

BEFORE THE PUBLIC UTILITIES COMMISSION OF
THE STATE OF CALIFORNIA

Order Instituting Rulemaking Pursuant to
Assembly Bill 2514 to Consider the
Adoption of Procurement Targets for
Viable and Cost-Effective Energy Storage
Systems.

R.10-12-007
(Filed December 16, 2010)

**REPLY COMMENTS OF DIVISION OF RATEPAYER ADVOCATES
ON THE ASSIGNED COMMISSIONER RULING ON STORAGE
TARGETS**

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I. INTRODUCTION

The Assigned Commissioner's Ruling (ACR) issued on June 10, 2013 requested comments on proposed targets for Energy Storage. Over 40 parties filed comments on July 3, 2013. The Division of Ratepayer Advocates (DRA) hereby provides its reply comments, making the following new points:

- The targets must represent actual operational need because if the storage is not needed, then it is not cost-effective.¹
- DRA supports the ACR in excluding pumped-hydroelectric (hydro) projects to the extent that they are so large that they dilute the target and prevent the program from achieving its market transformation benefits.
- Information on energy storage bids should be confidential in accordance with Decision (D.) 06-06-066, as Pacific Gas and Electric (PG&E) requests.

¹ As the following parties note, storage that is not needed is not cost-effective. California Wind Energy Association (CALWEA) Opening Comments, p. 3; Calpine Opening Comments, p. 2.

These new comments supplement the points DRA made in its opening comments:

- The targets the ACR proposes do not meet the Assembly Bill 2514 statutory requirement because the Commission must show targets are “appropriate” and has not done so.
- To ensure that appropriate procurement based on need and cost-effectiveness occurs, the ACR should afford 100 percent flexibility across the three use categories and the overall targets.
- With the foregoing provisos, DRA supports using energy storage procurement to achieve grid optimization, renewable energy integration and greenhouse gas (GHG) emission reduction.

II. DISCUSSION

A. Targets and Procurement Must be Based on Both Need and Cost-Effectiveness

Opening comments support DRA’s proposed 100 percent flexibility storage target program as indicated by the numerous parties who state that targets with limited off-ramps are inappropriate.² Numerous parties also indicate that inflexible targets could increase ratepayer costs by forcing IOUs to procure storage that is not needed.³ Because need is inextricably linked with cost-effectiveness, procurement must be based on need as well.

1. Targets Must be Based on Need and Cost-Effectiveness

Before the Commission sets targets, it must determine that there is actually a need for more than 1300 megawatts (MW) of storage in the system or in the local areas where storage providers will install their facilities. Ratepayers should not fund storage that the grid does not need, and procurement should only occur to meet that need. DRA agrees with the California Wind Energy Association (CALWEA) and Calpine, who state, “if

² San Diego Gas and Electric Company (SDG&E) Opening Comments, p. 4; Marin Energy Authority (MEA) Opening Comments, p. 3; Pilot Power Opening Comments, p. 6; Center for Energy Efficiency and Renewable Technologies (CEERT) Opening Comments, p. 6; Jack Ellis Opening Comments, pp. 7-8.

³ SDG&E Opening Comments, p. 4; Independent Energy Producers (IEP) Opening Comments, p. 4; Southern California Edison (SCE) Opening Comments, p. 2; Energy Producer's & Users Coalition (EPUC) Opening Comments, pp. 5-6.

there is no need, by definition it is not possible to cost-effectively satisfy that need with additional (un-needed) resources.”⁴

Even the parties who advocate targets, or increased targets, such as California Energy Storage Alliance (CESA) and the Sierra Club/Center for Environmental Justice Alliance (Sierra/CEJA), connect setting targets to need. Sierra/CEJA comments criticize the Renewable Auction Mechanism (RAM)-based procurement method as “practically ‘blind to *need*’” and therefore an inadequate means to maximize energy storage benefits.⁵ CESA comments that “[t]he Commission should require the utilities to procure *any* cost-effective storage technology *that meets a stated need*....”⁶ Regardless of whether targets are ultimately the appropriate tool to promote storage, there must be a stated and specific need for any storage procurement.

In addition, several parties, including DRA, assert that if the Commission adopts targets, then it must also adopt a high level of flexibility and off-ramps.⁷ Flexibility among the categories and the overall targets will ensure that the investor-owned utilities (IOUs) do not procure energy storage that is not needed, not cost-effective and not viable. Thus, the Commission should adopt 100 percent flexibility with any storage procurement targets.

