

**BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA**

Order Instituting Rulemaking to consider policy and implementation refinements to the Energy Storage Procurement Framework and Design Program (D.13-10-040, D.14-10-045) and related Action Plan of the California Energy Storage Roadmap.

Rulemaking 15-03-011
(Filed March 26, 2015)

**INFORMAL COMMENTS OF THE CALIFORNIA ENERGY STORAGE ALLIANCE
ON OCTOBER 17, 2017 PUBLIC WORKSHOP**

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The California Energy Storage Alliance (“CESA”)¹ hereby submits these informal comments on the AB 2868 Implementation Workshop held at the California Public Utilities Commission (“Commission”) on October 17, 2017.

I. INTRODUCTION

CESA appreciates the very helpful and collaborative discussion at the October 17, 2017 AB 2868 Implementation Workshop. CESA provides these informal comments with the goal of aiding the Commission and the Investor-Owned Utilities (“IOUs”) as they develop their AB 2868 Applications to ensure that the goals of AB 2868 are met in reasonable and prudent ways.

¹ 8minutenergy Renewables, Able Grid Energy Solutions, Adara Power, Advanced Microgrid Solutions, AES Energy Storage, AltaGas Services, Amber Kinetics, American Honda Motor Company, Inc., Bright Energy Storage Technologies, BrightSource Energy, Brookfield, California Environmental Associates, 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., Sempra Renewables, Sharp Electronics Corporation, SolarCity, Southwest Generation, Sovereign Energy, Stem, STOREME, Inc., Sunrun, Swell Energy, 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>).

Fundamentally, CESA believes AB 2868 is a helpful public policy which should direct deployments of energy storage to market segments that are not currently nor likely to be served.

CESA applauds the IOUs and the Commission for their contributions and leadership in the Workshop. The Workshop facilitated discussion of potential candidate areas and ideas for AB 2868 energy storage projects. The Workshop also allowed for industry and stakeholder input and feedback regarding potential areas of focus for AB 2868-related procurement. As discussed by a number of stakeholders, some customer segments, such as schools, are already well served and thus may not be reasonable or appropriate for the utilities to target or focus on at this time.

Importantly, AB 2868 directs IOU applications to consider project deployments in areas or ways that “do not unreasonably limit or impair the ability of nonutility enterprises to market and deploy energy storage systems.”² This ‘guardrail’ ensures that the state deploys and directs the capabilities of regulated monopolies, the IOUs in this case, only towards market segments that are currently not being reasonably served by non-monopoly businesses or markets. For instance, actions by the IOUs to invest *in already-functioning* behind the meter (“BTM”) markets may constitute an unreasonable use of a regulated monopoly because ratepayers might then have to pay for the recovery of both the investment and the return on an investment, all of which could have occurred without IOU action or ratepayer expense. IOU actions may also chill the market for third party developers, ultimately slowing the roll-out of energy storage which ill fits the larger goals of AB 2868 and other related state policies.

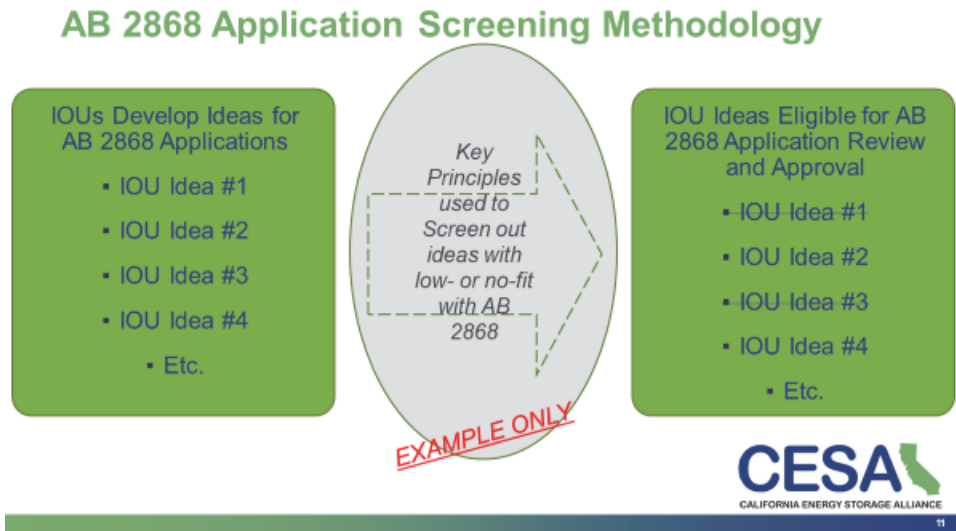
² California Assembly Bill 2868, Author: Gatto, 2016.

