

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

Order Instituting Rulemaking to consider policy and implementation refinements to the Energy Storage Procurement Framework and Design Program (D.13-10-040, D.14-10-045) and related Action Plan of the California Energy Storage Roadmap.

R.15-03-011  
Filed March 26, 2015

**REPLY COMMENTS OF THE CALIFORNIA ENERGY STORAGE ALLIANCE  
ON THE DECISION ON TRACK 1 ISSUES**

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In accordance with 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 on the *Proposed Decision on Decision on Track 1 Issues*, issued by Assigned Commissioner Carla J. Peterman on December 15, 2015 (“Proposed Decision”).

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<sup>1</sup> 1 Energy Systems Inc., Advanced Microgrid Solutions, AES Energy Storage, Aquion Energy, Brookfield, CODA Energy, Consolidated Edison Development, Inc., Cumulus Energy Storage, Customized Energy Solutions, Demand Energy, Dynapower Company, LLC, Eagle Crest Energy Company, East Penn Manufacturing Company, Ecoult, ELSYS Inc., eMotorWerks, Energy Storage Systems, Inc., Enersys, Enphase Energy, EV Grid, GE Energy Storage, Geli, Gordon & Rees LLP, Green Charge Networks, Greensmith Energy, Gridtential Energy, Inc., Hitachi Chemical Co., Ice Energy, Imergy Power Systems, Innovation Core SEI, Inc. (A Sumitomo Electric Company), Invenergy LLC, JuiceBox Energy, K&L Gates, LG Chem Power, Inc., LightSail Energy, Lockheed Martin Advanced Energy Storage LLC, LS Power Development, LLC, Mitsubishi Corporation (Americas), Mobile Solar, NEC Energy Solutions, Inc., NextEra Energy Resources, NRG Solar LLC, OutBack Power Technologies, Panasonic, Parker Hannifin Corporation, Powertree Services Inc., Primus Power Corporation, Princeton Power Systems, Recurrent Energy, Renewable Energy Systems Americas Inc., S&C Electric Company, Saft America Inc., Sharp Electronics Corporation, Skylar Capital Management, SolarCity, Sony Corporation of America, Sovereign Energy, Stem, SunEdison, SunPower, Toshiba International Corporation, Trimark Associates, Inc., Trina Energy Storage, Tri-Technic, Wellhead Electric. The views expressed in these Reply 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 directs these reply comments to opening comments filed by parties on January 4, 2016 on the following topics: 1) the Office of Ratepayer Advocates (“ORA”) and Sierra Club are correct in that energy storage has tremendous greenhouse gas (“GHG”) emission reduction benefits that are not adequately captured at present; 2) the California Hydrogen Business Council (“CHBC”), Pacific Gas & Electric (“PG&E”), and Southern California Gas Company (“SCG”) are wrong in their comments proposing that hydrogen power-to-gas (“P2G”) energy storage should be eligible for AB 2514-eligible energy storage procurement pursuant to the energy storage targets set by D.14-10-045; and 3) the Commission should remove and transfer power charge indifference adjustment (“PCIA”) mechanism issues to either a new PCIA-specific proceeding or another Commission proceeding more focused on generic cost recovery and allocation issues.

## **II. THE GHG EMISSION REDUCTION BENEFITS OF ENERGY STORAGE MERITS FURTHER EVALUATION AND SHOULD BE QUANTIFIED.**

ORA and Sierra Club, as well as CESA, have consistently called for the Consistent Evaluation Protocol (“CEP”) to be modified to quantify GHG emissions reduction benefits, but the Proposed Decision finds that it is premature to make changes to the current CEP at this time, which captures “first order” GHG costs and benefits that are incorporated into price forecasts used to establish the net market value of energy storage offers investor-owned (“IOU”) procurement solicitations. Alternatively, ORA and Sierra Club both commented that energy storage’s GHG emissions reduction benefits ought to be evaluated and quantified in another procedural venue, with ORA recommending consideration of these issues in Track 2 of this

proceeding<sup>2</sup> and Sierra Club recommending modeling work to be done on GHG reduction benefits of energy storage in the Long-Term Procurement Planning (LTPP) proceeding (R.13-12-010).<sup>3</sup> CESA supports the comments by ORA and Sierra Club recommended in this regard and believes that the Commission should expeditiously initiate close evaluation of the GHG reduction benefits of energy storage in this proceeding, given the guiding principles of AB 2514 and the Integrated Resources Planning proceedings in which GHG emissions reductions is one of three major goals for compliance with Senate Bill (“SB”) 350. The current CEP approach very likely understates some of the GHG emission reduction benefits. As part of a portfolio of energy storage, generation, and load resources, energy storage can change which generation units are turned on (commitments of the fleet), and so can lower system-wide GHG emissions. References to the marginal resource’s heat rate do not readily value the benefits of reduced unit commitments. GHG emissions costs associated with turning units on may not even manifest in the CAISO’s power prices at some times.<sup>4</sup> They also don’t capture the benefits of reduced generation curtailments. System-wide power prices may reflect a single marginal gas unit, but energy storage resources could be reducing curtailments at the same time, delivering clean energy at later times, and again reducing the GHG emission impact of the commitment and dispatch scheme.

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<sup>2</sup> ORA Opening Comments, p. 5.

<sup>3</sup> Sierra Club Opening Comments, p. 3-4.

<sup>4</sup> In some instances, the costs of committing a unit and operating it at its ‘p-min’ are accounted for and recovered out of the market, *e.g.* through the Bid-Cost Recovery mechanism or through Commitment Cost rules. These instances can reveal how power prices insufficiently reflect all the costs of committing and running the unit.

