

**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 RESPONSES
TO QUESTIONS REGARDING THE PATHWAY TO NEW MODELS OF DEMAND
RESPONSE AND REMAINING BARRIERS TO THE INTEGRATION OF
DEMAND RESPONSE INTO THE CAISO MARKET**

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In accordance with the Rules 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 Responses to Questions Regarding the Pathway to New Models of Demand Response, Implementation of the Competitive Neutrality Cost Causation Principle, and Remaining Barriers to the Integration of Demand Response into the CAISO Market*, issued by Administrative Law Judges Kelly A. Hymes and Nilgun Atamturk on May 22, 2017 (“Ruling”).

¹ 8minutenergy Renewables, Adara Power, Advanced Microgrid Solutions, AES Energy Storage, AltaGas Services, Amber Kinetics, American Honda Motor Company, Inc., Bright Energy Storage Technologies, BrightSource Energy, Brookfield, Consolidated Edison Development, Inc., Customized Energy Solutions, Demand Energy, Doosan GridTech, Eagle Crest Energy Company, East Penn Manufacturing Company, Ecoult, EDF Renewable Energy, ElectriQ Power, eMotorWerks, Inc., Energport, Energy Storage Systems Inc., GAF, Geli, Green Charge Networks, Greensmith Energy, Gridscape Solutions, Gridtential Energy, Inc., Hitachi Chemical Co., IE Softworks, Innovation Core SEI, Inc. (A Sumitomo Electric Company), Johnson Controls, LG Chem Power, Inc., Lockheed Martin Advanced Energy Storage LLC, LS Power Development, LLC, Magnum CAES, Mercedes-Benz Energy, National Grid, NEC Energy Solutions, Inc., NextEra Energy Resources, NEXTracker, NGK Insulators, Ltd., NICE America Research, NRG Energy, Inc., Ormat Technologies, OutBack Power Technologies, Parker Hannifin Corporation, Qnovo, Recurrent Energy, RES Americas Inc., Sharp Electronics Corporation, SolarCity, Southwest Generation, Sovereign Energy, Stem, STOREME, Inc., Sunrun, Swell Energy, UniEnergy Technologies, Viridity Energy, Wellhead Electric, and 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 supports the Commission's efforts to enable new and advanced demand response ("DR") products and programs to help meet California's need for future capacity, energy, and ancillary services. The Lawrence Berkeley National Laboratory's ("LBNL's") *2015 California Demand Response Potential Study Final Report on Phase Two Results* ("Final Report") proposed a new framework for DR services and highlighted the significant potential of energy storage technologies, which have the advantages as a DR technology as being dispatchable, scalable, sustainable, and instantaneous, while minimizing customer attrition and being capable of multiple starts. The workshops held on February 22, 2017 and April 4, 2017 also provided an opportunity for CESA and other stakeholders to discuss market integration barriers to the California Independent System Operator ("CAISO") wholesale market and pathways toward development of new models of DR.

In these comments, CESA answers certain of the questions posed in the Ruling, with particular focus on three key issues: (1) exploring the full potential of DR resources providing distribution services, including use of excess available capacity from exports to the grid; (2) revisiting the rationale behind the dual-participation prohibition for third-party supply-side DR resources in utility-run load-modifying DR programs; and (3) moving forward with a Commission-led working group to develop a viable load-consumption DR product without awaiting resolution of retail rate issues.

II. CAISO MARKET INTEGRATION BARRIERS.

Question 1: During the course of the workshop, parties identified seven remaining barriers to integrating current models of demand response into the CAISO market as listed in Section 2 above. Provide an approach for addressing them, e.g., working group, another proceeding, CAISO stakeholder process, etc. If there are other barriers that should be

included, please describe them and suggest a potential approach for addressing them?

CESA supports the resolution of the seven identified remaining barriers to integrating current models of DR into the CAISO market.

III. PATHWAYS TO IMPLEMENTING NEW MODELS OF DEMAND RESPONSE.

Question 1: Referring to the activity list in Section 3:

(a.) Is this a complete list of activities that the Commission must finish or accomplish before new models of demand response can be implemented?

CESA believes the activity list in Section 3 is relatively comprehensive and represents a good starting point for discussions in this proceeding.

(b.) What activities are missing? Why should the missing activities be included and how should they be prioritized?

