BEFORE THE PUBLIC UTILITIES COMMISSION

OF THE STATE OF CALIFORNIA

Order Instituting Rulemaking to Integrate and Refine Procurement Policies and Consider Long-Term Procurement Plans	R.13-12-010 (Filed December 19, 2013)

POST-WORKSHOP REPLY COMMENTS OF THE CALIFORNIA ENERGY STORAGE ALLIANCE

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POST WORKSHOP REPLY COMMENTS OF THE CALIFORNIA ENERGY STORAGE ALLIANCE

The California Energy Storage Alliance ("CESA")[1] respectfully submits these Post-Workshop Reply Comments in response to the December 19, 2013, *Ruling Establishing a Comment period Regarding Workshop Material* sent to the service list in R.12-03-014 by Administrative Law Judge David Gamson ("Ruling"), and the California Public Utilities Commission's ("Commission's") R.13-12-010, *Order Instituting Rulemaking* filed on December 19, 2013 ("OIR").

[1] The California Energy Storage Alliance consists of 1 Energy Systems, A123 Energy Solutions, AES Energy Storage, Alton Energy, American Vanadium, AU Optronics, Beacon Power, Bosch Energy Storage Solutions, Bright Energy Storage, BrightSource Energy, CALMAC, ChargePoint, Chevron Energy Solutions, Christenson Electric Inc., Clean Energy Systems Inc., CODA Energy, Deeya Energy, DN Tanks, Duke Energy, Eagle Crest Energy, EaglePicher, East Penn Manufacturing Co., Ecoult, Energy Cache, EnerSys, EnerVault, EVGrid, FAFCO Thermal Storage Systems, FIAMM Group, FIAMM Energy Storage Solutions, Flextronics, Foresight Renewable Systems, GE Energy Storage, Green Charge Networks, Greensmith Energy Management Systems, Growing Energy Labs, Gridtential Energy, Halotechnics, Hecate Energy LLC, Hydrogenics, Ice Energy, Innovation Core SEI, Invenergy, K&L Gates LLP, KYOCERA Solar, LightSail Energy, LG Chem Ltd., NextEra Energy Resources, NRG Energy, OCI Company Ltd., OutBack Power Technologies, Panasonic, Paramount Energy West, Parker Hannifin, PDE Total Energy Solutions, Powertree Services, Primus Power, RedFlow Technologies, RES Americas, S&C Electric Co., Saft America, Samsung SDI, Sharp Labs of America, Silent Power, SolarCity, Sovereign Energy Storage LLC, Stem, Stoel Rives LLP, Sumitomo Corporation of America, TAS Energy, Tri-Technic, UniEnergy Technologies, Xtreme Power, and Wellhead Electric Co. 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 hereby submits these post-workshop reply comments on the proposed joint CPUC-CEC-CAISO planning assumptions, scenarios, and renewable portfolios introduced jointly by the staff of the Commission in collaboration with the California Energy Commission ("CEC") and the California Independent System Operator ("CAISO"), to be used in the 2014 CPUC LTPP and 2014-15 CAISO TPP cycle on December 18, 2013. CESA's reply comments focus on Opening Comments related to demand and managed demand assumptions concerning transmission, distribution and customer- connected energy storage.