### **III. HYDROGEN POWER-TO-GAS ENERGY STORAGE SHOULD NOT BE ELIGIBLE.**

The Proposed Decision reaffirms the Commission’s finding in D.14-10-045 that hydrogen-based power-to-gas (“P2G”) is an ineligible energy storage technology because a “natural gas pipeline” does not qualify as the storage component of stored hydrogen. CHBC, PG&E, and SCG each challenge the Proposed Decision’s conclusion that hydrogen P2G energy storage is not eligible because, according to their assertions, P2G meets the Public Utilities (P.U.) Code Section 2835 definition of eligible energy storage and is important to attaining SB 350 goals. These parties also challenge the Proposed Decision’s interpretation of D.14-10-045 approving the energy storage procurement applications of the IOUs. SCG argues that the Proposed Decision’s reference to the “natural gas pipeline” not qualifying as the storage component of biogas projects in D.14-10-045 is an “erroneous precedent” because such a biogas project “involves no conversion and storage of electrical energy.”<sup>5</sup>

CESA supports the Proposed Decision’s conclusion that hydrogen-based P2G is an ineligible energy storage technology because the wording of D.14-10-045 is very clear and does not require any further interpretation or clarification regarding its rationale or policy implications. D.14-10-045 is grounded on the plain language of AB 2514 and supports biogas projects if coupled with a “suitable storage component”, which it deemed “natural gas pipelines” are not.<sup>6</sup> SCG attempts to find some fallacy in the Proposed Decision’s analogy to biogas by arguing that P2G is “different” in that it involves “conversion and storage of electrical energy from the grid” and biogas does not, but such an asserted difference is irrelevant in relation to

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<sup>5</sup> SCG Opening Comments, p. 3.

<sup>6</sup> D.14-10-045, pp. 56-57, and 61-62.

energy storage eligibility. As noted in D.14-10-045,<sup>7</sup> the Commission is demonstrably on solid ground in exercising its “discretion to limit or exclude a particular technology.”<sup>8</sup>

Furthermore, the use of existing infrastructure simply fails to comply with the P.U. Code Section 2835(c) definition of eligible energy storage systems requiring “new” system installations. If *existing* natural gas pipelines are used as a component of a proposed hydrogen-based P2G system, then such a “storage system” would not be “new” or “installed” and thus inconsistent with P.U. Code Section 2835(c). In its Opening Comments, SCG also makes a spurious comparison between hydrogen-based P2G that stores energy in natural gas pipelines to “storage tanks in a flow battery, the storage vessels in a compressed air system, or the ice in an electricity-to-ice system”.<sup>9</sup> These analogies are erroneous considering these kinds of components are comparable to the “man-made mechanisms” cited explicitly in D.14-10-045, and represent separate, special-purpose containers that qualify as “new” or “installed” as defined by P.U. Code Section 2835(c). Given this solid legal and policy grounding, the use of natural gas pipelines to store hydrogen-based P2G should receive the same treatment as biogas projects did in D.14-10-045, where it would qualify as an eligible technology if storage of energy is done in a separate, special-purpose container, such as pressurized vessels or man-made underground salt caverns.

Finally, CESA notes that there is no record of any kind in this proceeding addressing SCG’s proposal to “clarify” that hydrogen or methanated hydrogen created using electricity as the energy feedstock and used by a distributed generator or a central power plant to generate electricity is eligible to meet storage capacity targets. The Commission should continue to

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<sup>7</sup> D.14-10-045, p. 60.

<sup>8</sup> *Ibid.*, p. 62.

<sup>9</sup> SCG Opening Comments, pp. 3-4.

refrain from taking up this issue, as it has already declined to do in the Proposed Decision. In case the Commission decides to pursue this clarification now, CESA argues that the scenario described by SCG still does not qualify as eligible energy storage. Referring to P.U. Code Section 2835(a)(1), CESA notes that the statutory definition of energy storage involves three functions: “absorbing,” “storing,” and “dispatching.” While not stated explicitly, it is almost certainly the case that the statute and the Commission contemplated that all three functions would be performed by a single system belonging to a single entity under a single contract with the IOU. This is consistent with all eligible storage technologies considered to date. In the P2G case, however, the three functions are generally understood to be performed by different systems belonging to different entities under different contracts and thus should be deemed ineligible under the Storage Procurement Framework set up by D.10-12-007.

CESA therefore supports the Proposed Decision’s conclusion that hydrogen-based P2G is an ineligible energy storage technology and recommends the contrary proposal made by CHBC, PG&E, and SCG should be disregarded by the Commission.

#### **IV. COST RECOVERY AND ALLOCATION ISSUES SHOULD BE ADDRESSED IN A SEPARATE COMMISSION PROCEEDING.**

Generally, most parties that speak to the subject recommend the resolution of PCIA issues in this proceeding or another Commission policy proceeding rather than the IOUs’ Applications for Approval as considered in the Proposed Decision, while PG&E, Southern California Edison (“SCE”), Alliance for Retail Energy Markets (“AREM”), and Direct Access Customer Coalition (“DACC”) specifically envision consideration of PCIA issues in Track 2 of this proceeding. PCIA issues are so important in terms of policy implications that they should not be dealt with in fact-intensive Applications or General Rate Cases. CESA thus reiterates its



comments that the Commission should remove PCIA issues from the scope of this proceeding and consider them in either a new PCIA-specific proceeding or another Commission proceeding more focused on generic IOU cost recovery and allocation issues.

V. **CONCLUSION.**

CESA appreciates the opportunity to submit these reply comments on the Proposed Decision and looks forward to working with the Commission and stakeholders on Track 2 issues.

Respectfully submitted,



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