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.	Rulemaking 13-12-010 (Filed December 19, 2013)

REPLY COMMENTS OF THE CALIFORNIA ENERGY STORAGE ALLIANCE ON ADMINISTRATIVE LAW JUDGE'S RULING SEEKING COMMENT ON INDEPENDENT SYSTEM OPERATOR'S 2016-17 TRANSMISSION PLANNING PROCESS AND FUTURE COMMISSION PROCEEDINGS

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The California Energy Storage Alliance ("CESA")[1] hereby submits these reply comments pursuant to the Rules of Practice and Procedure of the California Public Utilities Commission ("Commission"), on the *Administrative Law Judge's Ruling Seeking Comment on Assumptions and scenarios for Use in the California Independent System Operator's 2016-17 Transmission Planning Process and Future Commission Proceedings*, issued by Administrative Law Judge, Julie A. Fitch, on November 16, 2015 ("Ruling").

I. INTRODUCTION.

The Ruling seeks comments on the Assumptions and Scenarios proposed by the Commission staff and attached to the Ruling ("Proposal"). The Ruling notes that the Proposal

[1] 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., Energy Storage Systems, Inc., Enersys, Enphase Energy, EV Grid, GE Energy Storage, Gordon & Rees, 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, K&L Gates, LG Chem Power, Inc., LightSail Energy, Lockheed Martin Advanced Energy Storage LLC, LS Power Development, LLC, Mitsubishi Corporation (Americas), NEC Energy Solutions, Inc., NextEra Energy Resources, NRG Solar LLC, OutBack Power Technologies, Panasonic, Parker Hannifin Corporation, Pathfinder, Powertree Services Inc., Primus Power Corporation, Princeton Power Systems, Recurrent Energy, RES Americas Inc., S&C Electric Company, Saft America Inc., Sharp Electronics Corporation, Skylar Capital Management, SolarCity, Sovereign Energy, Stem, SunEdison, SunPower, Toshiba International Corporation, Trimark Associates, Inc., Trina Energy Storage, Tri-Technic, UniEnergy Technologies, Wellhead Electric, Younicos. 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).

was developed to support future resource planning studies both at both the Commission and the California Independent System Operator's ("CAISO's") Transmission Planning Process ("TPP"). The Proposal addresses very important fundamental analyses and so should be structured to best support useful modeling and analysis efforts.

II. SEVERAL ASPECTS OF THE PROPOSALS ON ENERGY STORAGE REQUIRE REVISION.

CESA appreciates the thoughtful work included in the Proposal regarding the role of energy storage in supporting grid modernization, renewables, reliability, and affordability. However, CESA highlights several modest but important aspects of the staff proposal for analysis of energy storage resources that require corrections.

First, CESA has several clarifications and potential concerns with Table 3. Table 3 assumes 280 MW of 2-hour energy storage as transmission-connected and applies capacity rating reductions to the total transmission-connected energy storage due to the inclusion of 2-hour storage. The basis for the level of 2-hour storage at the transmission level is not immediately clear. 2-hour energy storage has been and will continue to be deployed at residential levels, but the extent of 2-hour storage at the Transmission-level is difficult to ascertain. Certainly, varying durations of energy storage can offer an array of services, but the Proposal seems to assume that resources would be built with lower planning capacity at the transmission level. CESA believes this assumption may not be accurate or could certainly benefit from further explanation. In saying that "all of the 700 MW of new transmission-connected storage described above is assumed to provide capacity and flexibility as a default", the assumptions may significantly underestimate energy storage as transmission.[2]

[2] Proposal, p. 24.

Further, some further insights into the uses of energy storage projects is needed to fairly critique them. The Proposal states that "capacity limitations described above apply to power-flow type studies that are conducted in the CAISO's TPP."[3] If so, the relevance of the planning capacity derate for 2-hour transmission-connected energy storage seems unclear. The planning capacity metric seems less applicable to these matters. Therefore, clarification of the purpose of studies to use this assumption would likely help CESA to assess the reasonableness of the logic of derating planning capacity for certain energy storage projects. This line of thinking may apply to other assumptions that relate to energy storage as well.

