

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

Order Instituting Rulemaking to Continue  
Implementation and Administration, and  
Consider Further Development, of California  
Renewables Portfolio Standard Program.

Rulemaking 18-07-003  
(Filed July 12, 2018)

**COMMENTS OF THE CALIFORNIA ENERGY STORAGE ALLIANCE  
ON THE PROPOSED DECISION ADOPTING MODELING REQUIREMENTS FOR  
RENEWABLES PORTFOLIO STANDARD PROCUREMENT**

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September 12, 2019

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In accordance with the Rules of Practice and Procedure of the California Public Utilities Commission (“Commission”), the California Energy Storage Alliance (“CESA”) hereby submits these comments to the *Proposed Decision Adopting Modeling Requirements for Renewables Portfolio Standard Procurement* (“PD”), issued by Administrative Law Judge (“ALJ”) Nilgun Atamturk on August 23, 2019.

**I. INTRODUCTION.**

CESA generally supports the PD that makes a number of changes to align the effective load carrying capability (“ELCC”) modeling requirements and methodologies of the Renewables Portfolio Standard (“RPS”) Program (R.18-07-003) with the Integrated Resource Planning (“IRP”) proceeding (R.16-02-007).<sup>1</sup> While some differences in the methodology are warranted given the different purposes of these modeling efforts and ELCC methodologies, CESA agrees with the PD that the valuation of the reliability contribution of resource additions should be done with the “high accuracy to ensure grid reliability.”<sup>2</sup> Fundamentally, the reliability benefits of adding storage to

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<sup>1</sup> PD at p. 6.

<sup>2</sup> *Ibid* at pp. 14-15.

RPS resources should be reasonably valued and recognized. As such, CESA supports the many changes to the modeling requirements for ELCC values to be used in least-cost best-fit (“LCBF”) methodologies for RPS resource bid ranking and selection, which collectively add greater granularity to assessment of the reliability contributions of RPS resources across different locations and technology types.

CESA believes vintaging issues can be complex and may affect existing and new contracts alike. As such, CESA is mixed on the use of marginal versus average ELCCs. CESA does not wish to endorse an approach wherein new capacity is valued at extremely low levels, but CESA also wishes to ensure the values of storage additions are properly recognized. The proposed use of *marginal* ELCC values as opposed to average ELCC values, as done today, emphasizes the incremental procurement benefits for investor-owned utilities (“IOUs”) to procure RPS resources that more accurately contribute to reliability needs, but this approach may infer a material vintaging protocol that CESA is hesitant to sign off on at this time. Importantly, CESA strongly supports the creation of new resource class sub-types that account for RPS-paired-storage configurations, which have significant potential to boost the marginal ELCC values of standalone RPS resources.

In addition to the above matters, CESA requests two major additions to the PD. First, to ensure reliability counts that are accurate and aligned, changes are needed in the ELCC and qualifying capacity (“QC”) capacity counting methodologies for hybrid resources in the Resource Adequacy (“RA”) proceeding, where marginal ELCC values should be similarly used, so long as not unduly precedent-setting. Second, ELCC calculations should be directed and conducted for shorter-duration storage pairings as well (*e.g.*, thirty-minute or one-hour duration) but should only apply to projects that plan to have charging constraints to the paired storage resource. For paired

storage resources without any charging constraints, rather than conducting a combined resource ELCC calculation, an additive QC calculation approach is appropriate. CESA explains further in our comments below.

**II. THE ELCC CALCULATIONS SHOULD BE CONDUCTED FOR SHORT-DURATION STORAGE RESOURCES AS WELL AND ONLY APPLY TO RESOURCES WITH CHARGING CONSTRAINTS.**

CESA appreciates the PD's order to direct the IOUs to analyze storage pairings with solar and wind resources in marginal ELCC studies for each of the locations. In general, there is urgency to develop capacity counting methodologies for combined resources, especially considering the hybrid resources comprise 41.2% of the total requested megawatt capacity in the generator interconnection queue at the California Independent System Operator ("CAISO").<sup>3</sup> In addition to the CAISO's Hybrid Resources Initiative, CESA appreciates that the Commission is more deeply considering these issues in the RA proceeding, including the most recent series of workshops held on September 5-6, 2019. However, while the changes in the PD are directionally positive and appropriate to account for the growing prevalence of paired-storage resources, CESA believes the PD should be modified in two major ways in regards to how and in what situations the marginal ELCC studies should apply to RPS-paired-storage resources.

