energy Company, East Penn Manufacturing Company, Ecoult, EDF Renewable Energy, ElectrIQ Power, eMotorWerks, Inc., Enel, Energport, ENGIE, E.ON Climate & Renewables North America, esVolta, Fluence Energy, GAF, General Electric Company, Greensmith Energy, Ingersoll Rand, Innovation Core SEI, Inc. (A Sumitomo Electric Company), Iteros, Johnson Controls, Lendlease Energy Development, LG Chem Power, Inc., Lockheed Martin Advanced Energy Storage LLC, LS Power Development, LLC, Magnum CAES, Mercedes-Benz Energy, NantEnergy, National Grid, NEC Energy Solutions, Inc., NextEra Energy Resources, NEXTracker, NGK Insulators, Ltd., NRG Energy, Inc., Parker Hannifin Corporation, Pintail Power, Primus Power, Range Energy Storage Systems, Recurrent Energy, Renewable Energy Systems (RES), Sempra Renewables, Sharp Electronics Corporation, SNC Lavalin, Southwest Generation, Sovereign Energy, Stem, STOREME, Inc., Sunrun, Swell Energy, True North Venture Partners, Viridity Energy, VRB Energy, Wellhead Electric, and Younicos. 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>).