CESA recommends that the Commission also explore whether it is reasonable to allow solar-plus-storage systems operating under the Net Energy Metering (“NEM”) tariff to use their excess available capacity at times. Currently, NEM-paired storage systems have limited or no onsite loads to offset if a DR event occurs during the midday when solar production is at its highest, limiting opportunities for these customers to participate in retail DR programs. Further discussion will be needed on how much export can be allowed and compensated for. For example, the export limit in response to a DR event may be tied to interconnection agreements that outline how much export can be allowed given the distribution grid infrastructure and safety considerations of the distribution utility. Additional discussions will be needed as well on establishing baselines for resources that can export to the grid - not just reduce load.

The Commission may look to the New York Public Service Commission (“PSC”) as an example, as the PSC recently issued an Order that allowed Consolidated Edison, Inc. (“Con

Edison”) to amend its tariffs to allow battery storage systems participating in the Brooklyn/Queens Demand Management (“BQDM”) Program to export to the grid when there is little to no load on the customer site during a DR event. The BQDM Program, which seeks to use non-wires alternatives to meet the growing electricity demand in Brooklyn and Queens, thus allows export to the distribution grid as long as it is deemed to be ‘safe’.² While these tariff amendments provide only limited exceptions to General Rule 8.3 for battery storage assets in the BQDM Program and applies to the distribution deferral use case, it serves as a potential basis for considering how California’s retail DR programs can be configured to provide distribution services, potentially including exports to the grid.

A goal of DR services provided by energy storage, including exports, is to enable the ‘Shift and Shimmy’ DR services discussed in the Final Report as well as multiple-use applications for behind-the-meter (“BTM”) energy storage systems paired with rooftop solar. Through exploration of allowing exports from DR resources, the Commission supports the greater utilization of assets on the grid and thereby improves the cost-effectiveness of deploying similar new energy storage systems. Potential concerns about inappropriate double payments, such as from NEM-paired storage systems, should be resolved and can be addressed in this proceeding. For example, the Commission may look to billing solutions to allow NEM-paired storage systems to forgo NEM credits when exporting in response to a PDR dispatch. Furthermore, CESA hopes that the Commission recognizes the need to address this issue as many of the DR rules were designed for conventional DR technologies that are only capable of

² New York Public Service Commission, Case Number 17-E-0104, May 18, 2017.
[http://www3.dps.ny.gov/pscweb/WebFileRoom.nsf/ArticlesByCategory/0B7558D87359A08085258124006EC593/\\$File/pr17038.pdf?OpenElement](http://www3.dps.ny.gov/pscweb/WebFileRoom.nsf/ArticlesByCategory/0B7558D87359A08085258124006EC593/$File/pr17038.pdf?OpenElement)

dropping load, not new technologies such as energy storage that are flexible and easily dispatchable while being capable of discharging to the host load or to the grid.

(d.) Are the approaches suggested for the activities appropriate? Provide details on more appropriate approaches.

Regarding Activity #2 (defining and developing new bi-directional DR products), CESA supports the use of working groups to resolve these issues. Importantly, CESA recommends heavy involvement of the CAISO and strong coordination between CAISO and the Commission in this working group to define and develop these new products. In particular, the CAISO noted “deeper policy discussions around retail rate interactions” as an impediment to developing load-consumption and bi-directional DR products in Phase 2 of the Energy Storage and Distributed Energy Resources (“ESDER”) Initiative, which led to holding off on discussions for developing this product altogether at the CAISO.³ CESA therefore recommends that the working group import many of the discussions from the Load Consumption Working Group (“LCWG”) in the ESDER Phase 2 Initiative to build off previous efforts and ensure coordination between the CAISO and the Commission on key issues that must be resolved. As CESA notes below, the Commission’s working group efforts do not have to await resolution of retail rate matters.

Regarding Activity #3 (resolving dual-participation issues), CESA believes that these issues should be addressed through working groups in this proceeding rather than through the review of individual IOU DR portfolios. Many of the dual-participation issues are cross-cutting across all the IOUs and resolution in one IOU DR application should not preclude it from being applied more broadly to other IOU DR applications, as the same principles and rules apply for each of the IOUs. As a result, CESA recommends that Activity #3 also be approached through a

³ ESDER Phase 2 Initiative, *Draft Final Proposal*, pp. 24-25.

working group structure that is better suited for discussing and resolving complex issues while being applicable broadly across all IOUs once the working group comes to consensus solutions.