2. Procurement Must be Based on Need and Cost-Effectiveness

Similar to basing any targets on need, storage procurement must meet a specific need in order to be cost-effective. The need requirement is the first step when the Commission evaluates the cost-effectiveness of various storage technologies. Again, if there is no need for the storage, then the Commission should deem the proposed energy storage resource not cost-effective.⁸

⁴ *Id.*

⁵ Sierra Club/Center for Environmental Justice Alliance (Sierra/CEJA) Opening Comments, p. 5 (emphasis added).

⁶ California Energy Storage Alliance (CESA) Opening Comments, p. 20.

⁷ SDG&E Opening Comments, p. 16; SCE Opening Comments, p. 1; PG&E Opening Comments, p. 6; MEA Opening Comments, p. 8; TURN Opening Comments, p. 4; IEP Opening Comments, p. 10; Calpine Opening Comments, pp. 7-8.

⁸ Furthermore, on the subject of setting targets and determining cost-effectiveness of storage, Mr. Ellis in his opening comments states: “Developers and sponsors of energy storage are the ones who should be free to develop any projects they wish since the cost-effectiveness evaluations suggest benefit/cost ratios greater than 1 for a variety of storage applications under a variety of assumptions.” Jack Ellis Opening Comments, p. 12.

Assessing cost-effectiveness is a multi-faceted analysis, and various parties state correctly that the Commission should not utilize the cost-effectiveness models by Electric Power Research Institute (EPRI) and KEMA to set targets or determine cost-effectiveness of various energy storage resources.² DRA agrees with these parties and believes that these models should only be a small part of determining cost-effectiveness. For example, Calpine states that both cost-effectiveness models fail to demonstrate cost-effectiveness of storage.¹⁰ Jack Ellis explains that "... any cost-effectiveness evaluation is based on projections of market prices and system conditions that may or may not be realized..."¹¹ DRA recommends that the Commission not adopt these models to determine the cost-effectiveness of energy storage.

B. Targets Should Not Increase Due to Pumped-Hydroelectric (Hydro) Storage Systems

In its opening comments, CESA advocated that the Commission include pumped-hydro in the targets.¹² CESA and ESA both urged the Commission to reconsider the ACR's proposal to exclude pumped-hydro from the targets. CESA proposes to increase the targets to over 4000 MW to accommodate large pumped-hydro and similarly sized projects.¹³ DRA disagrees. Increasing targets without identifying any need for such a large amount of storage will likely be very costly to the ratepayers. The cost of the ACR-proposed energy storage targets of 1325 MW is estimated to be up to \$3 billion¹⁴ with no identified proven benefits. CESA's proposal would more than triple the MW and likely triple the cost to about \$9 billion.¹⁵

² SCE Opening Comments, p. 22; PG&E Opening Comments, pp. 16-18; SDG&E Opening Comments, p. 18; MEA Opening Comments, pp. 10-11; TURN Opening Comments, pp. 5-6; SolarReserve Opening Comments, p. 10; MegaWatt Storage Opening Comments, p. 9; IEP Opening Comments, p. 12; EPUC Opening Comments p. 8; Clean Coalition Opening Comments, p. 12; Jack Ellis Opening Comments, p. 14.

¹⁰ Calpine Opening Comments, p.2.

¹¹ Jack Ellis Opening Comments, p. 11.

¹² CESA Opening Comments, p. 3.

¹³ *Id.* CESA recommends that eligibility proposed in the ACR be expanded to apply to all energy storage technologies, including pumped hydroelectric; and that the overall procurement target be expanded to 4,325 MW by 2020, with the additional 3000 MW added onto the transmission procurement bucket for the 2020 procurement cycle.

¹⁴ SCE Opening Comments, p. 5.

