

**BEFORE THE PUBLIC UTILITIES COMMISSION  
OF THE STATE OF CALIFORNIA**

Order Instituting Rulemaking to Oversee the Resource Adequacy Program, Consider Program Refinements, and Establish Annual Local and Flexible Procurement Obligations for the 2017 and 2018 Compliance Years.

Rulemaking 17-09-020  
(Filed September 28, 2017)

**TRACK 1 PROPOSALS OF THE  
CALIFORNIA ENERGY STORAGE ALLIANCE**

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In accordance with the Rules of Practice and Procedure of the California Public Utilities Commission (“Commission”) and the *Scoping Memo and Ruling of Assigned Commissioner and Administrative Law Judge* (“Scoping Memo”), issued on January 18, 2018, the California Energy Storage Alliance (“CESA”)<sup>1</sup> hereby submit these Track 1 proposals for consideration in the Resource Adequacy (“RA”) proceeding scope.

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<sup>1</sup> 8minutenergy Renewables, Able Grid Energy Solutions, Adara Power, Advanced Microgrid Solutions, AES Energy Storage, AltaGas Services, Amber Kinetics, American Honda Motor Company, Inc., Brenmiller Energy, Bright Energy Storage Technologies, BrightSource Energy, Brookfield, California Environmental Associates, Consolidated Edison Development, Inc., Customized Energy Solutions, Demand Energy, Doosan GridTech, Eagle Crest Energy Company, East Penn Manufacturing Company, Ecoult, EDF Renewable Energy, ElectrIQ Power, eMotorWerks, Inc., Enel X, Energport, Energy Storage Systems Inc., ENGIE Energy Storage, Fluence Energy, GAF, Geli, Greensmith Energy, Gridscape Solutions, Gridtential Energy, Inc., 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, National Grid, NEC Energy Solutions, Inc., NextEra Energy Resources, NEXTracker, NGK Insulators, Ltd., NICE America Research, NRG Energy, Inc., Ormat Technologies, Parker Hannifin Corporation, Qnovo, Recurrent Energy, RES Americas Inc., Sempra Renewables, Sharp Electronics Corporation, SNC Lavalin, Southwest Generation, Sovereign Energy, STOREME, Inc., Sunrun, Swell Energy, Viridity 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>).

## **I. INTRODUCTION.**

The RA program continues to be a key component of the state’s reliability and grid planning efforts. CESA strongly supports capacity planning efforts that ensure reliability and provide a sufficient and workable fleet by which the California Independent System Operator (“CAISO”) or other grid operators can effectively manage and balance the grid.

Changes to the program are warranted at this time, with the goal of ensuring the fleet can meet grid needs in virtually all circumstances. As such, CESA recommends three proposals:

- The RA planning tool should ensure sufficient capacity (with participation obligations) for downward ramping flexibility – *i.e.*, a ‘Flex RA Down’ product.
- Track 2 of the proceeding should explicitly authorize and unbundle Flexible RA from System or Local RA attributes so that flexibility-focused resources can be designed and interconnected without needing or planning for other RA duties and peak deliverability, benefiting ratepayers.
- Combinations of energy storage and demand response should be authorized to provide combined RA service via a revision to Decision (“D.”) 14-06-050.
- Resources that have modest transition times to go from charging to discharging should be authorized for Flexible RA value that ranges from the appropriately determined Pmax to the appropriately determined Pmin.

CESA represents over 65 member-companies focused in the energy storage industry in various ways. CESA promotes competitive outcomes and technology neutral-approaches to ensure good outcomes for ratepayers.

## **II. PROPOSALS.**

### **A. The RA planning tool should ensure sufficient capacity (with participation obligations) for downward ramping flexibility by establishing a new ‘Flex RA Down’ product.**

Capacity market valuations and competitive outcomes are linked to actual grid dispatches and energy markets. The Commission should ensure that any fleet yielded by the RA market is sufficient to prudently address and meet grid conditions across the month through ‘in-market’

solutions as compared to operational adjustments or out-of-market actions, which can be a sign of inefficiency in the dispatch or fleet. As such, an RA market or planning capacity value for downward flexibility that includes a must-offer obligation (“MOO”) is needed.

