

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.

Rulemaking 10-12-007  
(Filed December 16, 2010)

**CLEAN COALITION OPENING COMMENTS ON ASSIGNED COMMISSIONER  
RULING**

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July 3, 2013

## CLEAN COALITION OPENING COMMENTS ON ASSIGNED COMMISSIONER RULING

In accordance with the Assigned Commissioner Ruling from June 11, 2013, the Clean Coalition provides the following opening comments on the suggested energy storage procurement targets and related matters.

The Clean Coalition is a California-based nonprofit organization whose mission is to accelerate the transition to local energy systems through innovative policies and programs that deliver cost-effective renewable energy, strengthen local economies, foster environmental sustainability, and enhance energy security. To achieve this mission, the Clean Coalition promotes proven best practices, including the vigorous expansion of Wholesale Distributed Generation (WDG) connected to the distribution grid and serving local load. The Clean Coalition drives policy innovation to remove major barriers to the procurement, interconnection, and financing of WDG projects and supports complementary Intelligent Grid (IG) market solutions such as demand response, energy storage, forecasting, and communications. The Clean Coalition is active in numerous proceedings before the California Public Utilities Commission and other state and federal agencies throughout the United States in addition to work in the design and implementation of WDG and IG programs for local utilities and governments.

A summary of our comments follows:

- The Clean Coalition is generally very supportive of the ACR. We support the proposed procurement targets as reasonable and in the public interest. We

support the guiding principles specified in the ACR, which will help to optimize the grid to avoid or defer investments in new fossil fuel-powered plants, integrate renewable power, and minimize greenhouse gas emissions. We urge the Commission, however, to add “integrating high levels of DG” to the list of guiding principles.

- We urge the Commission to also explain how the proposed storage procurement targets were chosen. The targets should be designed to develop the market sufficiently so that it can support the integration needs of high levels of renewable energy and DG, while providing the market certainty for developers to invest in storage projects.
- We also urge the Commission to provide additional market certainty by requiring the utilities to procure up to the full amount of each biennial target as long as sufficient cost-effective bids are available.
- We suggest a Full Cost and Value Accounting approach for the Commission and stakeholders to determine cost-effectiveness. Under this approach, standard value pricing figures are determined, and made public, for each service that storage technologies can provide. Developers then bid their projects based on the standard value pricing, which by definition is cost-effective.
- We recommend that utilities be required to procure up to their full procurement targets for each biennial period as long as sufficient cost-effective bids are received. This is a resolution of the “off-ramp” issue raised in the ACR that both protects ratepayers against non-cost-effective projects but also provides sufficient market certainty for developers to invest in viable projects.
- The ACR suggests that in the “longer term” storage procurement targets will more fully consider need determinations. We request that the Commission clarify what “longer term” refers to – is it after 2020 or later in the period currently being considered? We support using need determinations for setting any additional storage procurement targets after 2020.
- We also recommend that the Commission consider in setting longer-term

procurement targets in accordance with more ambitious renewable energy scenarios, such as 50% by 2030, and high DG scenarios, that have been modeled in the Long-Term Procurement Proceeding already.

- The Clean Coalition supports the ACR in its recommendation that a portion of the procurement targets be made available for utility-owned storage projects. We recommend, however, that the Commission provide a rationale for the 50% figure.
- We also recommend that the Commission require each utility to conduct an RFO for the utility-owned tranche similar to that conducted for the third-party owned tranche. While the utilities will, by definition, own the energy storage projects in this portion of the program, there is no reason why the projects themselves can't be developed by third parties in a transparent bid process, with ownership transferred to the utilities upon an accepted bid.
- The ACR proposes using a RAM-like model for procuring third-party owned energy storage (p. 16). We are concerned that a RAM model won't be able to accommodate the technology diversity in today's energy storage market. We also question whether a RAM procurement mechanism would allow third-party owners to maximize the value of several revenue streams for different types of services that storage can provide. For these reasons and more we propose our Full Cost and Value Accounting approach as an alternative procurement mechanism.

## **I. General comments**

The Clean Coalition is generally very supportive of the ACR and its proposed procurement targets. We agree fully with the ACR's statement (p. 2): "Energy storage has the potential to transform how the California electric system is conceived, designed, and operated. In so doing, energy storage has the potential to offer services needed as

California seeks to maximize the value of its generation and transmission investments: optimizing the grid to avoid or defer investments in new fossil fuel-powered plants, integrating renewable power, and minimizing greenhouse gas emissions.”

The ACR also states (p. 3): “This ACR suggests procurement targets for energy storage with the goal of market transformation. The primary mechanisms are a reverse auction mechanism and a requirement to include energy storage alternatives in distribution system planning.” We urge the Commission to consider alternative procurement mechanisms, as we describe below, but we fully support the inclusion of energy storage alternatives in distribution system planning.

## **II. Comments on ACR questions**

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

The Clean Coalition is generally highly supportive of the ACR and its proposed procurement targets.<sup>1</sup> We support the proposed procurement targets as reasonable and in the public interest. We support the guiding principles specified in the ACR – optimizing the grid to avoid or defer investments in new fossil fuel-powered plants, integrating renewable power, and minimizing greenhouse gas emissions. We urge the Commission, however, to add “integrating high levels of DG” to the list of guiding principles.

