

**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)

**COMMENTS OF THE UTILITY REFORM NETWORK ON THE ASSIGNED  
COMMISSIONER'S RULING PROPOSING STORAGE PROCUREMENT  
TARGETS AND MECHANISMS**



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**COMMENTS OF THE UTILITY REFORM NETWORK ON THE ASSIGNED  
COMMISSIONER'S RULING PROPOSING STORAGE PROCUREMENT  
TARGETS AND MECHANISMS**

Pursuant to the *Assigned Commissioner's Ruling Proposing Storage Procurement Targets and Mechanisms and Noticing All-Party Meeting* issued in this docket on June 10 ("ACR" or "Ruling"), TURN offers the following comments on the Ruling's proposal and related issues.

These comments are TURN's first formal action in this proceeding. In developing its positions in this case, TURN attempts to balance its support of two key, but potentially conflicting, goals: (a) the state's implementation of new technologies to meet customers' electricity wants in an environmentally sustainable manner, such as expanding the use of renewable and Demand Response resources, and (b) limiting the overall costs of electricity to customers. This balance is potentially at issue in this docket. TURN recognizes that storage technologies may play an important role in meeting the state's goal of providing more environmentally sustainable electric service. However, as compared to other technologies, storage technologies have historically not been perceived as cost-effective means for helping meet customer electric demands.<sup>1</sup>

TURN supports the Ruling's attempt to strike a balance by requiring the Investor-Owned Utilities ("IOUs" or "utilities") to pursue aggressive storage procurement targets between now and the year 2020 while also giving the IOUs the flexibility to seek to alter those targets should storage offers not appear cost-effective (Ruling, p. 19). However, where the ACR contends that "the targets should not be considered requirements or mandates, and will be subject to certain flexibility off-ramps" (p. 7), the limitations on such off-ramps effectively makes a large portion of these "targets" as binding as "requirements or mandates". As discussed below, TURN suggests the Commission raise the amount of such procurement the IOUs may seek to defer, or, in the alternate, that the levels of these off-ramps be reviewed again in future proceedings regarding the storage program based on the data the initial auctions provide.

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1 As discussed below, the findings of the cost-effectiveness studies that storage technologies can be cost-effective, though encouraging, are explicitly "preliminary" (ACR, p. 14). Further, estimated benefits for storage projects could easily turn negative with changes to key variables, such as cost.

Further, the IOUs should be provided flexibility to seek to change the range of procurement among the various buckets and also over time. Changing procurement targets over time could involve both deferring procurement to later auctions if some potential winning bids are especially uncompetitive and accelerating procurement in earlier auctions when additional offers beyond the procurement target appear especially attractive.

Finally, based on the shared experience of the Commission, IOUs and renewable developers in the early stages of Renewable Portfolio Standard (RPS) contracting, TURN also suggests the IOUs be provided an option to ask Commission forbearance to reduce their storage procurement if it would require contracting for projects that appear technically infeasible.

TURN responds to specific questions from Section 5 the Ruling (pp. 21-22) below. TURN anticipates offering additional comments on these topics in its Reply Comments due July 19.

**a. Please comment on this proposal overall, with emphasis on the proposed procurement targets and design.**

As stated above and developed further below, TURN appreciates the proposal's attempt to balance the push to develop storage resources with measures to help IOUs manage their customers' costs. As discussed above and below, TURN believes some changes to the proposal to increase the IOUs' flexibility will help them better manage customers' costs. (See responses to 'd,' 'e,' and 'f' below.)

TURN believes that the Renewables Auction Mechanism (RAM) offers a useful template for designing a process for the competitive procurement of storage resources. However, resources now being procured under the RAM tend to be renewable projects using proven, generic technologies with relatively rapid development schedules, such as photovoltaic projects. TURN expects that storage projects will be more technologically diverse and technologically risky and have longer and more uncertain development schedules. The RAM approach will thus likely need revision when applied to storage procurement to reflect the greater complexity of storage procurement. For example, a "Storage Auction Mechanism" could provide the utilities additional flexibility in their

evaluation and selection of winning bidders and in the wording and management of the contracts they sign with such bidders.

- b. Comment on whether any of the projects proposed to count toward the procurement targets be excluded, or any additional projects included, and on what basis.**

TURN offers no comments on this topic at this time.

- c. Comment on how actual operational deployment should be defined for PIER- and EPIC-funded projects potentially eligible to count toward a utility's procurement target.**

TURN offers no comments on this topic at this time.

- d. Comment on how any utility's procurement that exceeds a target in one year should be addressed and considered for future procurement targets.**

If a utility exceeds its procurement target in one year, such excess quantities should offset its procurement targets for following years. Further, if one or more proposals appear to offer a *very* cost-competitive solution, the IOUs should be allowed to exceed their procurement targets in a given year.<sup>2</sup> Conversely, the Commission should also clarify the proposal to explicitly require the IOUs to carry over any quantities not purchased in one auction to future auctions. (See 'f' below.)

- e. Comment on whether and to what extent utilities should be permitted flexibility in procuring among the use-case "buckets" (transmission, distribution, and customer-sited) of energy storage within one auction, and whether a minimum amount in each "bucket" must be targeted.**

TURN believes the IOUs should have flexibility to procure different quantities from the various buckets. As of now, the proposal sets MW targets among three buckets for each of the three IOUs. It is hard to conceive that any "optimal" or even preferred procurement would exactly match such procurement targets. Some flexibility among the buckets within a single auction and over multiple auction cycles could greatly improve the storage program's benefits, both with regard to minimizing customer costs and identifying and procuring the "best" storage resources.