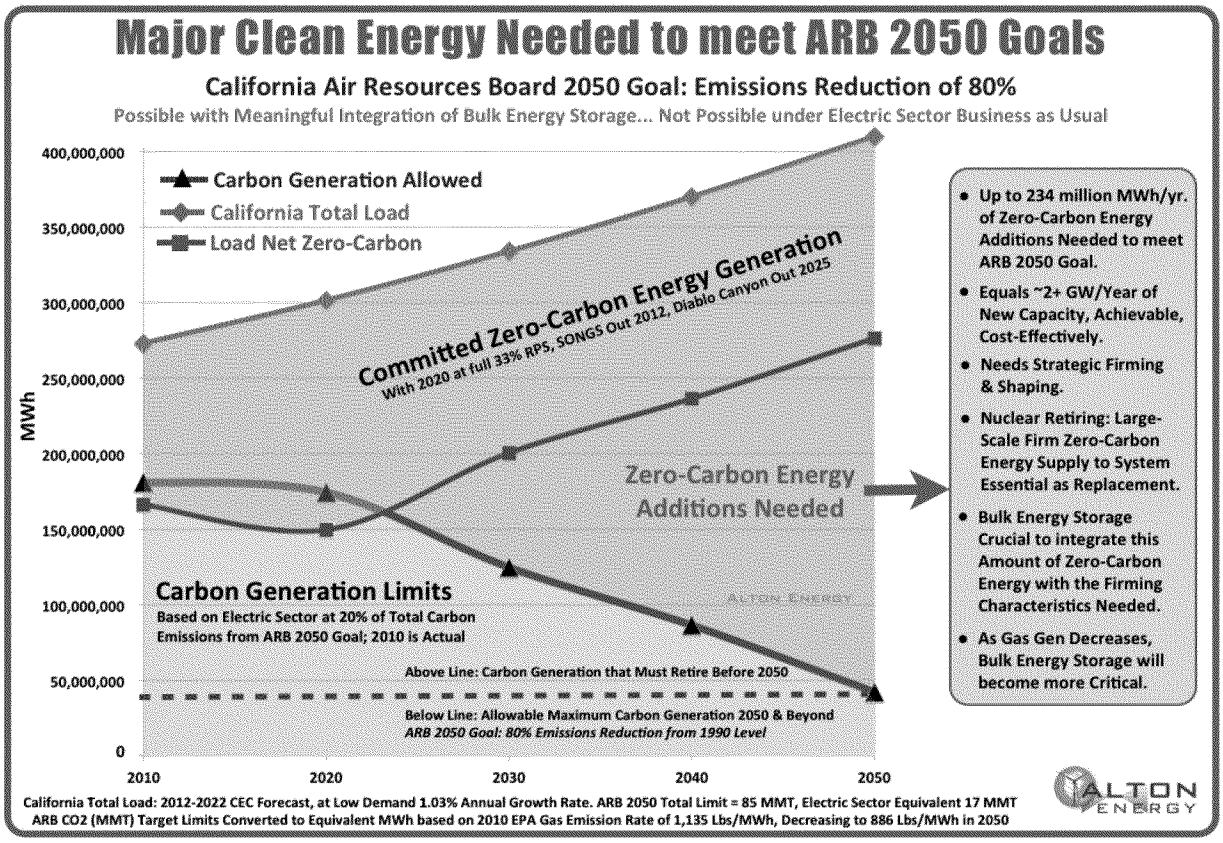
II. PLANNING AND MODELING SHOULD FOCUS ON GREENHOUSE GAS EMISSION REDUCTION GOALS.

CESA strongly urges the Commission to focus modeling work in this proceeding on a planning horizon based on greenhouse gas ("GHG") emission reduction goals established pursuant to AB 32 (*i.e.* the California Air Resources Board's ("CARB's") goal of 80% emissions reductions by 2050), rather than the renewables portfolio standard ("RPS") requirement.[2] There is a significant gap between GHG emission reduction goals and GHG emission reduction levels projected to result from achieving the state's 33% RPS requirement.[3] If this proceeding focuses solely on achieving a resource mix that meets RPS requirements, California will simply not be able to reach its GHG emission reduction goals.

CESA submits the below chart drawn from data compiled by the CEC, and created by Alton Energy, to illustrate the need for zero-carbon energy through 2050.

[2] This implicit assumption is reflected in nearly all of the Opening Comments filed by parties.

[3] *See*, Final Draft 2013 Integrated Energy Policy Report ("IEPR").



As shown in the above chart, there is a substantial need for additional new zero-carbon energy generation from 2020 to 2050 (about ~ 234 million MWh/year by 2050). Meeting the projected shortfall will require over 2,000 MW of new resource capacity per year (primarily wind and solar paired with energy storage). There are limited viable solutions to meet increasingly stringent the CARB's 2050 GHG emission reduction goals. However, these goals are attainable with meaningful integration of both bulk and distributed energy storage paired with clean zero-carbon energy generation resources.