¹⁵ The question of how to incorporate pumped-hydro highlights one of the key problems with targets. The storage targets cannot accommodate a storage technology simply due to its size, which is not indicative of its

DRA agrees that large pumped hydro should be a part of the competition to meet system needs cost-effectively. However, the sheer size of large-scale pumped-hydro would likely exceed any targets (or needs), thereby preventing other more nascent storage technologies from competing against them. To resolve this problem, the Commission should exclude large-scale pumped-hydro energy storage from the procurement target program, but include smaller pumped-hydro projects. Large-scale projects should compete outside the set targets with other resources to fulfill needs identified/adopted in other proceedings such as Long Term Procurement Proceeding (LTPP) or Resource Adequacy proceeding (RA). The IOUs should conduct procurement based on identified need(s) outside the target quantities, as long as energy storage can meet the identified need most cost-effectively. Smaller projects may also participate in the procurement target program for the purpose of cost-effectively meeting specific needs.

C. The Commission Should Direct Storage to Particular Functions Rather Than Categories

DRA supports the parties that advocate for allocating energy storage targets by functions of particular technologies instead of by “buckets.”¹⁶ Specifically, California Independent System Operator (CAISO) encourages the Commission to focus on the operational characteristics of storage technologies and not particular categories of use or technologies.¹⁷ CAISO also states that these energy storage resources would include those resources that can provide fast ramping and regulation services to integrate increasing amounts of intermittent resources, or are located in locally constrained areas. Similarly, Megawatt Storage states “more clarity is needed on the Transmission, Distribution, and Customer use cases, and how to tell where a particular storage project falls.... The voltage is a poor guideline since the voltage needs to be stepped down to

appropriateness to meet a certain need or whether it is cost-effective. By excluding a certain type of storage, the target program may be eliminating a cost-effective solution. As an alternative to targets, energy storage should be part of open procurement options, such as an all-source Requests For Offers, which allow it compete with other resources. See DRA Comments on the Energy Storage Phase 2 Interim Staff Report, Feb. 4, 2013, pp. 6-7; DRA Reply Comments on the Energy Storage Phase 2 Interim Staff Report, Feb. 21, 2013, pp. 2-3.

¹⁶ California Independent System Operator (CAISO) Opening Comments, p. 2.

¹⁷ CAISO Opening Comments, p. 2.

low values before being connected to the storage.”¹⁸ Additionally, STEM, Inc. and SolarCity state: “The Commission could establish procurement targets based on the need for services (e.g. congestion relief, frequency regulation, distribution voltage management, flexible ramping, etc.) and all relevant technologies would be able to compete to deliver these services.”¹⁹

DRA agrees that the Commission should base targets on functions and operational characteristics of storage technologies to meet certain needs. If the Commission adopts DRA’s proposed 100 percent flexibility on the total energy storage procurement and flexibility within the buckets, in effect it would have results similar to CAISO’s and Megawatt Storage’s recommendations. With such flexibility, if the IOU identifies a need for a specific function, the IOU can procure for that function and the categories will not restrict it. This method of procurement would result in more cost-effective and efficient energy storage procurement.

D. Energy Storage Bid Information Should Be Confidential and in Compliance with D.06-06-066

DRA agrees with PG&E that bid information for energy storage should be kept confidential in accordance with D.06-06-066.²⁰ That decision found that disclosure of bid data could drive up or impact bid pricing, allow gaming and manipulation, and thereby harm ratepayers:

While we accept that the release of more information on utility procurement could lead to more efficient investment decisions, we must guard against the release of information that can lead to more opportunities for market manipulation. We seek to strike a balance between the rights of the public to open decision making, particularly with regard to the expenditure of ratepayer money, and the realization of market efficiencies through better information flow on the one hand, and the prevention of market manipulation on the other.²¹

¹⁸ Megawatt Storage Opening Comments, p. 5.

¹⁹ Joint STEM and SolarCity Opening Comments, p. 6.

²⁰ PG&E, Opening Comments, pp. 8-9.

²¹ D.06-06-066, Section IV(B)(2), *available at*

http://docs.cpuc.ca.gov/PublishedDocs/PUBLISHED/FINAL_DECISION/57772-03.htm#P193_25009

In accordance with the decision, the terms, conditions and pricing of bids submitted in utility RFOs should be afforded confidential treatment for three years.

III. CONCLUSION

For the reasons stated above, DRA recommends that energy storage targets and procurement be based on both need and cost-effectiveness; that energy storage targets not increase to accommodate pumped-hydro storage systems; that the Commission direct storage to particular functions rather than categories and adopt a 100 percent flexible energy storage target program; and that energy storage bid information be confidential in compliance with D.06-06-066.

Respectfully submitted,

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