CESA proposes that the Commission include the development of a Flex Down RA product in this proceeding. This product could be implemented in a non-binding fashion for a ‘pilot year’ if needed and should be defined so that physically designated resources with downward ramping capability can compete to provide these services. Any related MOOs should emphasize the provision of downward ramping bids in the CAISO markets during key times. Resources would ‘count’ based on their expected downward ramping range across a brief time – *e.g.*, 5- or 15-minute periods. Resources with minimum run-times or minimum load levels that reduce ramping capabilities in the determined intervals should face lower qualifying capacity ‘counts’ for Flex RA Down. The downward ramping range of variable energy resources could be calculated based on their expected downward flexibility at the period of need. For in-front-of-the-meter (“IFOM”) energy storage, the Flex Down RA count should include the full range from maximum discharge to maximum charge. For behind-the-meter (“BTM”) resources, ‘load shifting’ capability along with the ability to increase load should inform the eligibility and counting of these resources.<sup>2</sup>

CESA reminds stakeholders that some resources currently appear to be providing Flex RA Down ‘for free’ in the form of a willingness to curtail or reduce output (or increase load) from resources, some of which are in operations today. This implies a \$0/kW-month capacity payment. CESA notes this because a Flex RA Down product might be extremely inexpensive to implement yet could sufficiently guarantee that the RA fleet will support economic and reliable operations by

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<sup>2</sup> The CAISO is developing a ‘load shift’ product whereby BTM energy storage resources can provide downward ramping services and load increase to support the grid in periods of negative pricing (*i.e.*, overgeneration). This matter is scoped into the CAISO’s Energy Storage and Distributed Energy Resources (“ESDER”) Phase 3 Initiative.

the CAISO. While some parties have asserted that a new product might just be used to direct more payments to generators, that is not CESA's goal. Rather, CESA aims to ensure that efficient and sufficient fleets are available to the CAISO for meeting reliability needs through its market optimization and related schedules. A Flex RA Down product also provides an important 'market signal' that fast-ramping energy storage solutions are likely needed to integrate renewables and to promote reliability. Consideration of all grid needs, including downward ramping and overgeneration conditions, is appropriate for RA and can be done in ways that boost procurement efficiencies and reliability on behalf of ratepayers.

Any assumptions that overgeneration is an 'operational issue only' understates the complicated nature of energy markets, grid reliability, capacity contracts, and other factors. CESA believes it is discriminatory and unreasonable to presume, particularly in planning exercises, that curtailments can occur in unlimited quantities. In many cases, this 'operational only' perspective is not true due to physical or contractual conditions, and it also relies on selective treatment in CAISO markets where some resources are shut off so others can run. An over-reliance on curtailment also may inadvertently authorize over-commitments of fossil resources, again where out-of-market costs lead to inefficiency and where greenhouse gas emissions can be higher than if a more efficient dispatch via Flex RA Down offers had been scheduled. In some cases, curtailments may be allowing imports of unspecified power, potentially coal, into California. Finally, downward ramping shortages are occurring and may occur with greater frequency. Planning for this eventuality with a smartly designed capacity planning tool is logical and reasonable for ratepayers who may otherwise bear costs of out-of-market payments and backstop procurement. For all of these reasons, the Commission should explore capacity planning for downward ramping needs. Such an exploration will likely yield a more efficient, clean, and

reliable operation of the grid in ways that also signals to market participants and to contracting parties what types of services are valuable.

**B. Track 2 of the proceeding should explicitly authorize and unbundle Flexible RA from System or Local RA attributes so that flexibility-focused resources can be designed and interconnected without needing or planning for other RA duties and peak deliverability, benefiting ratepayers.**

Under current RA rules and interconnection practices, resources that provide Flexible RA services generally must seek full capacity deliverability status (“FCDS”). FCDS studies are meant to examine whether a resource is capable of delivering during peak times on the entire system. Such a study is burdensome for resources only seeking to provide Flexible RA services at non-peak times, and this peak deliverability focused approach can lead to costly system upgrades that might have been avoidable but for the coupling of Flexible and System/Local RA needs.

To address this inefficiency, CESA proposes that the Commission’s RA rules explicitly unbundle the sale and counting of Flexible RA attributes from those of Local and/or System RA. This should further be reflected through the establishment of a separate pathway for determining flexible deliverability – *i.e.*, Effective Flexible Capacity (“EFC”) – instead of through the FCDS study, as is used today to determine the net qualifying capacity (“NQC”).

