BEFORE THE PUBLIC UTILITIES COMMISSION

OF THE STATE OF CALIFORNIA

Order Instituting Rulemaking to Create a Consistent Regulatory Framework for the Guidance, Planning, and Evaluation of Integrated Demand Side Resource Programs	R.14-10-003 (Filed October 2, 2014)

COMMENTS OF THE CALIFORNIA ENERGY STORAGE ALLIANCE ON PROPOSED DECISION ADOPTING AN EXPANDED SCOPE, A DEFINITION, AND A GOAL FOR THE INTEGRATION OF DEMAND SIDE RESOURCES

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In accordance with the 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 Proposed Decision Adopting an Expanded Scope, a Definition, and a Goal for the Integration of Demand Side Resources, issued August 13, 2015 ("PD").

I. INTRODUCTION

CESA applauds the Commission for initiating this proceeding to develop a regulatory framework for integrating demand-side resources), as well as considering relevant valuation

[1] The California Energy Storage Alliance consists of 1 Energy Systems Inc., Abengoa, Advanced Microgrid Solutions, AES Energy Storage, Aquion Energy, ARES North America, Brookfield, Chargepoint, Clean Energy Systems, CODA Energy, Consolidated Edison Development, Inc., Cumulus Energy Storage, Customized Energy Solutions, Demand Energy, Duke Energy, Dynapower Company, LLC, Eagle Crest Energy Company, East Penn Manufacturing Company, Ecoult, EDF Renewable Energy, Elevation Solar, ELSYS Inc., Energy Storage Systems, Inc., Enersys, EnerVault Corporation, Enphase ENERGY, EV Grid, Flextronics, GE Energy Storage, Green Charge Networks, Greensmith Energy, Gridtential Energy, Inc., Hitachi Chemical Co., Hydrogenics, 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, Manatt, Phelps & Phillips, LLP, Mobile Solar, NEC Energy Solutions, Inc., NextEra Energy Resources, NRG Solar LLC, OutBack Power Technologies, Panasonic, Parker Hannifin Corporation, Powertree Services Inc., Primus Power Corporation, Princeton Power Systems, Recurrent Energy, Renewable Energy Systems Americas Inc., Rosendin Electric, S&C Electric Company, Saft America Inc., Sharp Electronics Corporation, Skylar Capital Management, SolarCity, Sony Corporation of America, Sovereign Energy, STEM, SunEdison, SunPower, Toshiba International Corporation, Trimark Associates, Inc., Tri-Technic, 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.

methodologies and sourcing mechanisms. CESA agrees with the PD's definition integrated demand side resources ("IDSRs") to enable customers to "effectively and efficiently *choose* from an array of demand-side and distributed energy resources." CESA also supports the goals of this proceeding to provide optimal customer and system benefits through the deployment of distributed energy resources ("DERs").

CESA is concerned by the lack of "energy storage" being explicitly mentioned in the Proposed Decision. While "distributed energy resources" includes energy storage in its definition, CESA recommends that energy storage be explicitly highlighted in the IDSR proceeding. Energy storage offers a multitude of services and values to system operations so should be widely represented in this proceeding.

CESA's understanding of customer "pain points" affords CESA with uniquely applicable perspectives to share in support of the goals of this proceeding, enabling customers to identify and deploy demand-side resources and DERs that benefit both the customer and the utilities. If done correctly, CESA believes that this proceeding should foster stronger relationships and engagement between customers, energy service providers, and utilities that simultaneously push the state to reach the state's energy and environmental goals and builds a cleaner, cost-effective, and reliable electric power system.

A successful proceeding should also break stakeholders from their technology "silos" to allow optimal combinations of demand-side resources and DERs. CESA believes that one of the keys to success for this proceeding is the design of new regulatory frameworks and smart tariffs that move beyond proposing technology-specific utility programs and instead aims to create "service-offer" models that unlock the value of demand-side resources and DERs, including energy storage solutions.