First, CESA disagrees with the PD's determination that only four-hour duration storage pairings with solar and wind should be analyzed in the marginal ELCC studies. The PD justified this determination based on the fact that most storage deployments are for four-hour-duration storage systems, leading to little value to be seen in conducting additional modeling for shorter-

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<sup>3</sup> See the CAISO's *Hybrid Resources Issue Paper* published on July 18, 2019 at p. 3. <http://www.aiso.com/Documents/IssuePaper-HybridResources.pdf>

duration solutions. Specifically, the Commission said that it “will not require the IOUs to model them until shorter duration storage resources constitute a more significant share of contracted resources.”<sup>4</sup> This logic might be flawed because it does not consider how capacity counting drives project design. A reason why four-hour storage projects are planned and deployed is because there is an assurance of RA value, and projects would also be designed with shorter-duration storage if capacity values for such projects were known. CESA understands that ELCC modeling can be a time- and resource-intensive process, where every iteration of project pairings and configurations would be difficult to assess. At the same time, CESA finds the rationale for limiting the ELCC modeling requirements to four-hour storage systems as flawed since this historical storage deployment has been due to the four-hour QC counting convention for standalone energy storage systems and the urgent RA needs faced by LSEs. Such historical deployment data of standalone storage resources may not be indicative of likely or most economic RPS-paired-storage bids, especially since sellers and buyers have lacked an economic signal (*i.e.*, capacity count for combined resources) for optimal hybrid project development and procurement. Furthermore, four-hour storage can use an ‘additive’ counting methodology since the four-hour storage already has standalone RA value.

CESA thus strongly disagrees with the PD in terms of the value that the Commission and the IOUs could find from modeling short-duration storage pairings of energy storage. CESA sees significant benefit from a marginal ELCC perspective where small amounts (relative to solar or wind nameplate capacity) of shorter-duration storage can produce ‘outsized’ boosts in the capacity value of the combined resource. In the IRP’s capacity expansion modeling, the E3 modeling team

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<sup>4</sup> PD at p. 18.

also identified over 2,000 MW of one-hour storage additions through 2030 to meet the state’s greenhouse gas (“GHG”) emission goals and reliability objectives.<sup>5</sup> Notwithstanding our views on the limitations of the RESOLVE modeling, the adopted Preferred System Plan<sup>6</sup> clearly identified how one-hour storage resources may play an important role in achieving the IRP’s goals, such that shorter-duration storage pairings should not be dismissed in these marginal ELCC studies in this proceeding. CESA thus recommends that the IOUs analyze both thirty-minute, one-hour, two-hour, three-hour, and perhaps longer storage duration pairings in any marginal ELCC studies. Minimally, if the range of storage duration pairings must be limited due to modeling constraints, CESA recommends that either thirty-minute and one-hour duration storage pairings be prioritized in these marginal ELCC studies along with the PD’s recommended four-hour duration storage pairing.

Second, and more importantly, the Commission should correctly identify the type of RPS-paired-storage resources where the combined resource ELCC methodology should apply and where an additive QC methodology should apply. CESA believes that the appropriate capacity valuation methodology depends partly on whether the RPS-paired-storage resource has charging constraints, likely due to the federal investment tax credit (“ITC”) that requires at least 75% charging of the paired storage resource with the co-located ITC-eligible renewable generation facility. In cases where there is no charging constraint (*i.e.*, the paired storage resource can charge from the on-site generating facility or from the grid), an additive QC approach should be used

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<sup>5</sup> Attachment A of *Administrative Law Judge’s Ruling Seeking Comment on Proposed Preferred System Portfolio and Transmission Planning Process Recommendations*, issued on January 11, 2019 in R.16-02-007 at p. 36.