CESA believes that AB 2868 deployments should be incremental to, and separate from, areas of Commission focus that may already be directing or authorizing energy storage competition, services, deployments or programs. CESA thus suggests that AB 2868 applications exclusively focus on either (i) areas that are neither currently served nor likely to be served through existing and reasonably expected non-IOU companies, programs, as well as (ii) areas that will not be served or otherwise eligible for energy storage solutions via Commission-directed actions or proceedings, such as Distributed Resource Plan (“DRP”), Integrated Distributed Energy Resources (“IDER”), AB 2514 procurements, Electric Vehicle (“EV”) Applications, and other existing programs. In this way, the goals of AB 2868 can be successfully met by the focusing exclusively on programs or investments in areas not otherwise able to access energy storage solutions.

II. THE COMMISSION SHOULD ADOPT A PRINCIPLE-BASED REVIEW PROCESS TO DIRECT THE INVESTOR OWNED UTILITIES’ AB 2868 APPLICATIONS.

CESA provides input here to help ensure that any IOU AB 2868 applications are properly directed and focused on projects likely to be approved. As such, the IOUs should benefit from the establishment of a high-level methodology which will be used to review their applications. CESA suggests the use of a principle-based screening methodology. This methodology would work by clarifying guiding principles for any AB 2868 projects, and screening out projects that conflict with any of the pre-established principles, as illustrated by Figure 1, below.

Figure 1: Screening Criteria can guide IOUs to prevent including projects in AB 2868 Applications that may not be approved due to low or no fit with key principles



This approach should help eliminate wasteful work by the IOUs on AB 2868 projects or ideas that may ultimately not be approved. This would also avoid disruption to private industry players who can clearly operate and pursue projects with certainty that IOU focus will be elsewhere. This methodology thus sets up the likelihood of ‘win-win’ IOU applications in which AB 2868 criteria and goals are met, incremental new energy storage deployments can successfully occur, IOUs efforts are appropriately targeted, and already or soon to be functioning markets continue to develop freely without intervention by a regulated monopoly.

CESA is confident that there will be many areas for IOU deployments of AB 2868 projects and, while still seeking to deploy the full amount of AB 2868 energy storage, the IOUs can be successful without entering already, or soon to be, functioning market segments.

III. KEY GUIDING PRINCIPLES SHOULD FOCUS AND DIRECT APPROVAL OR ELIMINATION OF PROJECTS IN ANY AB 2868 APPLICATIONS.

Reasonable guiding principles can channel the IOU AB 2868 Applications in ways that ensure success. CESA offers the following recommended Guiding Principles and provides brief support and explanation for each principle.

	<u>Principle</u>	<u>Notes</u>
1	Compliant with AB 2868	10-year project, distribution or customer-connected energy storage system, program or investments, no more than 25% BTM ownership, that accelerates storage deployments to achieve ratepayer benefit, reduce dependence on petroleum, meet air quality standards, and reduce GHG emissions.
2	Targeted to non-functioning market segments	Should avoid any area with a functioning market where similarly situated customers have been or may reasonably be served in the future.
3	Incremental to existing programs or market development areas and proceedings that are underway or expected	Should be incremental to and not-overlapping, within reason, with Demand Response, DRP, IDER, Self-Generation Incentive Program (“SGIP”), EV Applications, Storage OIR (AB 2514), Community Solar, or other existing or likely areas of energy storage deployments or competitive offering areas.
4	Promotes technology-neutral storage solutions and innovation	Promotes robust competition among viable energy storage technologies.
5	Leverages and builds third-party energy storage markets where feasible	Projects specifically contemplates and or contributes to growing the California energy storage market place and third-party capabilities by seeking to use programs or forms of IOU-industry collaboration, partnership, project-sharing, or other third party market development, e.g. joint financing, where applicable.
6	Cost-effectiveness ratio in line with program goals	Cost-effectiveness approaches may need to be unique to AB 2868 to support deployments to low-income or under-served areas, while still seeking to maximize benefits and reduce costs. Unique benefits such as resilience or ‘community or societal benefit’ should also be factored into any evaluation.