CESA recommends that the Commission view this proceeding as important and pressing. This proceeding should focus on developing the underlying incentive structures that enable customers to seamlessly and simply integrate demand-side resources and DERs to the benefit of both the customer and the system needs. Such an outcome will be important to creating a dynamic grid that allows currently-available and future demand-side resources and DERs such as energy storage to be quickly deployed and immediately add value. Therefore, CESA recommends that the Commission establish a clear timeline with milestone objectives to ensure the success of this proceeding.

II. PHASES OF THE IDSR PROCEEDING MUST BE REDEFINED

The Commission has established a two-phase approach that CESA believes will fall short of reaching the goals of this proceeding. Rather, CESA proposes a three-phase approach:

Phase I: CESA recommends that the Commission use Phase I of the proceeding to identify existing and emerging demand-side resources, use cases, valuation methodologies, and barriers to large-scale adoption. CESA's proposed Phase I of the proceeding closely mirrors that of the PD's proposed Phase I.

Phase II: CESA recommends that the Commission develop new systematic tariff structures and incentives in Phase II of the proceeding to accelerate the deployment of demand-side resources to meet system needs. CESA's proposal differs from the PD's Phase II approach where the Commission will consider launching pilot programs to address findings and conclusions from Phase I. Rather, CESA proposes Phase II to be a rate-setting phase of the proceeding to establish sustainable tariff structures and incentives. Once in place, CESA believes that customers will more seamlessly and simply integrate their demand-side resources into the grid that delivers value immediately to the customer as well as the electric power system.

Phase III: Unlike the Commission's approach, CESA proposes a third phase to monitor the implementation and procurement of demand-side resources as a result of these proceedings. CESA intends Phase III to monitor and verify that existing and new products are meeting customer and system needs as intended.

III. OTHER ONGOING PROCEEDINGS SHOULD INFORM THE IDSR PROCCEDING

While this proceeding focuses on the integration of demand-side resources, numerous other ongoing initiatives and proceedings are likely to affect how demand-side resources interface with utilities and the grid. The PD cites the Distributed Resources Plan ("DRP") proceeding as a complementary one that completed the Integration Capacity Analysis and Optimal Location Benefit Analysis that specifies the locational value of DERs and demand-side resources. CESA agrees that the DRP proceeding enhances the tools available for IDSM, which should guide how customers and energy service providers can capture this measured value by integrating DERs and demand-side resources.

In addition to the DRP proceeding, this proceeding should coordinate with the California Independent System Operator's ("CAISOs") Energy Storage & Distributed Energy Resources ("ESDER") Initiative.[2] The CAISO is currently in the process of enhancing wholesale market participation rules and settlements for non-generation resources, such as energy storage. Notably, the CAISO is building a framework and market mechanism to support dual-function participation, *e.g.* participation in wholesales and in retail markets either simultaneously or staggered across time. The outcomes of the ESDER Initiative will likely influence the tariff structure and incentives resulting from this proceeding.

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2 http://www.caiso.com/informed/Pages/StakeholderProcesses/EnergyStorage_AggregatedDistributedEnergyResources.aspx

Another proceeding to coordinate with is the Demand Response ("DR") proceeding (R.13-09-11), which will enhance the role of DR in resource planning and operations. Specifically, the Commission's decisions[3] bifurcating DR resources between "load modifying DR" that reshapes or reduces the net load curve, and "supply resource DR" that can be scheduled and dispatched into the Cs energy markets, when and where needed. Similar to the ESDER initiative, utilities and third-party providers are working toward developing procurement mechanisms, metering requirements, evaluation criteria, load impact protocols, and bidding structures that will allow DR resources such as energy storage to support the grid.

