

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

Application of Pacific Gas and Electric Company (U39E) for Approval of Demand Response Programs, Pilots and Budgets for 2012-2014.

Application 11-03-001  
(Filed March 1, 2011)

And Related Matters.

Application 11-03-002  
Application 11-03-003

**PETITION OF THE CALIFORNIA ENERGY STORAGE ALLIANCE FOR  
MODIFICATION OF D. 12-04-045 ADOPTING DEMAND RESPONSE  
ACTIVITIES AND BUDGETS FOR 2012 THROUGH 2014**

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August 12, 2013

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

Application of Pacific Gas and Electric Company (U39E) for Approval of Demand Response Programs, Pilots and Budgets for 2012-2014.	Application 11-03-001 (Filed March 1, 2011)
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Pursuant to Rule 16.4 of the California Public Utilities Commission's ("Commission's") Rules of Practice and Procedure, the California Energy Storage Alliance ("CESA")<sup>1</sup> respectfully submits this Petition for Modification ("Petition") of Decision ("D") 12-04-045, (the "2012 through 2014 DR Decision").

**I. INTRODUCTION**

The 2012 through 2014 DR Decision<sup>2</sup> should be modified to clarify that small thermal energy storage systems integrated with direct expansion refrigerant based air conditioning units sized at 20 tons or less to offset on-peak energy consumption ("Small TES") do not qualify as

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<sup>1</sup> The California Energy Storage Alliance consists of 1 Energy Systems, A123 Systems, AES Energy Storage, Alton Energy, American Vanadium, AU Optronics, Beacon Power, Bright Energy Storage, BrightSource Energy, CALMAC, Chevron Energy Solutions, Christenson Electric Inc., Clean Energy Systems Inc., CODA Energy, Deeya Energy, Demand Energy, DN Tanks, Eagle Crest Energy, East Penn Manufacturing Co., Energy Cache, EnerVault, FAFCO Thermal Storage Systems, FIAMM Group, FIAMM Energy Storage Solutions, Flextronics, Foresight Renewable Systems, GE Energy Storage, Green Charge Networks, Greensmith Energy Management Systems, Growing Energy Labs, Gridtential Energy, Halotechnics, Hecate Energy LLC, Hydrogenics, Ice Energy, Innovation Core SEI, Invenergy, KYOCERA Solar, LightSail Energy, NextEra Energy Resources, OCI Company Ltd., Panasonic, Parker Hannifin, PDE Total Energy Solutions, Powertree Services, Primus Power, RedFlow Technologies, RES Americas, S&C Electric Co., Saft America, Samsung SDI, Sharp Labs of America, Silent Power, SolarCity, Stem, Sovereign Energy Storage LLC, Sumitomo Corporation of America, TAS Energy, UniEnergy Technologies, and Xtreme Power. 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>

<sup>2</sup> *Decision Adopting Demand Response Activities and Budgets For 2012 through 2014*, D.12-04-045, issued April 19, 2012.

“mature” and are therefore not eligible for incentives under the Permanent Load Shifting (“PLS”) Program established under the 2012 through 2014 DR Decision. PLS is a separate Demand Response (“DR”) incentive program for resources that permanently shift load from on-peak to off-peak times, including energy storage resources.

At the time the Commission issued its decision modifying the Self Generation Incentive Program (“SGIP”) to conform to SB 412 in September 2011 (the “SB 412 Decision”)<sup>3</sup> the Commission was actively considering PLS in the utilities’ DR programs.<sup>4</sup> The Demand Response incentive program for PLS (the “PLS Program”) then under consideration was subsequently approved by the Commission in April 2012. The SB 412 Decision granted SGIP eligibility to stand-alone AES on an interim basis during the pendency of A.11-03-001, *et al.* The PLS Program was ultimately implemented by Resolution E-4586, in May 2013 (the “PLS Resolution”).<sup>5</sup> The 2012 through 2014 DR Decision explains that the PLS Program is intended to provide incentives to “mature” thermal energy storage technologies, while the SGIP is intended to provide incentives to “emerging” advanced energy storage (“AES”) technologies.<sup>6</sup> The PLS Resolution, determined, however, that “there is insufficient factual record at this time to decide whether any particular TES is not mature, and therefore should be considered emerging.”<sup>7</sup>

This Petition, and the attached Declaration of Janice Lin, provide the factual record for Small

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<sup>3</sup> *Decision Modifying the Self-Generation Incentive Program and Implementing Senate Bill 412*, D.11-09-015, issued September 8, 2011.

<sup>4</sup> *Application of Pacific Gas and Electric Company for Approval of Demand Response Programs, Pilots and Budgets for 2012-2014*, A.11-03-011, *et al.*, filed March 1, 2011.

<sup>5</sup> *Resolution E-4586*, approved May 9, 2013, “This resolution implements a standardized, statewide Permanent Load Shifting Program for Southern California Edison Company, Pacific Gas and Electric Company, and San Diego Gas & Electric Company.”