<sup>6</sup> While the Hybrid Conforming Plan consisted of mostly four-hour batteries based on LSE Plans submitted in the IRP, the Commission adopted the Reference System Plan (which consists of mostly one-hour storage additions) as the Preferred System Plan given the “critical issue” of ensuring the appropriate mix of renewable resource types and renewable integration resources. See D.19-04-040 at p. 105.

where the RPS-paired-storage resource would have its combined capacity value calculated based on the sum of the marginal ELCC of the standalone RPS resource and the full four-hour-equivalent QC value of the storage resource. This additive QC approach is appropriate given that the QC calculation for the paired storage resource should not be any different from a standalone storage resource, where storage charging (from either the grid or onsite facility) and discharging can be optimized. As such, RPS-paired-storage projects without charging restrictions should be omitted from the marginal ELCC studies and have a capacity value established in both the RA and RPS proceedings using the additive QC methodology – *i.e.*, ELCC value of the standalone RPS resource and the QC count of the paired storage.

However, in cases where there are charging constraints for the RPS-paired-storage resource (*e.g.*, to claim the ITC), CESA believes that a combined resource ELCC calculation could be pursued given that the paired storage resource is unable to provide capacity at all hours of the day (*i.e.*, 24x7 must-offer obligations), such as during the periods when the storage device is charging from the onsite generating facility. Unlike the no-charging-constraints counterpart, the storage resource with charging constraints would be less able to be dispatched and optimized to address loss-of-load expectation (“LOLE”) events if they occur during charging periods, which should ultimately be reflected in their marginal ELCC values. CESA thus recommends that only charging-constrained RPS-paired-storage resources be included in the marginal ELCC studies for now.

Finally, CESA understands that these marginal ELCC studies will be focused on resource classes and sub-types rather than pursuing project-specific capacity valuations. CESA does not oppose this class-based marginal ELCC study/calculation at this time given modeling constraints, but the RPS and RA proceedings should continue to consider capacity counting and valuation

methodologies that account for paired-resource differences. There are many different configurations of paired storage resources where the storage duration and the storage-to-generator sizing ratio can have significant and different impacts on the capacity value of the combined resource. Ideally, a project-specific capacity valuation approach would send the most accurate signal to both sellers and buyers to deploy RPS-paired-storage resources that deliver the most cost-effective outcome for ratepayers. The merits of the exceedance methodology or the development of ELCC calculators based on representative profiles thus should continue to be explored in the RA and RPS proceedings.

**III. THE ELCC VALUES ACROSS PROCEEDINGS SHOULD BE ALIGNED TO ENSURE ACCURATE RELIABILITY COUNTS AND APPLICABILITY OF THE NEW METHODOLOGY TO ALL LOAD-SERVING ENTITIES.**

CESA is hesitant to endorse any marginal versus average methodology if such an approach will be precedent setting. That said, for near-term purposes, CESA agrees with the PD that the IOUs should be given the proper economic signals to select or prefer the best-fit RPS resources that contribute to a greater degree to reliability. Without such a signal, the IOUs may be selecting and contracting for resources that have overestimated reliability benefits. CESA thus believes that marginal approaches, which will reflect lower ELCC ratings than average for greater solar penetrations should be used or explored in the near term. The issue of vintaging can create many complexities and potentially even perverse incentives. Consider that without changes to the average ELCC counting approach in the RA proceeding, the IOUs will be faced with conflicting signals in terms of how to value the reliability benefits of RPS resources. For example, even if a particular RPS resource has a low marginal ELCC value, an IOU may ultimately value the capacity value of the resource according to a potentially higher average ELCC counting methodologies since the IOU complies with RA showing requirements based on these counts. In this situation,



not only does the IOU not effectuate the new marginal ELCC evaluation requirements, but it also may pose reliability issues if this RPS resource is procured to a higher average capacity value that overestimates the actual marginal capacity value that it provides, leading to potential RA shortfalls when the RA portfolio is *operationalized* in the market (even as there is no *RA compliance* shortfall in their showing). While the PD focuses on alignment between the forward-looking planning and procurement proceedings, CESA believes there is also important value in aligning RPS procurement signals with shorter-term reliability planning under the RA Program.