We also urge the Commission to explain how the proposed storage procurement targets were chosen. The targets should be designed to develop the market sufficiently so that it can meet the integration needs of high levels of renewable energy and DG.

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<sup>1</sup> The ACR in places uses the term “biannually” to describe the proposed two-year schedule for energy procurement targets (bottom of p. 16). However, “biennially” is the more appropriate term since biannually usually refers to events happening twice a year.

We also urge the Commission to add some teeth to the procurement targets in order to provide additional market certainty. Specifically, we urge the Commission to require the utilities to procure up to the full amount of each biennial target as long as sufficient cost-effective bids are offered. Cost-effectiveness should be determined based on the calculated aggregate value of the various services provided by storage facilities, as discussed below. We refer to this as the Full Cost and Value Accounting approach and it resolves the “off-ramp” issue raised in the ACR.

With respect to procurement off-ramps, the ACR states (p. 7): “In this context, a target represents the number of MW of storage capacity that each utility would solicit. Thus, the targets should not be considered requirements or mandates, and will be subject to certain flexibility off-ramps as further described below.” We recognize the need to avoid overly rigid mandates with respect to energy storage since this is still a nascent market. However, the countervailing concern is market certainty. The Clean Coalition feels that the approach proposed by the ACR provides insufficient market certainty to promote the developer and deployment response that the ACR and the Commission desires. Our proposed alternative below provides additional market certainty while also ensuring cost-effectiveness.

We note also that in recent procurement programs where utilities have been provided discretion, generally the utilities have procured less than the targets – sometimes significantly less. We fear that the ACR’s proposal will lead to a similar less than optimal response with respect to actual energy storage procurement.

The ACR suggests that in the “longer term” storage procurement targets will more fully consider need determinations. We request that the Commission clarify what “longer term” refers to – is it after 2020 or later in the period currently being considered? We support using need determinations for setting any additional storage procurement targets after 2020.

We also recommend that the Commission, in setting longer term procurement targets,

consider likely renewable energy scenarios, such as 50% by 2030 and high DG scenarios, that have been modeled in the LTPP already.

The Clean Coalition supports the ACR in its recommendation that a portion of the procurement targets be made available for utility-owned storage projects. We recommend, however, that the Commission provide a rationale for the 50% figure since none is provided. The proportion of utility-owned storage should be evaluated for each use category in terms of the best interests of ratepayers and the potential impact on the market for storage services.

We also recommend that the Commission require each utility to conduct an RFO for the utility-owned tranche similar to that conducted for the third-party owned tranche. While the utilities will, by definition, own the energy storage projects in this portion of the program, the projects themselves should be developed by third parties in a transparent bid process, with ownership transferred to the utilities upon an accepted bid. This is important for protecting the interests of ratepayers.

The ACR proposes using a RAM model for procuring third-party owned energy storage (p. 16). We are concerned that a RAM model won't be able to accommodate the great diversity in storage technologies at this time, due to the "one size fits all" approach that is part of the current RAM (for each major technology type). We also question whether a RAM procurement mechanism would allow third-party owners to maximize the value of several revenue streams for different types of services that storage can provide over the term of a project. Therefore, we prefer the Full Cost and Value Accounting approach that is described below.

We support the ACR's recommendation to keep bid information confidential for one year only. ACR states: (p. 20): "All data related to all bids, both successful and unsuccessful, in each auction should be considered non-confidential, except for cost data. The cost data of successful bids would be confidential for one year following Commission approval of a storage power/services purchase agreement."

*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.*

We agree with the list identified by the ACR.

*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.*

This initial PIER/EPIC funding may be necessary for early (2014 tranche) projects to prove cost-effective. It seems that the only benefit to not counting such projects is to keep those MW of procurement open for more optimal projects, and we don't see this as necessarily beneficial. As ES proves increasingly cost-effective, it shouldn't need a defined procurement policy for deployment. It should, rather, be able to compete on its own merits once utilities and market participants recognize the value provided by storage.

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

We recommend that any procurement in excess of that year's targets be deducted, on a one-to-one basis, from the next biennial target.

*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.*

The Clean Coalition strongly supports having set numbers per bucket. Each type of storage has its place. We are most interested in distribution-interconnected storage, however, and we would not want to see other types of storage subscribed at the expense of distribution-interconnected storage. If a utility feels that the storage buckets need to be re-allocated, subsequent to program commencement, it should be required to submit an advice letter in this proceeding, allowing all parties and the Commission to weigh in appropriately. We don't at this time have a recommendation regarding what percentage, or how many MW, should be assigned for each bucket.

*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.*

The Clean Coalition feels that the cost-effectiveness tools developed in this proceeding may provide the appropriate basis for “off ramps” and ratepayer protection. We propose a Full Cost and Value Accounting approach, using the analyses developed by EPRI and DNV KEMA, under which the Commission, utilities and other stakeholders will create standard process for evaluating storage projects and standard value figures for a comprehensive set of the various services provided by storage facilities. If the Commission elects to not to set standard value figures or approve a set of services to value at this time, we recommend that the Commission, at a minimum, establish that cost-effectiveness shall include a standard process for evaluating storage projects based on a comprehensive list of benefits of storage, from a ratepayer perspective, that includes all services that relate to the ACR's guiding principles.