<sup>6</sup> 2012 through 2014 DR Decision, Section 7.7.3.3, pp. 151-52.

<sup>7</sup> PLS Resolution, pp. 5-6. In addition, the PLS Resolution found that “the determination of what constitutes an emerging TES technology is beyond the scope of decisions appropriate through an advice letter proceeding.” This statement provides that determinations of “emerging” status require Commission action by a proceeding more formal than an advice letter. This Petition, and the attached Declaration of Janice Lin, are intended by CESA to satisfy the Commission’s procedural requirement set forth in the PLS Decision.

TES, and requests that the Commission modify the 2012 through 2014 DR Decision to clarify that that Small TES systems are in fact not a mature technology eligible for PLS incentives as of the date that this Petition is approved by the Commission.

**II. THE COMMISSION SHOULD DEEM THIS PETITION TIMELY FILED BECAUSE THE PLS PROGRAM WAS NOT IMPLEMENTED UNTIL MAY 2013.**

Rule 16.4(d) requires petitions for modification to be filed and served within one year of the effective date of the relevant decision unless the Commission finds adequate justification for a late filing. Since the PLS Program was not implemented until May 2013, and since this Petition relies in part on Commission statements contained in the 2012 through 2014 Decision and the PLS Resolution, CESA requests that the Commission determine, in accordance with Rule 16.4(d), that late submission of this Petition is justified.

**III. THE COMMISSION SHOULD MODIFY D.12-04-045 TO CLARIFY THAT SMALL TES SYSTEMS ARE NOT ELIGIBLE FOR PLS INCENTIVES.**

The 2012 through 2014 DR Decision is very clear that the PLS Program incentives “apply to mature thermal energy storage technology.”<sup>8</sup> This distinction between emerging and mature storage technologies reflects Commission policy that the SGIP should promote market transformation by incentivizing adoption of relatively new technologies that have the potential to achieve sufficient market adoption to realize substantial cost reductions through economies of scale.<sup>9</sup> By contrast the standards governing the PLS Program set forth in the PLS Resolution, are just as clear that incentives under the PLS Program will only be available to mature TES technologies that have a proven track record within the marketplace.<sup>10</sup> This policy preference is

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<sup>8</sup> See, 2012 through 2014 DR Decision, Section 7.7.3.3, pp. 151-52.

<sup>9</sup> See, SB 412 Decision, Conclusion of Law Number 3, p. 68.

<sup>10</sup> PLS Resolution, p. 5; *and see*, PLS Decision, Section 7.7.3.3, p. 152.

reflected in the SB 412 Decision's primary criteria to be used in order to distinguish emerging from mature technologies, namely: (i) recent commercial availability, and (ii) significant cost reduction potential.

AES technologies that meet the SGIP's GHG reduction and peak demand reduction goals “may become eligible for inclusion in SGIP as an emerging technology if their first commercial installation is less than ten years prior to SGIP funding ...”<sup>11</sup> Small TES satisfies the timing requirement because it has only been commercially available since 2005, as explained in the attached Declaration of Janice Lin.

The SGIP Decision also recognizes that AES technologies with the potential to achieve significant future significant cost reductions are properly categorized as emerging, rather than mature, technologies. This cost reduction requirement is consistent with, and furthers the SGIP's fundamental market transformation purpose by focusing SGIP resources on technologies poised to achieve substantial economies of scale through increased market adoption. As explained in the attached Declaration of Janice Lin, Small TES systems are projected to realize substantial reductions in the cost of production as its market penetration grows.

As set forth in the attached Declaration of Janice Lin, although the SB 412 Decision focuses on relatively recent commercial availability and the potential for significant future cost reductions as the requirements to qualify as an emerging storage technology, Small TES faces other market barriers that indicate that the market for this new technology is emerging and not mature. For example, without incentives to stimulate end-customer adoption, product distribution channels are currently limited; at present, Small TES is only available factory direct. Moreover, while Small TES can be obtained for commercial and industrial applications through

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<sup>11</sup> SB 412 Decision, Section 4.2.3, p. 18.

normal procurement channels, it is not presently available for residential applications because the economics cannot yet justify the unsubsidized up-front cost. Indeed, unlike customers of other distributed energy resources, potential customers of Small TES have no readily available mechanism to finance Small TES costs, such as an on-bill repay program. Moreover, utilities have yet to offer persistent and transparent price signals through TOU tariffs alone that encourage reasonably acceptable economic paybacks for end-customers. Taken together, all these facts point to a conclusion that Small TES has not achieved the broad market adoption indicative of a mature technology.

Given the recent commercial availability of Small TES, the technology's potential to achieve substantial cost reductions through greater market penetration, as well as other market barriers indicative of an emerging market for this new AES technology, it is clear that Small TES is an “emerging” technology and, thus, not a candidate for PLS Program eligibility. The Commission should therefore modify the 2012 through 2014 DR Decision to clarify that Small TES is not eligible for PLS Program funding.