Although it has been argued at the CAISO and the Commission that the 33% RPS generation requirement may be adequately met by integration with existing system resources, this perspective fails to adequately consider the CARB's much longer-term 2050 GHG emission reduction goal impacts. As California progresses toward reduced carbon emissions in its

generation fleet, it will become increasingly clear that the use of natural gas-fueled turbines as a bridging technology to integrate intermittent renewable generation resources will ultimately be a counterproductive policy. Natural gas generation will need to be operated in a highly variable fashion, and would most likely require large-scale curtailment of renewable generation resources to assure system reliability. In contrast, a combination of bulk and distributed energy storage resources would provide highly flexible capacity that can provide value to the grid during both charging and discharging operations. Sufficient quantities of energy storage would capture excess renewable generation to smooth the dispatch of gas generators and reduce the need for non-renewable generation overall, leading to dramatic reductions in GHG emissions.

CESA urges the Commission to model an energy resource mix that will help achieve the state's GHG emission reduction goals with appropriate levels of zero carbon energy. Energy storage located at the transmission, distribution, and customer-sited grid levels is the key to achieving AB 32 goals while meeting other needs to maintain reliability of the grid. Modeling should take into account GHG emissions over the lifetime of generation and other energy resources - while maintaining system efficiency, reliability, and cost-effective operation. Continued exclusive focus only on RPS requirements is likely to lead to unmet GHG emission reduction goals, along with stranded assets and potentially reduced grid reliability.

III. ENERGY STORAGE SHOULD BE INCLUDED IN ALL STAGES OF MODELING.

CESA urges the Commission to reject suggestions by Southern California Edison ("SCE"), San Diego Gas & Electric's, and Calpine among other parties that energy storage should be excluded from base case modeling runs. These parties generally argue that modeling should not initially include energy storage because uniform modeling assumptions for various

uses for energy storage resources have yet to be fully developed. Instead, they argue that this proceeding should first model a resource portfolio absent storage, then identify "gaps" in local capacity requirements and other system needs given that portfolio, and finally integrate energy storage (or other resources) to fill those "gaps." SCE clearly summarizes this approach in its response to Question 7:

> "The LTPP analysis should focus on finding the deficiencies in the system's capabilities, and then determine if energy storage (or another technology) is capable of filling that deficiency. To do this, the Commission should exclude energy storage, except for that acquired pursuant to the Track 1 Decision, from the initial modeling. Instead, energy storage, procured as required in the Energy Storage Decision, should be treated as a solution for any identified deficiencies found in the modeling. This method will allow parties to identify the best uses and capabilities for such energy storage in addition to helping inform future energy storage procurement."

CESA agrees that limited sensitivity modeling runs without energy storage will aid in identifying gaps where energy storage can most cost-effectively be applied. However conducting base case modeling runs without energy storage is directly contrary to the Commission's mandate in D.13-10-040 (the "Storage Decision") -namely, that energy storage procurement targets must be met, provided that the procured energy storage is cost-effective.

Modeling without storage simply because its capabilities are still being learned would set a dangerous precedent that favors incumbent technologies, disfavors rapidly-evolving technologies, and does not lead towards the most efficient, cost-effective resource mix. It also would treat energy storage differently from all other resource classes (under SCE's proposal, every single resource category except energy storage is fully included in the initial modeling runs). This approach would be directly contrary to existing Commission policy and precedent, and would clearly lead to sub-optimal procurement scenarios. It would cause procurement

targets under the Storage Decision to be in jeopardy of being unmet, which would defeat the Commission's clear policy direction.

It would be reasonable to agree on realistic operational characteristics for energy storage resources and use those characteristics in modeling. Energy storage should be treated exactly the same as all other resources - which means being considered from the beginning, rather than plugged in as a stopgap when all other options are exhausted.

There is more than ample information available today to adopt reasonable assumptions concerning the operational characteristics of energy storage at all three interconnection levels considered in the Storage Decision (transmission, distribution, and customer-side). There is near consensus in the Opening Comments filed by parties that transmission-level energy storage should be treated as a dispatchable resource. The Commission can and should adopt realistic modeling assumptions for all other applications of energy storage. These assumptions should be clearly identified and utilized for energy storage throughout all stages of modeling, which will put energy storage on an even footing with other resources and lead to intellectually defensible procurement scenarios.

IV. CONCLUSION.

CESA thanks the Commission for this opportunity to provide these reply comments on the workshop materials that were distributed on December 18, 2013.

Respectfully submitted,

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