- (e.) Is the list of activities appropriately prioritized? Explain why any listed activity should be prioritized ahead of or behind others. In adding and prioritizing activities, focus on New Models for demand response (e.g., system-wide load consuming demand-response).**

CESA finds the prioritization appropriate. CESA especially supports the consideration of bi-directional DR products and resolution of dual-participation barriers as being among the top priorities in the activity list – *i.e.*, Activity #2 and #3.

- (f.) Several activities in this list concern load shedding demand response. If these activities need to be resolved before work can begin on new models (system-side load consuming demand response), explain why the process needs to be consecutive and not parallel.**

CESA does not believe the process needs to be consecutive and supports parallel consideration of load-shedding and load-consuming DR models.

Question 3: Parties at the workshop recommended that defining and developing new products, including both load consumption and bi-directional products, should be performed through the use of a working group. Do you agree? If so, should the working group be facilitated by the Commission’s Energy Division, the Utilities or another entity or organization? Would the working group need additional expertise to assist them? What kind of additional expertise, e.g., academic, consultant, would the working group require?

Yes, CESA agrees that the use of a working group for defining and developing new products is appropriate, as working groups are able to meet more frequently and dive deeper into the complex issues of a new product – *e.g.*, rules/regulations, economic/financial considerations, jurisdictional issues. CESA recommends that the Commission’s Energy Division facilitate the working group for the load-consumption and bi-directional DR products, given its staff’s objectivity in handling discussions on retail rate matters and the ability to involve different

stakeholders, including the IOUs. Legal, developer, utility, and CAISO expertise will all be required, but CESA has no specific suggestions at this time on any additional expertise needed.

Question 7: Activity 6 proposes to test a pilot to create more accurate dynamic price signals tied to wholesale pricing. Provide a recommendation on the proceeding or venue in which this pilot would be tested.

CESA supports the pilot for more accurate dynamic price signals tied to wholesale pricing. Some of these ideas are already being tested in pilots in other proceedings, such as SDG&E's Transportation Electrification Application (A.17-21-020), where SDG&E will test its proposed Grid-Integrated Rates ("GIR"). CESA finds significant benefits in testing a pilot here in this proceeding, as A.17-21-020 is targeted at customers with electric vehicle charging and, as CESA understands it, has less of a focus on leveraging a fuller suite of different DR technologies, including energy storage, to respond to the GIR.

Question 9: Activity 5 speaks to coordinating with the CAISO to integrate demand response into their markets, including New Models of demand response. Are there critical barriers to implementing bi-directional products? If so, what process best addresses the barrier(s)?

Please refer to CESA's response to Question 1(d).

Question 10: Activity 2 proposes defining new products including load consuming and bi-directional products:

(a.) Workshop participants proposed using a working group to conduct this activity. Explain why you agree or disagree. If you disagree, what other approach should the Commission use?

Please refer to CESA's response to Question 1(d).

(b.) Is it possible to address retail rate and pricing policies that determine the load shape and availability of demand response at the same time as working to design a wholesale load consuming product based on the Potential Study Shift service, but dispatched only occasionally? If yes, please explain a process and whether any specific issues need to be resolved on one front (retail or wholesale) before they can be decided on the other.

Yes, retail rate structures and programs can be helpful to direct retail consumption in manners that yield different and/or helpful retail load patterns. Incremental to this, wholesale market driven behavior can still be needed. For instance, a customer may have excess capability to provide grid services, even while already having a load pattern that responds to retail rate pricing policies that direct a ‘helpful’ load shape. By allowing wholesale service capability on top of retail load-use ‘shifts’, the retail customer can respond more dynamically to grid needs. CESA does not support inappropriate double payments but understands that grid needs can change and wholesale markets often reflect real-time grid needs in a manner that is more dynamic than retail rate structures. Rules should allow for the possibility that incremental participation in wholesale market services can be valued and needed.

At the same time, limitations on wholesale market participation may also highlight a need for new retail load programs in addition to wholesale participation. Currently, the Proxy Demand Response (“PDR”) functionality is not workable for increasing load. Retail rates designs can link more dynamically to wholesale conditions and can resolve counter-productive incentive structures that may work against the grid’s needs at times. For example, given the increasing need for load consumption during solar generation during the mid-day, CESA recommends that the Commission begin immediately to develop load-consuming and bi-directional DR programs. This work should include consideration of how non-coincident demand charges may impede DR providers. While CESA understands the role of demand charges in cost recovery, this proceeding should explore rate design enhancements that can support grid needs dynamically.

