

**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.

R.13-09-011
Filed September 19, 2013

**COMMENTS OF THE CALIFORNIA ENERGY STORAGE ALLIANCE ON
PROPOSED DECISION ADDRESSING FOUNDATIONAL ISSUE OF
THE BIFURCATION OF DEMAND RESPONSE PROGRAMS**

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The California Energy Storage Alliance (“CESA”)¹ hereby submits these comments pursuant to the Rules of Practice and Procedure of the California Public Utilities Commission (“Commission”) on the *Proposed Decision Addressing Foundational Issue of the Bifurcation of Demand Response Programs*, issued February 21, 2014 (“Proposed Decision”).

I. INTRODUCTION.

CESA appreciates this opportunity to comment on the Proposed Decision. CESA commends the Commission for proposing this foundational step towards bifurcation, and certainly agrees with the aim of the effort to enhance the role of demand response (“DR”)

¹ The California Energy Storage Alliance (CESA) consists of 1 Energy Systems, A123 Energy Solutions, AES Energy Storage, American Vanadium, Aquion Energy, Beacon Power, Bosch Energy Storage Solutions, Bright Energy Storage, Brookfield Renewable Energy Group, CALMAC, ChargePoint, Clean Energy Systems Inc., CODA Energy, Customized Energy Solutions, DN Tanks, Duke Energy, Eagle Crest Energy, EaglePicher, East Penn Manufacturing Co., Ecoult, EDF Renewable Energy, 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, Gridtential Energy, Halotechnics, Hitachi Chemical Co. America, Hydrogenics, Ice Energy, Imergy Power Systems, ImMODO Energy Services, 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, Parker Hannifin, PDE Total Energy Solutions, Powertree Services, Primus Power, RES Americas, Rosendin Electric, S&C Electric Co., Saft America, Samsung SDI, SeaWave Battery Inc., 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>.

programs in meeting the state’s long-term clean energy goals while maintaining system and local reliability in consistency with the loading order. Solving the foundational issues identified thus far in the proceeding will enable greater participation, competition, and access to a larger set of cost-effective DR resources in California, including behind the meter energy storage providing DR services. A healthy marketplace for emission-free resources such as DR, and energy storage, will allow California’s investor owned utilities, the California Independent System Operator (“CAISO”), and California ratepayers to build a cleaner, more efficient, cost-effective electric power system.

CESA’s views set forth in the following comments highlight the need for clear DR procurement mechanisms and multi-year contracting mechanisms to create bankable applications and encourage innovative business models. The success of the resulting new DR procurement mechanisms will depend on close coordination with ongoing proceedings that are making progress on issues related to interconnection and resource adequacy (“RA”). DR resource aggregators, new market entrants, and existing DR providers need clarity in DR valuation, resource characteristics and operating requirements to drive deployment.

Resolving these key issues will result in a healthy marketplace for DR resources, including those facilitated by energy storage. Pilot projects that include energy storage should play a key role in understanding the value of fully dispatchable supply DR resources. CESA looks forward to working with the Commission and stakeholders to help address these foundational issues.

II. DEMAND RESPONSE DEFINITIONS AND THE VALUE OF ENERGY STORAGE.

CESA agrees with the modified definitions set forth in the Proposed Decision: “load modifiers are defined as resources that reshape or reduce the net load curve”, and “supply

resources are defined as resources that can be scheduled and dispatched into the CAISO's energy markets, when and where needed."² Energy storage can provide both supply resources and load modifying DR by discharging which can appear as a reduction in load and/or back feeding directly into the grid (where other loads can use the energy). Dispatchable supply-side and demand side DR facilitated by energy storage offers great benefit to grid needs in at least the following important ways:

1. Energy storage can offer reliable flexibility needed by the CAISO by being dispatchable on command, offering reliable load reduction and energy/ancillary services.
2. Energy storage can efficiently utilize renewable energy by instantly increasing load at times characterized by high excess renewable generation, and reducing load during ramping time periods, and adding to the regulation capability of the grid.
3. Energy storage can offset the need for inefficient ramping of traditional generation, and ultimately relieve the system of the need for new peaking capacity.

III. CREATING INCENTIVES FOR MARKET PARTICIPATION AND CLEAR PROCUREMENT MECHANISMS WILL ACCELERATE DEPLOYMENT OF ENERGY STORAGE TO FACILITATE DEMAND RESPONSE.

A. Need for Multi-Year Contracts.

This rulemaking proceeding was opened to encourage the use of DR to address resource planning needs and operational requirements as well as address the need for flexible capacity in California's electric power system. Creating cost-effective DR products and services to address these urgent needs requires the ability to finance their deployment. As highlighted in the Commission's RA proceeding, R.11-10-023,³ extended time frames provide greater market certainty and will incent developers of all forms of DR resources, including energy storage, to

² Proposed Decision, pp. 17-18.