The standard value figures should be based on the avoided costs and value of services to ratepayers. These figures should change (we recommend annual true-ups) as markets change but these figures should be public and will provide additional market certainty for developers. Developers will utilize standard value figures to calculate the

economic feasibility of their projects and bid their projects accordingly. This approach is different than a traditional RFO and is not a RAM-style reverse auction. It has the most in common with the standard offer approach, based on avoided costs, pursued under PURPA in the 1980s and 1990s. It differs substantially, however, in recognizing that the storage market is quite different than the electricity generation market because there is a diversity of storage technologies and each of the various storage technologies is best suited to provide a different combination of services. As such, there is no single value that is appropriate for all storage technologies, or even for the three “buckets” identified in the ACR. Our standard value approach, for each service that storage projects can provide, recognizes this fact.

The EPRI report, looking at the cost-effectiveness of various types of energy storage, pursued a “Total Resource Cost” approach, focused on aggregate (stacked) value. The EPRI approach attempted to measure the various benefits provided by the different types of storage analyzed, and compared the value of these benefits to projected costs of the various types of storage. We can avoid thorny discussions about the likely costs of energy storage projects by instead focusing on the value provided by energy storage. If all parties can agree in this proceeding on the appropriate value of each of the various storage services, the market will respond positively based on the certainty of such valuations. Specifically, developers will be able to determine the viability of their projects based on publicly-available standard pricing for energy storage services.

Utilities should, under our suggested approach, be required to procure up to their full allocation under the proposed energy procurement targets, in each biennial period, if sufficient storage projects are offered that also meet the required eligibility criteria, including reasonable minimum warranty periods.

This approach strikes an appropriate balance between ratepayer protection and market certainty. Ratepayers and ratepayer advocates will be assured that any storage projects receiving contracts are cost-effective because the value provided is at or below market costs (by definition, since the standard pricing for each service provided will be

determined solely by calculating the value to ratepayers of such services). Equivalently, developers will receive the benefit of a transparent pricing regime that allows them to plan projects with enough lead time and certainty to create viable projects.

With respect to utility-owned storage projects, we recommend a variation on the standard value approach: utilities should have to demonstrate that their proposed storage projects meet or beat the standard value prices applicable to third-party owned projects. Essentially, each utility will “bid” projects to itself due to the required demonstration that each project’s proposed service must meet or beat the standard value pricing applicable to third-party owned projects. This is an efficient means for determining the cost-effectiveness of utility-owned projects that doesn’t require creating a separate and parallel structure. This approach would work in situations where the utility builds and owns the project itself or where it seeks to purchase projects from third parties – in either case, the utility will own the project and need to make the case to the Commission that the projects are cost-effective.

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

For planning purposes, the Clean Coalition supports coordination between energy storage procurement and the RPS procurement plans under Pub. Util. Code section 2837. However, beyond general planning coordination we don’t see a need for further coordination since energy storage procurement targets and RPS targets are otherwise independent.

We also recommend that ES procurement buckets be designed in coordination with current or future LTPP scenarios, and actual renewable deployment, which includes, but is not limited to, RPS procurement.

*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.*

Community choice aggregators (“CCAs”) should be provided flexibility to proactively develop their own procurement goals based on the unique needs of their customers.

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

As with our response to question f) above, we feel that the cost-effectiveness models should be used as a reasonableness limit for procurement targets. As AB 2514 directs, the utilities should only be required to procure storage up to the targets if such storage is cost-effective, and our proposal would define cost-effectiveness based on the standard values developed for each service that storage projects can provide. We recommend at this time that any storage projects that can be procured under our proposed standard values approach (Full Cost and Value Accounting) should be deemed cost-effective. Standard values for each service should be updated annually to ensure accuracy and to account for changing markets.

We note also that the EPRI and DNV KEMA reports are extremely useful but are not sufficiently comprehensive yet. For example, DNV KEMA’s does not include market value and EPRI’s does not include GHG emissions benefits.

*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?*

Under the Full Cost and Value Accounting approach we recommend above, no cost cap would be required for the 2014 auction. Rather, the standard pricing resulting from this approach would provide a de facto cost cap for each service provided by storage projects. The aggregate cost cap would be at the discretion of each developer because each developer will determine which services to include in its project and which to include in its bid to the utility. Accordingly, ratepayer value is assured and the market also enjoys enhanced certainty with respect to pricing of the various services storage projects can provide.

### **III. Conclusion**

In conclusion, we believe the Interim Staff Report is a useful step in the right direction and we urge the Commission to set storage procurement targets. We urge the Commission also to adopt our proposed Full Cost and Value Accounting approach for cost-effective procurement, which will ensure cost-effectiveness and also solve the “off ramps” issue raised in the ACR.

Respectfully submitted,

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Dated: July 3, 2013