BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA

Order Instituting Rulemaking to Enhance the Role of Demand Response in Meeting the State's Resource Planning Needs and Operational Requirements.	Rulemaking 13-09-011 (Filed September 19, 2013)

COMMENTS OF THE CALIFORNIA ENERGY STORAGE ALLIANCE ON THE ADMINISTRATIVE LAW JUDGE'S RULING REQUESTING COMMENTS ON 2015 CALIFORNIA DEMAND RESPONSE POTENTIAL STUDY DRAFT REPORT ON PHASE TWO RESULTS AND NOTICING A MARCH WORKSHOP TO DEVELOP NEW MODELS OF DEMAND RESPONSE

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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")[1] hereby submits these comments on the *Administrative Law Judge's Ruling Requesting Comments on 2015 California Demand Response Potential Study Draft Report on Phase Two Results and Noticing a March Workshop to Develop New Models of Demand Response* ("Ruling"), issued on December 15, 2016.

[1] 8minutenergy Renewables, Adara Power, Advanced Microgrid Solutions, AES Energy Storage, Amber Kinetics, Aquion Energy, Bright Energy Storage Technologies, Brookfield, California Environmental Associates, Consolidated Edison Development, Inc., Cumulus Energy Storage, Customized Energy Solutions, Demand Energy, Doosan GridTech, Eagle Crest Energy Company, East Penn Manufacturing Company, Ecoult, Electric Motor Werks, Inc., ElectrIQ Power, ELSYS Inc., Energy Storage Systems Inc., Enphase Energy, GE Energy Storage, Geli, Gordon & Rees, Green Charge Networks, Greensmith Energy, Gridscape Solutions, Gridtential Energy, Inc., Hitachi Chemical Co., Ice Energy, IE Softworks, Innovation Core SEI, Inc. (A Sumitomo Electric Company), Invenergy LLC, Johnson Controls, K&L Gates, LG Chem Power, Inc., Lockheed Martin Advanced Energy Storage LLC, LS Power Development, LLC, Mercedes-Benz Research & Development North America, National Grid, Nature & PeopleFirst, NEC Energy Solutions, Inc., NextEra Energy Resources, NEXTracker, NGK Insulators, Ltd., NRG Energy LLC, OutBack Power Technologies, Parker Hannifin Corporation, Powertree Services Inc., Qnovo, Recurrent Energy, RES Americas Inc., Saft America Inc., Samsung SDI, Sharp Electronics Corporation, Skylar Capital Management, SolarCity, Southwest Generation, Sovereign Energy, Stem, SunPower Corporation, Sunrun, Swell Energy, Trina Energy Storage, Tri-Technic, UniEnergy Technologies, Wellhead Electric, 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 commends Lawrence Berkeley National Laboratory ("LBNL") for completing the *2015 California Demand Response Potential Study Draft Report on Phase Two Results* ("Draft Report"), which studied the potential for advanced technology to enable fast-response demand response ("DR") to help meet California's future capacity, energy, and ancillary services. In particular, CESA supports the Draft Report's conclusion on the tremendous potential of energy storage as the "perfect" DR technology that sets the "price referent" for other resources to compete against, if the cost of batteries falls below a certain cost threshold.[2] Energy storage technologies have the advantages as a DR technology as being dispatchable, scalable, sustainable, and instantaneous, while minimizing customer attrition and being capable of multiple starts.

In these comments, CESA focuses narrowly on the Shape, Shift, Shimmy, and Shed framework for four DR service types. In the November 30, 2016 workshop at the Commission, LBNL noted that a deeper dive on how behind-the-meter energy storage can perform as each service type was required as a follow-up to this study, at which point CESA plans to engage with the study authors closely to structure the analyses. In addition, CESA plans to engage closely on shaping and designing the new models of DR in light of the Draft Report's conclusions. At this time, however, CESA focuses its comments herein on ensuring that any DR technology not be artificially restricted from providing all four different DR service types, as presented in the Draft Report.

[2] LBNL Draft Report, pp. 5-22, 5-53, and 7-12.

II. LAWRENCE BERKELEY NATIONAL LABORATORY SHOULD EXPAND THE DEMAND RESPONSE SERVICE TYPE FRAMEWORK TO INCLUDE LOAD CONSUMPTION.

CESA has no specific suggestions to improve the uncertainty analysis or technical aspects of the study and therefore selectively responds to only Question 2 from the Ruling.

> ***Question 2: Should the Consultant make an effort to reframe the demand response services (Shape, Shift, Shimmy, and Shed) into more common or conventional demand response terms? What services in particular should be addressed?***

CESA prefers the Shape, Shift, Shimmy, and Shed DR service types as presented by LBNL in the Draft Report because it is a useful framework to identify the different DR service types by the attributes and performance requirements needed to provide each DR service type. While it may take stakeholders to take some time to familiarize with this reframing, CESA supports the framework as a means to advance a greater understanding of the different DR service types. One suggested means to facilitate greater common understanding of this framework would be to map all the current existing DR products and programs within these four categories.

Given this framework, CESA emphasizes that this categorization should not limit any DR-capable resource from having to provide just a single DR service type. Energy storage, for example, is capable of providing all four DR service types, which was noted in the Draft Report.[3] This interpretation of the Draft Report framework and conclusions is important because the current DR market and programs in California do not always allow for DR resources to participate in multiple DR markets or programs. As the Commission and other stakeholders next determine how to use the Draft Report's findings and conclusions to inform the design of new

[3] LBNL Draft Report, pp. 5-53, 5-54.

DR models, it should also be considered how multiple DR market and/or program participation should be allowed as long as double payments are avoided and consensus baseline and settlement methodologies are developed.

Furthermore, CESA recommends that LBNL expand this proposed framework to include load consumption under the Shift service type or as an 'inverse' to the Shed service type. As mid-day renewables overgeneration becomes more pronounced on California's grid, load-consuming DR resources will increasingly be needed to address the 'belly' of the net load curve. The California Independent System Operator ("CAISO") is currently in the process of enhancing their Proxy Demand Resource ("PDR") product to create a bi-directional DR resource to increase load during excess supply, low price periods in the middle of the day. A baseline measurement methodology and resolution of other policy and implementation issues for such a PDR product is currently underway.[4] Given the current market reform work underway and the addressable need for load-consuming DR resources, LBNL should therefore expand its framework to explicitly include load consumption. Additionally, CESA recommends the Final Report further clarify the difference between shaping and shifting as both services could be signaled through rate design and behavioral responses that drive consumption or curtail resources.

III. CONCLUSION.

CESA appreciates the opportunity to submit these comments on the Ruling and hopes that it will serve to guide the next step of this proceeding. CESA believes that these advanced forms of DR are critical to California's future electricity grid needs and therefore believes it is

[4] Energy Storage and Distributed Energy Resources Stakeholder Initiative Phase 2: Second Revised Straw Proposal, published on September 19, 2016. https://www.caiso.com/Documents/SecondRevisedStrawProposal_EnergyStorage_DistributedEnergyResourcesPhase2.pdf

vitally important to intelligently develop correspondingly advanced models to enable technologies capable of providing these advanced forms of DR. CESA looks forward to working with the Commission on this matter.

Respectfully submitted,

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