IV. THIS PROCEEDING MUST ADDRESS SPECIFIC CUSTOMER PAIN POINTS AND SYSTEM COST DRIVERS

CESA has identified several key issues in the DRP proceedings that hinder customer choice and prevent behind-the-meter energy storage from being deployed. These issues apply to several configurations of demand-side resources and should be immediately addressed in this proceeding. CESA encourages the Commission to build a record of existing barriers and implement concrete measures to address them.

First, in close coordination with the Interconnection (Rule 21) rulemaking (R.11-09- 011), collaboration with system operators and LSEs is needed to adapt and streamline interconnection processes for demand-side resources meeting the characteristics and operational requirements. The goal is to create to a true "plug-and-play" infrastructure for customers, provided they meet local and system constraints identified in the interconnection process by the system operators and Load Serving Entities ("LSEs"). For example, CESA has advocated in this proceeding for interconnection requests to start with the CAISO and LSEs identifying operational constraints

[3] *Decision Addressing Foundational Issue of the Bifurcation of Demand Response Programs*, filed on February 21, 2015.

and characteristics that would be required for a basic interconnection with minimal upgrades. Interconnection customers could then design a system at that single interconnection point, inclusive of all types of DERs such as PV solar, energy storage, and electric vehicles, that would manage generation, load, and ancillary services provided to the grid based on the identified operational characteristics and constraints.

Second, customer adoption should be accelerated by creating clarity and removing market participation barriers for cost-effective DERs. Specifically, the Commission should:

- Work with the CAISO and LSEs to create clear and detailed product characteristics (duration, location, ramp rate, load carrying capability, etc.) with associated long-term revenue streams that encourage third party investments in products and services that meet existing and future system needs.
- Expand the dispatch windows and allow demand-side management resources to provide year-round responses when they are cost-effective and compete with using fossil fuel alternatives.
- Consider changes to the system Resource Adequacy measurement hours from four hours to two hours in order to accurately reflect the changing technological capabilities of DER resources, such as energy storage, along with the changing nature of California's electric grid since the inception of the RA program.
- Review models and approaches being considered by customers such as commercial and industrial customers in deploying suites of DER. The retail footprints of these customers and sensitivity to electricity service costs may create strong incentives for them to consider and explore cutting-edge combinations of DER and related solutions, likely in conjunction with third-party developers, and aggregators.

Third, the Commission should support policy transformation that integrates DERs such as energy storage in the planning, management and operation of the electric power system. The Commission and stakeholders should explore appropriate incentives and penalties for these

resources to be dispatched in accordance with California's energy policy goals. Failure to include IDSR in long-term planning would result in a significant amount of that value going unrecognized and essentially force ratepayers to procure duplicative resources.

Finally, CESA believes this proceeding provides the opportunity to reinvent the aggregation of distributed energy resources and apply a "bottom up" approach. For example, it's time to end requirements that place tremendous amounts of risk on DER aggregators by requiring them to commit to specific amounts of resources several years in advance to accommodate existing long term planning processes. CESA is in perfect alignments with PD's vision that this proceeding gives us the opportunity to challenge existing practices and adopt the perspective of customers.

V. SMART TARIFFS AND INCENTIVES CAN UNLOCK DISTRIBUTED ENERGY RESOURCES TO SUSTAINABLY PROVIDE CUSTOMER AND SYSTEM BENEFITS

The Commission should seek to establish regulatory frameworks and smart tariffs that further integrate DER technology as a key tool in providing safe, affordable, and reliable service. To achieve this outcome, rather than a one-off utility pilot or program, CESA hopes that new and systematic structures can be put in place to provide widespread, longer-lasting market signals to energy service providers. This proceeding should focus on this outcome first, and pilots only if necessary.

The first step in creating this structure is to build off the DRPs and allow for greater sharing of distribution system and customer data to help service providers and customer sited DERs that optimize system benefits for utilities and system operators. With greater data sharing and dynamic updates of system needs, a tariff structure can then be put in place to provide market signals that align with real-time and forecasted system needs.