The CAISO has signaled a willingness to support this unbundling in their jurisdictional roles (of measuring deliverability via studies), as have other stakeholders. Full EFC deliverability should therefore be authorized separately from any NQC deliverability. While CESA has not seen details of the CAISO’s potential study form and is not endorsing it at this time, the CAISO is exploring this concept in the Flexible Resource Adequacy Criteria and Must Offer Obligation

(“FRACMOO”) Phase 2 Initiative.<sup>3</sup> CESA imagines that a separate EFC deliverability authorization or examination could expedite the process of getting resources online to provide valuable flexible capacity services in least-cost fashion, benefitting ratepayers.

Finally, for EFC counting, – and this may already be scoped by the Commission based on the RA Scoping Memo – the Commission should modify its measurement methodology for determining Flexible Capacity.<sup>4</sup> Currently, the flexible capacity measure hinges on a three-hour ramp period, but given that three-hour solutions may overstate the flexibility available for actual operations, CESA recommends a shorter duration would be a more appropriate period, where 5-minute or 15-minute flexibility is needed. The measurements based on three-hour intervals undervalue fast flexibility and do not support the provision of a fleet that can meet many actual operating needs.<sup>5</sup>

In conclusion, Flexible RA rules should be unbundled to properly value the ramping services (both ramping up and down) that energy storage resources could provide but are not incented to provide under the current Flexible RA framework.<sup>6</sup>

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<sup>3</sup> *Flexible Resource Adequacy Criteria and Must Offer Obligation Phase 2 Initiative Revised Flexible Capacity Framework*, published on January 31, 2018, pp. 9, 35-37.

<http://www.caiso.com/Documents/RevisedDraftFlexibleCapacityFrameworkProposal-FlexibleResourceAdequacyCriteria-MustOfferObligationPhase2.pdf>

<sup>4</sup> CESA understands that this may already be scoped by the Commission based on the RA Scoping Memo.

<sup>5</sup> See CAISO *Revised Flexible Capacity Framework* and presentations in the FRACMOO Phase 2 Initiative stakeholder meeting on February 7, 2018.

<https://www.caiso.com/Documents/Agenda-Presentation-RevisedDraftFlexibleCapacityFrameworkProposal-FlexibleRACriteria-MustOfferObligationsPhase2-Feb72018.pdf>

<sup>6</sup> CESA appreciates that CPUC rules smartly authorize energy storage to have EFCs that exceed NQCs in D.14-06-050, *Decision Adopting Local Procurement and Flexible Capacity Obligations for 2015, and Further Refining the Resource Adequacy Program*, filed on June 26, 2014, p. B10.

**C. Combinations of energy storage and demand response should be authorized to provide combined RA service via a revision to D.14-06-050.**

D.14-06-050 states that “storage and DR may not be jointly aggregated to create a combined Storage-DR resource at this time, but we may explore this possibility in future RA compliance years.”<sup>7</sup> It is time to revise this Decision and explicitly allow joint storage and DR resources. Technically, these resources can look like dispatchable DR or energy storage resources and, so long as qualifying criteria and MOO conditions are met, should not be excluded. Their exclusion presents barriers to viable projects being developed today, and CESA sees no clear policy basis for their exclusion. To the extent that concerns may exist about ‘double counting’, the Commission’s recent decision on multiple-use application issues in the Energy Storage proceeding (R.15-03-011) provides sufficient and appropriate guidance and controls to address these concerns.<sup>8</sup>

**D. Resources that have modest transition times to go from charging to discharging should be authorized for Flexible RA value that ranges from the appropriately determined Pmax to the appropriately determined Pmin.**

D.14-06-050 excludes bi-directional energy storage resources with even modest transition times from eligibility for EFCs that cover their full range from Pmax to Pmin, where the Pmin is negative (indicating ‘charging’).<sup>9</sup> This should be modified so that resources with brief ‘transition times’ can be eligible for a more reasonable and full-range Flex RA value. Some pump-hydro units have transition times yet provide important flexibility and so should be authorized while being measured and valued appropriately.

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<sup>7</sup> D14-06-050, p. B-4.

<sup>8</sup> D.18-01-003, *Decision on Multiple-Use Application Issues*, issued on January 17, 2018.

<sup>9</sup> D14-06-050, p. B-20.



### III. CONCLUSION

CESA appreciates the opportunity to submit these Track 1 proposals for the RA proceeding, which is important and impactful for reliability and for shaping the fleet. CESA greatly looks forward to working with the Commission and parties on the further development of a durable and robust RA program.

Respectfully submitted,



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