- (c.) Should the Commission use the approaches in 10.a to address any policy, cost or technical barriers to the New Models being developed? For instance, parties have raised the issue of demand charges, which are handled currently in general rate**

Yes, CESA supports the working group approach to address any policy, cost, or technical barriers to load-consuming and bi-directional DR models. As discussed in CESA's response to Question 10(b), the development of a viable load-consumption DR product can be done independently of General Rate Cases as many DR programs are designed by accounting for existing retail rate structures and new intelligent technologies such as energy storage.

Question 11: Clarify the following activity items listed in Section Three:

- (a.) Activity 3 refers to dual participation. Which dual-participation issues should be considered for this activity, e.g., prohibitions against participating in load-modifying and supply-side demand response, or DRAM and other supply-side programs?**

In this proceeding, the Commission should explore where and whether dual-participation prohibition rules of third-party DR resources are appropriate and reasonable in light of double compensation considerations. Energy storage resources in particular can function as both a supply-side and load-modifying DR resource, making this issue especially acute for these technologies. As it stands today, customers on an existing utility-run load-modifying DR tariff – such as Critical Peak Pricing (“CPP”) or Capacity Bidding Programs (“CBP”) – are required to un-enroll from the load-modifying program in order to enroll in third-party supply-side programs such as the Demand Response Auction Mechanism (“DRAM”) via Rule 24/32. However, customers may be unwilling to un-enroll from their load-modifying DR tariff to participate in supply-side programs such as DRAM, creating barriers of entry for third-party DR providers to compete and acquire additional customers.

In this proceeding, it will also be important to understand the basis of this prohibition and whether conditions may have changed to warrant revisiting the foundations of the rationale for this prohibition. D.12-11-025 implemented Rule 24 that allowed for participation of DR resources into the CAISO market and highlighted that the Commission's primary dual

participation concern was that customers enrolled in a CAISO-integrated program as well as an “event-based” utility-run DR program could be inappropriately double compensated. To be consistent with the CAISO tariff,⁴ prohibition for such dual participation was thus implemented in Rule 24/32.⁵ Importantly, D.12-11-025 cited D.10-06-002 in that the Commission would not consider multiple enrollment rules for direct DR participation programs until “after California has had reasonable and successful experience with single PDR participation.”⁶ At the time of the issuance of D.12-11-025, the Commission found that the state had “gained no experience since the issuance of [D.10-06-002] to revise the policy at this time.”⁷

The Commission has an opportunity to review the performance of PDR resources and begin to address some of the dual-participation issues raised in previous decisions. Since 2014, the state has conducted three DRAM pilot solicitations that have tested how DR resources can provide System, Local, or Flexible Resource Adequacy (“RA”) through the day-ahead PDR product with must-offer obligations. Significant learning on the solicitation, procurement, and performance has been achieved and thus this issue should be revisited, according to D.10-06-002 and D.12-11-025.

The Commission should also review and evaluate some inconsistencies in which the dual-participation prohibition rules are currently applied. First, as CESA understands it, the distinction between enrollment in DR programs where loads are bid into the CAISO markets and utility-run event-based and non-event-based DR programs have already been made in D.15-11-042, which clarified what programs are supply-side, event-based, and non-event-based,

⁴ D.12-11-025, pp. 28-29.

⁵ See, PG&E Rule 24 Tariff Section C.2.d, and SCE Rule 24 Tariff Section C.2.d., and SDG&E Rule 32 C.2.d.

⁶ D.10-06-002, p. 13.

⁷ D.12-11-025, p. 28.

respectively, and thus delineated which customers in which programs that third-party DR providers were prohibited from enrolling in their direct DR participation programs.⁸ D.15-11-042 determined that programs such as CPP and Peak Day Pricing (“PDP”) are non-event-based load modifying DR programs. On the other hand, while the Rule 24/32 tariffs of the IOUs only explicitly exclude event-based DR programs, they incorrectly make explicit prohibitions for third-party DR providers from enrolling CPP and PDP customers, which are customers enrolled in non-event-based DR programs, according to D.15-11-042.⁹ It appears that D.15-11-042 already clarifies dual-participation rules, at least for CPP and PDP customers wishing to participate in third-party direct DR programs.