CESA believes that smart tariffs mixed with specialized adders and/or incentives will send service providers and customers the data needed to maximize the value of DER assets. The Rocky Mountain Institute provides an initial framework of the different elements of a more sophisticated rate structure that adds temporal, locational, and attribute based pricing for providing electricity to customers.[4] Energy storage would provide tremendous value under more sophisticated rate structures that simultaneously provide significant customer savings, greater system reliability, and cost-effective investment in T&D infrastructure. Such a smart tariff would layer the following:

- **Time-of-use pricing:** The cost of delivering electricity to the end-use customer varies across the hours of the day. To reflect the higher cost of service during peak hours of the day, higher prices could be applied to peak periods of the day to encourage customers to install DERs and demand-side resources that allows customers to arbitrage price differences and allow LSEs to avoid costly overbuilding of capacity to service peak demand loads. Energy storage, for example, could be coupled with rooftop PV solar to smooth loads and store overgeneration from solar during the afternoon to provide energy during the evening peak periods of the day when solar generation tails off. Careful attention would be needed to the price for the various periods of the day to reflect actual cost of service and ensure that DER and demand-side resource installations are positioned to reduce or shift use during peak periods.
- **Locational pricing:** Congestion and overloading of T&D infrastructure is a problem that could be mitigated by locational pricing that places a higher value where DERs and demand-side resources are most needed. The DRP proceeding is an initial step in instituting a locational price mechanism by highlighting where DERs and demand-side resources can provide great system benefits, but it stops short of placing an actual value on these needs and in sharing data on system

[4] Rocky Mountain Institute. "Rate Design for the Distribution Edge: Electricity Pricing for a Distributed Resource Future." Aug 2014, pp. 22.

operations. In the interim, an adder or incentive could be adopted to place a capacity value on T&D upgrade deferral on certain congested lines and substations, similar to the Brooklyn-Queens Demand Management Program.[5] In the long term, locational marginal prices reflecting real-time conditions could be instituted to compensate DER and demand-side resource providers for relieving congestion at specific locations. These types of changes will drive market reforms and unlock value.

- **Attribute based pricing:** There are a number of attributes such as reserve capacity, ancillary services, flexible capacity, and resilience that could be provided by DERs. These capabilities ensure that the system in general operates reliably. This proceeding should explore and develop attribute-based pricing. Many of these attributes can be priced on top of a tariff and/or linked to wholesale market pricing or products. Energy storage, for example, can provide many of these services because it is a fast-responding resource with a high ramp rate, giving it an advantage in the ancillary service and flexible capacity markets. ISDR rate structures should support this type of participation.

CESA proposes that a smart tariff reasonably layered with smart incentives and/or adders, where appropriate, can encourage the deployment of technologies that provide some combination of temporal, locational, and attribute-based benefits. A key challenge will be in determining the value of each of these benefits and in establishing metering approaches and advanced software to measure and manage complex price signals coming from system operators and LSEs. A phased approach of instituting elements of the above smart tariff could be taken to spread the costs of the benefits valuation process as well as the costs of installing the necessary tools and equipment to provide a dynamic "plug and play" platform.

[5] Con Edison. *Brooklyn-Queens Initiative*. http://www.coned.com/energyefficiency/competitive_solutions_opportunities.asp

To navigate this sophisticated rate structure, the utilities could act as a conduit for end-use customers in optimizing operation of the energy storage system that provide key system benefits while saving customers on their electricity bills. Alternatively, sophisticated third parties could aggregate resources and interface with the wholesale markets directly. Customer concerns over changing industry practices should also be addressed, as it is a potential deterrent to complex rate structures. Approaches that allow utilities and third-party providers to manage the complexity of multiple price signals, e.g. through advanced data and management systems, can mitigate customer experience concerns. The key to the success of this smart tariff will be in establishing a long-lasting market structure that provides customers with certainty in bill savings and revenue.

VI. CONCLUSION

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

Respectfully submitted,

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