**IV. CESA RECOMMENDS MODIFICATIONS TO D.12-04-045, AS SET FORTH BELOW.**

**A. The Discussion Section should be modified as follows:**

“We note that the DR PLS incentives approved in this decision apply to mature thermal energy storage technology, **except refrigerant based air conditioning units less than or equal to 20 tons**, and are therefore not eligible for incentives under the Self-Generation Incentive Program pursuant to the guidelines adopted in D.11-09-015.” (p. 152)

**B. Proposed Amendment to Ordering Paragraphs:**

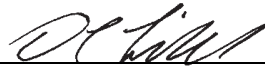
Ordering Paragraph 61 should be modified as follows:

“The request for proposals and funding for the Permanent Load Shifting emerging technology programs, **including refrigerant based air conditioning units less than or equal to 20 tons**, are denied **because the PLS Program is limited to mature technologies.**” (p. 226).

V. **CONCLUSION**

For the reasons stated herein, CESA respectfully requests that the Commission grant this Petition and modify D.12-04-045 as set forth above as expeditiously as possible.

Respectfully submitted,



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Donald C. Liddell  
DOUGLASS & LIDDELL

Counsel for the  
**CALIFORNIA ENERGY STORAGE ALLIANCE**

Date: August 12, 2013

## **DECLARATION OF JANICE LIN**

1. My name is Janice Lin. I am the Executive Director of the California Energy Storage Alliance (“CESA”). CESA is a California membership-based advocacy group committed to advancing the role of energy storage in the electric power sector through policy, education, outreach and research. CESA's membership includes technology manufacturers, project developers, system integrators, consulting firms and other clean technology industry leaders. A current list of CESA’s member companies is attached as Exhibit A to this Declaration. CESA is active in numerous proceedings before the California Public Utilities Commission and other state and federal agencies, including this proceeding, its successor proceeding, R.12-11-005, and all related utility advice letters and Commission resolutions. My business address is:

California Energy Storage Alliance  
2150 Allston Way Suite 210  
Berkeley, CA 94704

2. I have over a decade experience in clean energy and energy storage market strategy, development and analysis. During this period, I have advised a diverse range of renewable energy and energy storage equipment manufacturers and service providers, large corporations diversifying into clean energy and energy storage, and real estate developers building sustainable communities and energy efficient structures, including most, if not all, of the companies identified in Exhibit A to this Declaration.

3. The purpose of this Declaration is to provide direct evidence in support the Petition of California Energy Storage Alliance for Modification of D.12-04-045 Adopting Demand Response Activities and Budgets for 2012 through 2014.



4. In my capacity as Executive Director of CESA, I am actively involved in analyzing and developing markets for new energy storage technologies. I provide strategic and technical support to CESA and its member companies to support the development of all energy storage technology markets and to further deployment of energy storage technology within California.

5. Small thermal energy storage systems integrated to offset peak energy consumption of direct expansion refrigerant based air conditioning units less than or equal to 20 tons ("Small TES") are not a mature technology because they were first tested in California with Anaheim Public Utilities in late August 2004 and first became commercially available in January 2005. The first Small TES utility rebate was approved by the Anaheim City Council for offer by Anaheim Public Utilities in July 2006.

6. Small TES is only commercially available today for commercial and industrial applications. Small TES for air conditioning is not currently commercially available for residential applications.

7. Small TES is only commercially available factory-direct. There are no established product distribution channels for Small TES other than factory-direct order and delivery.

8. Currently, potential customers of Small TES have no readily available mechanism to finance project costs, such as an on-bill repay program. Moreover, California's utilities have yet to offer persistent price signals through time-of-use tariffs or other mechanisms that encourage acceptable economic paybacks or return on investments for end-customers of any form of energy storage. For example, the retail cost of a Small TES systems is between thirty and thirty-two thousand dollars for a five ton thermal energy storage system. Typical utility

tariffs offer between \$1,200 and \$1,500 in end-customer energy savings per year to shift a five ton air conditioning load to off peak hours. At this rate, return-on-investment (ROI) typically exceeds twenty years unacceptable to business owners and tenants. Such a long ROI projection cannot support commercially meaningful Small TES market expansion in California.

9. Incentive programs offering end use customers investing in Small TES the potential to realize a ROI within four to six years would significantly reduce existing market barriers to widespread Small TES deployment in California. Today, such ROI can only be achieved if Small TES is eligible for participation in the SGIP.

I hereby affirm, under penalty of perjury, that the information provided in this Declaration is true and correct to the best of my knowledge and belief.

Dated this 12<sup>th</sup> day of August, 2013 at Berkeley, California.



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Janice Lin

**EXHIBIT A**

**TO DECLARATION OF JANICE LIN**

# CESA – Strength Through Diversity & Collaboration

## Steering Committee



## General Members