These six principles can effectively direct IOU applications while avoiding approvals of projects that fail to meet AB 2868 goals, are duplicative of existing efforts, disrupt existing market areas, or are unreasonable from a cost-effectiveness standpoint. The idea of leveraging AB 2868 applications to encourage development of the third party market’s learning or capabilities (e.g. in developing In-Front-of-the-Meter (“IFOM”) energy storage solutions that support resiliency and allow de-energizing lines during high-fire condition days while still

serving down-feeder critical customers) seems appropriate for California and in line with the Commission's AB 2514 work of considering and expanding the state's ability to leverage energy storage as a grid support tool while learning and establishing an energy storage market.

CESA understands that these principles may need to be augmented or adjusted. CESA suggests, however, that removal of one or more of these principles should be discussed first and based on a robust record. CESA believes these principles support an approach to AB 2868 that would be 'win-win' for the IOUs and California ratepayers. These principles allow the IOUs to explore and develop projects in line with AB 2868, to the benefit of shareholders, while also supporting learning, reliability, resiliency and the reach of energy storage in incremental ways to market segments currently not served.

IV. CESA APPLIED ITS GUIDING PRINCIPLES TO THE IOU LIST SHARED AT THE OCTOBER 17 WORKSHOP TO DEMONSTRATE WHICH OF THE BRAINSTORMED PROJECT IDEAS SHOULD BE ELIGIBLE FOR FURTHER CONSIDERATION OR FOR INCLUSION IN AB 2868 APPLICATIONS.

CESA appreciates the creativity and hard work of the IOUs in brainstorming potential AB 2868 project ideas. CESA believes the list provided by the IOUs and shared at the October 17 Workshop was helpful for discussion purposes and likely includes many ideas that could be workable. To inform the Commission and IOUs in the development of AB 2868 Applications and to demonstrate the application of the above-mentioned principle-based review, CESA undertakes here to review each idea and determine viability and fit as an AB 2868 idea, using the Guiding Principles listed above. These views are based on limited available information and should be considered indicative of CESA's early and preliminary understanding of the ideas shared jointly by the IOUs.

	<u>IOU AB 2868 Idea</u>	<u>Fit with Principles</u>	<u>Notes</u>
1	IFOM Energy Storage for Community Resiliency	High	This project could benefit from areas of IOU-industry collaboration or project sharing, if possible.
2	Microgrids for Increased Resiliency	TBD	More information on the nature and specifics of these projects may be needed to evaluate fit with principles.
3	Distribution Deferral	Low	While CESA supports consideration of energy storage for distribution deferral, this project category likely violates principle Number 3, because the DRP and IDER proceedings are already exploring energy storage solutions for distribution deferral. Some of the directed AB 2514 procurement may also focus on distribution deferral too.
4	Energy Storage for EV Fast Charging Infrastructure	Medium	While CESA supports consideration of energy storage to Transportation Electrification (“TE”), this project category may fit imperfectly with principle 3. As CESA understands it, the TE applications already contemplate investments in EV fast-charging. If the energy storage contemplated here was to be incremental, and not duplicative, this project category could warrant a higher score.
5	IFOM Energy Storage for Renewables Integration	Low	While CESA supports IFOM energy storage for Renewables Integration, the issue of the ‘duck curve’ is more of a system level issue being served through existing energy storage procurements and programs. Localized renewables integration challenges <i>on a distribution feeder</i> likely can be categorized as distribution investments, which are being considered in other proceedings and so probably should not be addressed through AB 2868.
6	Enhanced Generation Assets	Low	Depending on the project, this type of deployment, if distribution connected, could potentially fit with AB 2868 goals and principles, but may not be an ideal fit given existing proceedings and opportunities for this type of energy storage deployment. Further details on the project might inform any evaluation, <i>e.g.</i> is the generator in a disadvantaged area with poor air quality.
7	Energy Storage for Multi-Family Low	Medium or TBD	Depending on SGIP equity budget outcomes or other multi-family programs, this project category might be