³ *Rulemaking to Oversee the Resource Adequacy Program, Consider Program Refinements, and Establish Annual Local Procurement Obligations*, filed October 20, 2011.

pursue these market opportunities. CESA advocates at the Commission and elsewhere for establishment of multi-year contracting mechanisms for DR to incent many business models and various financing options. Minimum contract terms of at least five years would be ideal for energy storage resources deployed to facilitate DR.

B. Promote Many Procurement Mechanisms.

Behind the meter, aggregated, stand-alone, and existing energy storage-enabled DR resources vary in operational characteristics and may each require their own set of procurement mechanisms. Multi-year auctions, bilateral contracting, and traditional procurement processes should all be part of the toolkit available to ensure that cost-effective resources meet market opportunities.

Supply side resources vary greatly in their characteristics, coverage areas, and the specific problems they address. Preferred resources such as DR will greatly benefit from flexibility in contracting options, including removing minimum procurement amounts such as those described in the recent report entitled “Challenges and Barriers Report”, published by the CAISO on January 24, 2014. CESA shares specific concerns expressed by Olivine, Inc.,⁴ for example, and urges the Commission to work with stakeholders to reform existing 100kW proxy demand resource (“PDR”) minimum requirements. CESA thus supports a decision that would bring the minimum requirement to 5kW (or as low as possible) to allow many behind the meter resources, including those facilitated by energy storage, to compete in the market.

⁴ *Response of Olivine to Ruling Providing Guidance For Submitting Demand Response Program Proposals*, filed March 3, 2014, p. 5.

C. Allow Supply Demand Response Resources to capture Resource Adequacy Value.

Encouraging wholesale markets participation in the PDR program and pursuant to Rule 24⁵ should not preclude participation in retail markets. However, while participating in such markets, DR resources need to be able to capture full RA value, including flexible capacity. In this regard, CESA encourages the Commission to coordinate this proceeding closely with policy development presently underway in R.11-10-023.

D. Expand the Dispatch Window to Allow Demand Response to Provide Year-round Resources.

Retiring once through cooling (“OTC”) power plants, and the aftermath of announcement of the permanent closure of the San Onofre Nuclear Generation Stations (“SONGS”) have created demonstrably new and daunting immediate challenges for the CAISO. The Commission’s Proposed Long Term Procurement Planning Track 4 Decision⁶ clearly demonstrates the Commission’s determination that DR will be a key part of California’s future electric power system and will not only be needed during the summer peak, but throughout the year to help balance economic and emergency events. CESA strongly supports development of a variety of refined and new year-round DR products.

IV. DEMAND RESPONSE FACILITATED BY ENERGY STORAGE SHOULD BE INCENTED TO RESPOND BOTH AS LOAD MODIFIERS AND SUPPLY DEMAND RESPONSE RESOURCES AT DIFFERENT TIMES DURING THE YEAR.

CESA urges the Commission to explore mechanisms for market participants to register both as load modifying and supply resources at different times during the year to align with

⁵ See, Resolution E-4630 approving a new Electric Rule 24,1 titled “Direct Participation Demand Response,” and related documents, in compliance with Ordering Paragraph 35 of Decision (D.) 12-11-025, issued February 5, 2014.

⁶ Proposed Decision Authorizing Long-Term Procurement for Local Capacity Requirements Due to Permanent retirement of the San Onofre Nuclear Generating Stations, issued February 11, 2014.

needs identified by the CAISO. For example, energy storage resources could participate in distribution support during the summer peak and provide supply resources during spring and fall when flexible capacity becomes a higher priority need for the CAISO.

CESA supports Pacific Gas and Electric Company's ("PG&E's") recently expressed concerns on the need to, "Clarify that if another DR program, in which a demand bidding program ("DBP") customer is dually enrolled, or a rotating outage is triggered when a DBP event is in progress, the other DR program will supersede the DBP event and no DBP incentive payments will be applied for those overlapping event hours."⁷ CESA urges the Commission to go one step further and convert all reliability-only DR programs to programs that can respond to economic dispatch triggers.

V. THE COMMISSION SHOULD INCENT ELECTRIC VEHICLE PARTICIPATION IN DEMAND RESPONSE PROGRAMS.

As a fast growing load and potential mobile energy storage resource in California, electric vehicles ("EVs"), and their supporting charging infrastructure, should be incented to participate in balancing the California electric power system for the benefit of California ratepayers. Integration of EVs with the grid has the potential to provide a number of valuable grid applications, including demand response, frequency regulation, other ancillary services such as spinning and non-spinning reserves, flexible capacity, and local emergency backup/support while concurrently reducing greenhouse gas ("GHG") emissions from the electricity system and transportation sectors.