One of the potential benefits of utilizing the marginal ELCC methodology is to realize the capacity ‘boost’ that can be provided by pairing standalone RPS resources with energy storage. Under an average ELCC approach in the RA Program, an RPS-paired-storage resource may have the combined capacity value diluted by other standalone solar or wind resources in the RA portfolio. By contrast, under a marginal ELCC approach with separate resource class sub-types, the capacity boost is recognized and valued in the LCBF methodology of the RPS Program. However, since the RA Program has not established QC counting methodologies for combined resources or recognized RPS-paired-storage resources as separate and different from standalone RPS resources, such RPS-paired-storage resources are likely to be under-counted for its reliability value. One possibility of this misalignment in ELCC methodologies between the RA and RPS proceedings is that the IOU procures based on the RA capacity count, which will likely cause no paired storage resources to be procured and deployed given the lack of a differentiated capacity count in the RA Program. Even if the IOU procures resources in the RPS Program based on marginal ELCC values differentiated by resource class sub-types, the IOU may end up over-procuring for RA resources since the capacity count of the RPS-paired-storage resource is under-counted and under-valued.

Furthermore, CESA recommends alignment of the ELCC valuation methodologies with the RA proceeding in order to guide non-IOU load-serving entities (“LSEs”) to similarly have the economic signals to value the reliability contributions of new RPS resource additions. As CESA understands it, the Commission has limited or no jurisdiction over the procurement evaluation methodologies for community choice aggregators (“CCAs”) and energy service providers (“ESPs”), but the Commission also observed in the IRP proceeding that the majority of resource buildout will be from CCAs, largely driven by CCA load growth. That is, new RPS resource procurement will occur less and less from the Commission-jurisdictional RPS Programs of the IOUs but from the RPS procurement processes of the CCAs.<sup>7</sup> Thus, to effectuate the procurement signals intended in this PD, the appropriate resource additions will not be incentivized without a change to the capacity counting methodologies in the RA Program, which are broadly applicable to all LSEs, regardless of Commission jurisdiction over procurement evaluation methodologies.

For all of the above reasons, CESA recommends that the Commission act urgently to align the RPS and RA Programs using marginal ELCC capacity methodologies, at least for the short term, that differentiate these calculations based on resource class sub-types, as outlined in the PD. CESA understands that this alignment is an issue that may need to be resolved in the RA proceeding, but given that the Commission proposes to adopt a new marginal ELCC methodology, it is prudent for this PD to direct further action in the RA proceeding to expeditiously address combined resource ELCC and QC valuation methodologies to achieve this alignment. Similar to how Decision (“D.”) 18-02-018 in the IRP proceeding directed the RPS proceeding to align modeling conventions, a similar type of directive or determination could be made in this PD and

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<sup>7</sup> D.19-04-040, *Decision Adopting Preferred System Portfolio and Plan for 2017-2018 Integrated Resource Plan Cycle*, issued on May 1, 2019 in R.16-02-007 at p. 90.

<http://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M287/K437/287437887.PDF>

this proceeding to align the capacity counting methodologies between the RA and RPS proceedings.

**IV. CONCLUSION.**

CESA appreciates the opportunity to submit these comments on the PD and looks forward to working with the Commission and stakeholders in the RPS and RA proceedings. CESA reiterates our urgent call for the Commission to establish capacity counts in the RA proceeding to align with the ELCC modeling methodologies in the RPS proceeding. Hybrid resources will continue to grow in importance as grid conditions evolve, so timely action from the Commission will ensure reliability values are accurately valued and counted and provide greater certainty and clearer procurement signals for buyers and sellers alike.

Respectfully submitted,



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Date: September 12, 2019