	Income		a good fit for AB 2868 projects.
8	Solar Value Enhancements	Medium or TBD	So long as projects focus on 2868 compliance for customers not already or likely to be served, this category of projects could merit a high score in AB 2868 applications.
9	Energy Storage for Military Facilities	TBD	Further information on the nature of these projects and on the existence of a market to serve these projects would be helpful in reviewing the ‘fit’ of these projects with the Guiding Principles.
10	BTM Energy Storage Program for Renewables Integration	TBD	Further information on the nature of the problem these projects are solving would be helpful. While a program appears to fit well with principle five, this program may also overlap with distribution-system management proceedings, such as the DRP or IDER.
11	BTM Energy Storage Program for back-up generation substitution	High	With a focus on non-served markets, this program could score highly, particularly because, at first glance, it appears that no active proceedings are addressing this matter. Additionally, the use of programs will stimulate the energy storage industry broadly in CA
12	Energy Storage Make-Ready Incentive Program	High	This type of incentive program seems like it could score highly by targeting un-served communities and by stimulating and shaping the CA energy storage industry.

Based on CESA’s preliminary review and evaluation, it appears that IOU idea Numbers 1, 11, and 12 should be the primary focus of the IOU AB 2868 applications. While only qualitative, this evaluation shows that multiple areas are available for AB 2868 investments and programs, and that this work can be done in ways that not only targets under-served customers but also enriches and builds California’s the IOUs’ energy storage market and industry skill-sets. CESA’s evaluation may be updated with the benefit of more information, and CESA recognizes that IOU, Commission, and other stakeholder input could be critical to any scoring or evaluation of ideas.

V. **RESILIENCY RELATED TO DE-ENERGIZING LINES ON HIGH RISK FIRE DAYS AND SUPPLYING POWER ‘DOWNSTREAM’ WITH FORMS OF ENERGY STORAGE SHOULD BE EXPLORED.**

In light of recent fire storm-related developments, CESA believes AB 2868 may also create opportunities to expand the grid’s safety and resiliency by authorizing projects focused on providing reliability to customers during times and in locations where distribution or other lines can be de-energized. This concept could evolve out of IOU idea Number 1, which focuses on IFOM solutions to keep customer power on even when upstream outages occur.

VI. **THE COMMISSION SHOULD PROVIDE COST-EFFECTIVENESS GUIDANCE THAT AUTHORIZES AN ARRAY OF ENERGY STORAGE PROJECTS.**

The Workshop allowed for discussion of many aspects of AB 2868, including cost-effectiveness. While many cost-effectiveness tools exist and have already been used for evaluating IOU investments or programs, AB 2868 may create a situation where additional Commission guidance on cost-effectiveness is appropriate.

Cost-effectiveness for AB 2868 purposes should factor in learning and other goals, many of which may be challenging to quantify within a cost-effectiveness framework. But which, nonetheless, represent meaningful benefits to the state such as resiliency, safety, and increased access for certain vulnerable categories of ratepayers, *e.g.* disadvantaged communities. CESA believes this type of flexibility with use of cost-effectiveness tools would ensure success in achieving the statute’s directive to “minimize overall costs and maximize overall benefits.”

VII. **ALREADY SERVED MARKETS SUCH AS SCHOOLS AND COMMERCIAL AND INDUSTRIAL CUSTOMERS SHOULD NOT BE TARGETED IN AB 2868 APPLICATIONS.**

Presentations made at the AB 2868 workshop clarified that some market segments, particularly public sector groups like schools, have been and can be reasonably anticipated to continue to be, well-served and should not be targeted by for IOU investments pursuant to AB

2868.³ Given the many other areas where energy storage can provide helpful benefits to under-served or un-served market segments, CESA believes the Commission should direct the IOU applications away from schools in particular. This step would ensure compliance with the statute’s intent to “not unreasonably limit or impair the ability of non-utility enterprises to market and employ energy storage systems.”⁴

VIII. CONCLUSION

CESA appreciates the opportunity to submit these informal comments and looks forward to further collaboration with the Commission, the IOUs, and other stakeholders on this important work. AB 2868 is a special opportunity that should be leveraged to best provide benefits to key groups and the grid while also stimulating and growing California’s energy storage ‘tool-kit’ and capability set. California is leading the way in energy storage, and its leadership is helping others elsewhere achieve climate goals that fit with those of our state.

Respectfully submitted,



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³ Presentations by Demand Energy, GreenCharge Networks, and Stem at October 17, 2017 Workshop.

⁴ *Ibid.*