Finally, Table 5 lists the Tehachapi Storage Project.[4] This project may be useful but, as reported in the U.S. Department of Energy Tehachapi Wind Energy Storage Project Fact Sheet, the project duration expires in May, 2016,[5] and the site may be decommissioned after the 5-year project timeline ended.[6] If this remains the case, the Commission's Energy Division staff should consider whether this project should remain 'in the fleet' of 2024.

III. A HIGH ENERGY STORAGE SCENARIO SHOULD BE ADDED.

CESA agrees with the Sierra Club that grid needs and the developing energy storage market demonstrate a need for assumptions beyond the 2013 Storage Framework Decision.[7] The Commission is actively exploring additional energy storage procurement in R.15-03-011 and

[3] Proposal, p. 25.
[4] Proposal, p. 28.
[5] US DOE Fact Sheet, "Southern California Edison Company: Tehachapi Wind Energy Storage Project," http://energy.gov/sites/prod/files/2015/05/f22/SoCal-Edison-Tehachapi-May2014.pdf
[6] "The site maybe selected for decommissioning based on the system's performance or to examine system components. Decommissioning tasks that will take place upon completion of the operations phase." Advice Letter 2482-E, p. 48, https://www.sce.com/NR/sc3/tm2/pdf/2482-E.pdf
[7] *Decision Adopting Energy Storage Procurement Framework and Design Program*, D.13-10-040, issued October 17, 2013.

numerous studies have been referenced in that proceeding regarding potential roles for energy storage.[8]

An appropriate avenue to reflect these expectations of both need and deployment of energy storage would be to assume further energy storage projects in several scenarios, including a high energy storage scenario. The Commission should therefore include both a high energy storage scenario as well as incremental levels of energy storage in other scenarios as appropriate. These energy storage levels should derive from energy storage goals suggested or studies cited in the Energy Storage Proceeding, including the relevant study by the Union of Concerned Scientists.[9] CESA has recommended a 5000 MW target to directly support the state renewables integration, greenhouse gas, market transformation, and other goals. For these or any incremental energy storage deployments, energy storage devices should be assumed to have full resource adequacy valuation, regardless of the interconnection domain or duration. Resources should be assumed to provide multiple use functionality as well, meaning the devices may provide customer, distribution, or transmission functions, but will also be operated to provide planning capacity and wholesale market services, including flexibility. By including scenarios with an additional amount of energy storage, the effects of energy storage on the grid and on renewables portfolios can better inform planning efforts.

IV. THE COMMISSION SHOULD PRIORITIZE SCENARIOS THAT REASONABLY INFORM RENEWABLE PORTFOLIO DEVELOPMENT BY DEPRIORITIZING OR CHANGING THE INFRASTRUCTURE INVESTMENT SCENARIO.

CESA agrees with the Sierra Club that the infrastructure investment scenario may not be realistic insofar as it would fail to comply with current California law.[10] At a minimum, this

[8] Comments of Sierra Club, pp. 2-3.
[9] James H. Nelson, Laura M. Wisland, 2015. "Achieving 50 Percent Renewable Electricity in California: The Role of Non-Fossil Flexibility in a Cleaner Electricity Grid." Union of Concerned Scientists, p. 27.
[10] Comments of Sierra Club, p. 5.

scenario should be adjusted to reflect compliance with the 50% RPS by 2030.

V. THE BOOK-END NO NET-EXPORTS SCENARIO WILL HELP THE STATE PLAN FOR CONDITIONS WHERE EXPORTS ARE LIMITED.

Particularly in light of current uncertainty concerning renewable deployments in other states, CESA believes it is prudent for California to retain its no-net exports scenario as a book-end scenario to inform planning. Such a scenario may highlight needs for in-state solutions and should be considered, particularly if market forces, hydro or climate conditions, or out-of-state policy create circumstances where export capabilities become more limited. CESA therefore respectfully disagrees with Southern California Edison's recommendation to adjust the no-net exports case to include up to 8000 MWs of exports.[11] SCE's point is based on an assumption recently commented upon at the CAISO as part of a study on expanded CAISO operations. These assumptions may be in flux, and the 8000 MW level would significantly skew the scenario from its intended book-end goal. If needed, a much smaller export limit could be contemplated, *e.g.* 500 MW.

VI. CONCLUSION.

CESA thanks the Commission for the opportunity to submit these reply comments on the Ruling.

Respectfully submitted,

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[11] Comments of Southern California Edison, p. 4.