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<sup>2</sup> The IOUs procurements may not match their procurement targets, especially for each technology bucket, because of the potential lumpiness of some storage assets. TURN presumes the program's rules will reflect such possibilities. TURN is suggesting here that the IOUs also have some leeway to propose changes to program targets to reflect the cost-effectiveness and feasibility of the bids they receive.

**f. Comment on the appropriate “off ramps” for relief from procuring up to each target and what metrics should be used to evaluate the appropriateness of the off ramps.**

Though, as discussed below, the studies’ cost-effectiveness findings regarding storage technologies are encouraging, it is possible that some or all of the offers actually provided to the IOUs’ auctions will not be cost-effective and/or be inflicted with market power concerns. As the Ruling recognizes, the IOUs thus need some sort of off-ramps to allow them to avoid purchasing storage resources that are not cost-effective or competitively-bid. The Ruling appears to agree with this principle in stating that its targets “should not be considered requirements or mandates” (p. 7).

However, the off-ramps provided in the proposal may not be adequate. The percentage of the target from which the IOUs may seek relief starts at only 40 percent in 2014 and falls to 20 percent by 2018 and 2020 (p. 19), which leaves the IOUs with limited flexibility should the storage market not develop as the Ruling (and TURN and many other parties) hopes. TURN believes the percentages should be raised.

Other measures could also be taken to provide the IOUs additional flexibility without undermining program goals. For examples, as discussed in ‘d’ above, the IOUs should also have flexibility to purchase additional capacity in earlier years if particular proposals appear especially attractive and apply any over-procurement in a given auction to later years’ targets. IOUs should also have the ability to defer procurement until later years should bids in a particular auction be especially unattractive.

In addition, as discussed in ‘e’ above, providing the IOUs more flexibility to procure among the buckets would also increase the likelihood of acquiring competitively-priced storage.

**g. Comment on how this proposal may be coordinated with Renewable Portfolio Standard procurement plans, as set out in Public Utilities Code section 2837.**

There is no need to coordinate the storage and RPS procurement plans in general. However, the completion of specific resources that combine both “renewable” and “storage” attributes will require the Commission to determine how such resources will be counted in both programs. Examples of such resources could include (a) solar thermal

projects with built-in integrated storage or (b) wind farms built with dedicated on-site storage projects. TURN is not herein offering comments on what policies regarding these types of resources should be.

**h. Comment on the options presented for ESPs and CCAs to either a) be required to procure an equivalent amount of storage projects commensurate with the load they serve or b) have their customers assessed the costs of the IOU procurement of energy storage projects through a cost allocation mechanism.**

As a general principle, TURN believes the customers of ESPs and CCAs must share in the net benefits or costs – whether positive or negative – of storage procurement proportionately with the bundled customers IOUs serve. Either alternative ‘a’ or ‘b’ above could be acceptable for achieving this goal. However, TURN cautions that it will be challenging to define and verify what an “equivalent amount of storage” is for an ESP or CCA, particularly given the variety of possible technologies that could be procured and their various uses. Further, TURN anticipates that while the IOUs will sign the long-term contracts necessary to enable the development of new storage projects, the ESPs – given their shorter-term business model – will only be able to engage in shorter-term, likely less costly storage procurement. The application of a Cost Allocation Mechanism may thus be the more reliable approach to allocating costs equally among bundled and unbundled customers.

**i. Comment on how the preliminary results of the cost-effectiveness models should be applied to the question of setting procurement targets.**

The Commission should keep in mind that the Ruling itself labels these cost-effectiveness models as “preliminary” and that the models “do not set out a Commission-approved methodology” (Ruling, p. 14). Further, the Commission should also recognize that while the studies’ results are encouraging as to the potential value of storage, they also show much potential for net benefits to be negative and to vary based on changes in one or a very small number of assumptions.<sup>3</sup> The Commission should thus not rely on

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<sup>3</sup> See DNV KEMA Energy & Sustainability, *DRAFT – Energy Storage Cost-effectiveness Methodology and Preliminary Results, DRAFT3 June 21, 2013*, available at [http://websafe.kemainc.com/CPUC/DNVKEMA-Energy%20Storage%20CostEffectiveness\\_Report\\_DRAFT3\\_June%2021-2013.pdf](http://websafe.kemainc.com/CPUC/DNVKEMA-Energy%20Storage%20CostEffectiveness_Report_DRAFT3_June%2021-2013.pdf), pages 6, 26, 41, 42 and 52.

these studies, and the promise for cost-effective technologies as presented in the studies, in setting the energy storage targets. Rather, more refined studies will provide better information, and – most importantly – the commercially-binding offers submitted by storage providers in response to utility auctions will provide the best information on storage cost-effectiveness.

**j. Based on the preliminary results, should the utilities set a cost cap for offers to be submitted in the 2014 auction? If yes, what should the cap be and how should the auction be structured to incorporate the cap?**

If TURN’s proposal in ‘d,’ ‘e,’ and ‘f’ above to provide the IOUs greater flexibility in storage procurement is adopted, TURN does not believe cost caps will be necessary.

TURN appreciates the opportunity to provide these comments.

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Respectfully submitted,

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The results in the Electric Power Research Institute’s *Cost-Effectiveness of Energy Storage in California, Application of the EPRI Energy Storage Valuation Tool to Inform the California Public Utility (sic) Commission Proceeding R. 10-12-007, Technical Update, June 2013*, available at <http://www.epri.com/abstracts/Pages/ProductAbstract.aspx?ProductId=000000003002001162>, tended to be more stable and favorable (see pages ix – xi and 4-8 to 5-4), though benefits appear particularly sensitive to the value of future “frequency regulation”.