Enabling the value of grid support applications to flow back to EV owners, charging infrastructure owners, and distributed energy storage owners in a bankable way is key to EV

⁷ *Response of Pacific Gas And Electric Company to Ruling Providing Guidance For Submitting Demand Response Program Proposals*, filed March 3, 2014, p. 3.

infrastructure development and consumer EV adoption. Current EV tariffs and rules do not allow DR to deliver its benefits as efficiently as possible. For example, stationary energy storage coupled with EV charging infrastructure cannot simultaneously participate in traditional utility DR programs and provide services to the CAISO because DR participants are typically prohibited by utility tariffs from participating in multiple DR programs at the same time. Given that an energy storage resource can be used constantly and that DR events are relatively infrequent (thereby leaving an energy storage resource available for other applications a large portion of the time) there is no reason to prohibit a single energy storage resource from providing both DR and ancillary services - so long as both services are discreet and separately quantifiable and measurable.⁸

VI. COORDINATION WITH OTHER PROCEEDING IS NEEDED TO RESOLVE KEY MARKET PARTICIPATION BARRIERS RELATED TO INTERCONNECTION OF DEMAND RESPONSE FACILITATED BY ENERGY STORAGE.

There are a number of significant interconnection-related issues that need to be addressed by the Commission for cost-effective DR resources and energy storage to be deployed.⁹ CESA agrees with Olivine, Inc. that existing non-generator resource (“NGR”) interconnection processes may be inappropriate and unduly costly: “NGR in its current state is not suitable for DR program integration because it requires full interconnection and separate metering requirements.”¹⁰

CESA urges the Commission continue collaboration with the CAISO to implement the data concentrator model, advocated for by Olivine, Inc. that has been successfully implemented in

⁸ *CESA’s Comments on Administrative Law Judge’s Ruling Setting Prehearing Conference and Requesting Comments*, filed February 19, 2014, in R.13-11-007, p. 2.

⁹ See, e.g., *CESA’s Notice of Ex Parte Communication*, filed February 10, 2014, in R.11-09-011.

¹⁰ *Comments of Olivine, Inc.*, infra Fn. 4.

other Regional Transmission Organizations, such as PJM. At a minimum, CESA recommends the following specific changes to existing interconnection rules and technical requirements:

1. Simplify interconnection and metering requirements and authorize “behind the meter” CAISO telemetry without affecting NEM rights.
2. Harmonize communication standard protocols to allow wider market participation and increased value for ratepayers for all assets including EV batteries and supporting infrastructure.
3. Provide application-specific payment rates for the energy released from energy storage.
4. Require (or at least allow) the use of least cost metering solutions.
5. Cap interconnection charges and allow the use of non-revenue grade metering (third party data) for compliance purposes.
6. Accept UL listing for safety issues of systems themselves, and limit safety concerns to interconnection with the utility’s distribution system.

VII. THE COMMISSION SHOULD CLARIFY DEMAND RESPONSE RESOURCE VALUE, CHARACTERISTICS, AND REQUIREMENTS AS SOON AS POSSIBLE.

As discussed above, aggregated DR resources facilitated by energy storage can, and should, greatly benefit the grid in several very valuable ways. Fully dispatchable, reliable, regulation up and regulation down-capable DR resources with must offer obligations could serve the grid in a number of very high value ways. CESA recommends establishing a set of operational characteristics for DR resources facilitated by energy storage to address clearly identified needs in this proceeding, including:

1. Clarifying response time and ramps rates for supply resources.
2. Rewarding “high-value” dispatchable DR resources such as energy storage that have must offer obligations and “excess energy charge” for non-or underperforming resources.
3. Establishing a value matrix for slow, fast, short, and long duration resources to provide clarity for the marketplace.
4. Clarifying notification rules for market participants.

5. Allowing utilities and the CAISO to remove non-performing customers from DR programs

VIII. THE COMMISSION SHOULD AUTHORIZE NEW DEMAND RESPONSE PILOT PROGRAMS THAT VALUE ENERGY STORAGE RESOURCES.

CESA recommends that the Commission should authorize at least the following pilot projects:

1. Test energy storage market participation for highly dispatchable DR resources in the following CAISO markets: day ahead energy, real times energy, spin / non-spin reserve, regulation up/regulation down.
2. Test market participation with charge and discharge capable energy storage systems, capable of absorbing “excess supply” in different scenarios.
3. Test EV participation in DR, both demand side as well as supply side programs.

IX. CONCLUSION.

CESA appreciates this opportunity to comment on the Proposed Decision, and looks forward to working with the Commission and stakeholders in this proceeding.

Respectfully submitted,



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