

**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)

**REPLY COMMENTS OF THE CALIFORNIA ENERGY STORAGE ALLIANCE  
ON THE ADMINISTRATIVE LAW JUDGE'S RULING REQUESTING COMMENTS  
ON STAFF PROPOSAL ON EFFECTIVE LOAD CARRYING CAPABILITY, TIME OF  
DELIVERY FACTORS, AND PROJECT VIABILITY**

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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”)<sup>1</sup> hereby submits these reply comments to the *Administrative Law Judge’s Ruling Requesting Comments on Staff Proposal on Effective Load Carrying Capability, Time of Delivery Factors, and Project Viability* (“Ruling”), issued by Commissioner Clifford Rechtschaffen and Administrative Law Judge (“ALJ”) Nilgun Atamturk on September 12, 2018.

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<sup>1</sup> 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>).

## **I. INTRODUCTION.**

CESA generally supports the Staff Proposal recommending several key changes to the Effective Load Carrying Capability (“ELCC”) methodology, with several modifications as proposed in our opening comments. These changes will more effectively value the capacity value of different Renewables Portfolio Standard (“RPS”) eligible resources through granular distinctions by location and technology “class” or “sub-class” (*e.g.*, pairing with energy storage). Upon reviewing other parties’ comments, this view of support for the new ELCC methodology appears to be generally shared by the majority of parties. Specifically, no parties appeared to oppose the technology sub-class of paired storage resources, though there were differences in the variations of paired storage resources to evaluate through the ELCC methodology. CESA thus focuses our reply comments on some of the parties’ comments on paired storage issues.

## **II. SHORTER DURATION ENERGY STORAGE SHOULD ALSO BE STUDIED AS A SUB-CLASS WITH THE ELCC METHODOLOGY.**

The Staff Proposal proposed to create sub-classes of solar-paired-storage and wind-paired storage resources with four-hour energy storage durations. In our opening comments, CESA expressed how, instead of a ‘sub-class approach’ for calculating the ELCC values of paired-storage resources, each paired storage variation would ideally be calculated separately and individually given the variety of energy storage sizing, duration, and intended operations. The Small Business Utility Advocates (“SBUA”) captured well the complexities of paired storage resources by highlighting how the ELCC value may depend on a number of different factors, including duration, algorithm for charge and discharge, rules and objectives, and contract structure.<sup>2</sup> Green Power Institute (“GPI”) also commented that energy storage durations should not be specified,

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<sup>2</sup> SBUA’s comments at pp. 4-5.

presumably, for similar reasons.<sup>3</sup> CESA agrees with these general points but understands that such an approach would increase the complexity and time of conducting ELCC modeling and thus supports the Staff Proposal’s sub-class approach as a reasonable and manageable approach.

In taking this sub-class approach, several parties conveyed the same view as CESA around how paired energy storage resources with four-hour durations would already qualify for standalone Resource Adequacy (“RA”) value and thus should have this capacity value ascribed to the energy storage resource when paired with RPS resources. Taking an ELCC approach for paired storage resources of four-hour duration may be less useful, as San Diego Gas and Electric Company (“SDG&E”) explained.<sup>4</sup> For such paired storage resources that would already qualify for standalone RA value, several parties concurred with CESA’s views that an additive approach may be appropriate.<sup>5</sup> Yet, CESA supports the Commission studying the ELCC values of paired storage resources with four-hour durations, but also agrees with SDG&E that other paired storage resource durations should also be analyzed.<sup>6</sup> Specifically, shorter-duration energy storage resources (*e.g.*, 30-minute, 1-hour), which may not produce significant standalone RA value due to the minimum four-hour duration requirement, may provide ‘outsized’ boosts in ELCC values when paired with intermittent solar and wind resources.