Second, dual DR participation rules are applied differently for utility DR providers and third-party DR providers. Currently, for example, CPP customers are allowed to maintain their dual participation in the Capacity Bidding Program (“CBP”), a utility-run capacity program for DR resources. Third-party DR programs (such as DRAM) should be afforded the same treatment, if, for similar reasons to why dual participation is granted for utility DR providers, distinct DR services are being provided. In this proceeding, the Commission should explore why utility-run DR programs are granted dual participation in supply-side and load-modifying DR programs, but similar treatment is not granted for third-party DR providers. CESA understands that the purpose of the DR program or market mechanism will guide whether there is ‘double counting’ of DR services. A further exploration is thus needed.

⁸ D.15-11-042, pp. 16-17.

⁹ *See, e.g.*, PG&E Rule 24 Tariff Section C.2.d. explicitly prohibiting dual participation with its Peak Day Pricing Program and SCE Rule 24 Tariff Section C.2.d. and SDG&E Rule 32 C.2.d. explicitly prohibiting dual participation with its Critical Peak Pricing Programs.

Overall, CESA recommends that the Commission explore the basis for the dual-participation prohibition for non-utility DR providers further, considering there has been significant experience in participation in the PDR model and in DRAM. Conversely, the Commission should explore the basis for allowing dual participation for utility DR providers. CESA is open to exploring whether supply-side and non-event-based load-modifying DR participation constitutes double compensation, if this is indeed the key issue of concern. CESA does not support rules that could allow for inappropriate double payments, but there are accounting solutions or other controls can be developed so that load-modifying DR resources can also participate (with unused or available capacity) in providing incremental wholesale market services while preventing potential double payment. Alternatively or additionally, the Commission's concerns may be related to conflicting signals for multiple dispatches or calculation of accurate baselines. In any case, CESA recommends that the Commission work to identify the key issues that need to be discussed and evaluated in this proceeding to address dual-participation rules, since the lack of experience or learning can no longer serve as the basis for this prohibition.

(c.) Activity 1b refers to capacity value for ramping. Explain whether you agree that demand response should be compensated with capacity payments for providing ramping? Should payments be considered for a load taking New Models products during morning ramp or a load-shedding product during the evening ramp, or both?

CESA supports DR products providing capacity value for ramping so long as RA requirements are met. Many of RA-specific issues will be discussed in further detail in the RA proceeding (R.14-10-010) and may be best addressed there, but mechanisms to deliver potential RA value, such as through the DRAM or any other new model, can be considered here.

(d.) Activity 5 refers to coordination with CAISO. Which specific CAISO efforts should be considered under this activity?

Direction from the Commission on DR program designs can inform other approaches in non-Commission jurisdictions. The Commission should coordinate closely with the CAISO on the ESDER Initiative where enhancements to the PDR and Non-Generator Resource (“NGR”) models are being discussed. For instance, the CAISO has indicated an interesting in understanding the Commission’s assessments of multiple-use applications and will consider how to allow non-discriminatory competition from BTM resources seeking to export from energy storage in Phase 2 of the ESDER Initiative.¹⁰

Commission guidance and authorizations on DR may also support the need to consider frameworks to fully leverage BTM resources such as solar-plus-storage systems. The Distributed Energy Resource Provider (“DERP”) functionality in the NGR model enables BTM energy storage resources to export to the grid, but the requirement for NGRs to be ‘in market’ for 24 hours per day limits the ability for BTM resources to participate as an NGR and to provide Shift and Shimmy DR services. Due to the limitations of the NGR model, it may also be worthwhile for the Commission to coordinate with the CAISO on how the PDR model can be enhanced and have a discussion with stakeholders on whether modification of the PDR model to allow for exports is a feasible and reasonable, while understanding that there are jurisdictional, technical, and regulatory issues that must be considered and addressed.

With Phase 2 of the ESDER initiative coming to a close, Phase 3 will begin in the fall, at which point the Commission and stakeholders in both this proceeding and that initiative should closely coordinate.

¹⁰ ESDER Phase 2 Initiative, *Second Revised Straw Proposal*, pp. 15-16.

IV. CONCLUSION.

CESA appreciates the opportunity to submit these comments on the Ruling and looks forward to working with the Commission and stakeholders to establish effective DR models.

Respectfully submitted,



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