### **III. VIEWS THAT PAIRED STORAGE BEING “INHERENTLY” LESS VALUABLE IS UNSUBSTANTIATED.**

The California Wind Energy Association (“CalWEA”) claims that “paired storage resources are inherently less valuable than stand-alone storage because of operational constraints

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<sup>3</sup> GPI’s comments at p. 4.

<sup>4</sup> SDG&E’s comments at p. 3.

<sup>5</sup> SBUA’s comments at pp. 3, 6 and Calpine’s comments at p. 4.

<sup>6</sup> SDG&E’s comments at p. 3 and SCE’s comments at pp. 4-5.

associated with paired storage and because paired storage resources are not likely to offer the locational benefits that stand-alone storage can provide” and how “the value of paired projects is unique to each such paired facility.”<sup>7</sup> These views are unsubstantiated and premature. Further analysis is needed of paired storage configurations in the Integrated Resource Planning (“IRP”) and RA proceedings to understand the optimal means to procure energy storage. Pacific Gas and Electric Company (“PG&E”), for example, commented that their analysis found material boosts in ELCC value when energy storage is paired with solar resources, especially at higher RPS penetrations, thus indicating that there may be significant value in such hybrid configurations.<sup>8</sup>

Furthermore, current models used in these proceedings are still limited in how they model hybrid storage configurations and CESA understands that refinements to these tools are being considered in the 2019 IRP cycle. In the IRP, generation resources and energy storage are modeled and selected separately. Despite these limitations, preliminary production cost modeling results show that energy storage resources “play a key role in increasing the load carrying value of wind and solar” resources.<sup>9</sup> It will be important to understand how paired storage operations may impact the generation profile of the solar or wind resource, but the value of energy storage to improve corresponding ELCC values is evident and may similarly hold true when paired with variable RPS resources.<sup>10</sup>

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<sup>7</sup> CalWEA’s comments at pp. 2-3.

<sup>8</sup> PG&E’s comments at p. 4.

<sup>9</sup> *Administrative Law Judge’s Ruling Seeking Comment on Production Cost Modeling, Attachment 1: IRP Production Cost Modeling with the Reference System Plan and the 2017 IEPR: SERVIM model results*, filed on September 24, 2018 in R.16-02-007, p. 66.  
<http://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M229/K104/229104318.PDF>

<sup>10</sup> In the spirit of furthering analysis on this matter, CESA is working on modeling and analysis to demonstrate the ELCC value of paired storage resources. Upon completion of this work, CESA will submit this analysis into the record in the RPS, IRP, and/or RA proceeding.

**IV. ELCC METHODOLOGIES SHOULD BE MADE CONSISTENT BETWEEN PLANNING, PROCUREMENT, AND CAPACITY COUNTING.**

Southern California Edison Company (“SCE”) discussed how the “value attributed to a resource for planning, procurement, and RA purposes must be the same value to avoid misalignment of incentives,”<sup>11</sup> while the Large-Scale Solar Association (“LSA”) argued that the “determination of the ELCC for resources should be based on a single set of quantifiable requirements and capabilities, calculated and applied consistently in every proceeding.”<sup>12</sup> Along the same lines, if RPS-paired storage resources are valued through the proposed ELCC methodology modifications, San Diego Gas and Electric Company (“SDG&E”) added that a Net Qualifying Capacity (“NQC”) methodology should be created as well.<sup>13</sup> CESA agrees with these points and believes that there should be linkages between what is planned and procured in the long term with what is counted for capacity and reliability purposes in the short term. Otherwise, there may be risks in over-counting or under-counting reliability contribution of RPS resources and/or risk of overpaying or under-paying for the capacity value that the resource actually provides.

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<sup>11</sup> SCE’s comments at p. 2.

<sup>12</sup> LSA’s comments at p. 1.

<sup>13</sup> SDG&E’s comments at p. 3.

V. **CONCLUSION.**

CESA appreciates the opportunity to submit these reply comments to comments submitted by parties in response to the Ruling and looks forward to working with the Commission and stakeholders in the RPS proceeding.

Respectfully submitted,



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