

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 REPLY COMMENTS ON INTERIM STAFF REPORT AND
ENERGY STORAGE WORKSHOPS**

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In accordance with the Administrative Law Judge's ruling of January 18, 2013, the Clean Coalition provides the following reply comments on the Energy Storage interim staff report and the December 4, 2012, and January 14, 2013, workshops.

The Clean Coalition is a California-based group that advocates for vigorous expansion of the Wholesale Distributed Generation (WDG) market segment, which is comprised of renewable energy generation that connects to the distribution grid and serves local load. Since penetrations of WDG above about 20% require local balancing of supply and demand of energy, the Clean Coalition not only drives policy innovation that removes the top barriers to WDG (procurement and interconnection), but also drives policy innovations that will allow private capital to deploy Intelligent Grid (IG) solutions like demand response and energy storage. The Clean Coalition is active in proceedings at the California Public Utilities Commission, the Federal Energy Regulatory Commission, and related federal and state agencies throughout the United States. The Clean Coalition also designs and implements WDG and IG programs for local utilities and governments around the country.

A summary of our comments follows:

- We generally support CESA's opening comments, but urge the Commission to provide equal focus for small-scale local distributed energy storage technologies and large-scale storage technologies like pumped hydro storage.
- We strongly support full recognition of the inherent NQC value of storage, as detailed in CESA's opening comments, and continue to oppose the arbitrary disqualification recommended by SCE.
- SCE, PG&E, and DRA oppose setting procurement targets for energy storage, largely based on concerns about costs and distortion of markets. However, AB

2514 requires that any procurement targets be for cost-effective energy storage only, mooting this objection.

- AB 2514 expressly provides the Commission authority to lend policy support to cost-effective energy storage technologies in order to provide market direction and to help reduce costs further. We fully support the Commission’s efforts to bring this nascent market to scale so that all ratepayers can benefit through the greater grid integrity and resilience that will result, as well as the reduced integration costs for high penetration of renewables, allowing California to continue its leadership in the energy arena.
- The Clean Coalition agrees with the Green Power Institute’s suggestion that the current proceeding should do more to improve modeling of energy storage in the Long-Term Procurement Proceeding, as we have also been advocating in that proceeding.

I. Reply to party comments

a. CESA

The Clean Coalition is generally in agreement with CESA’s opening comments. CESA states (Opening Comments, p. 6): [Any energy storage procurement] “goals should be based on need, must be cost-effective and provide the necessary market signal to encourage project development and investment in California.” We agree with this statement but caution that judgments about cost-effectiveness must take into account all relevant quantifiable costs and benefits. The very significant value of incremental contributions from distributed storage toward avoided transmission, capacity and regulation facilities should not be overlooked or underestimated. The Clean Coalition is active in R.11-05-005, which is, among many tasks, examining in detail the value of Distributed Generation to ratepayers. We will be recommending that distributed energy storage be included in this calculation.

CESA states (p. 7): Goal-setting should “Take into account existing and planned energy storage development.” CESA also describes 4-5,000 MW of pumped hydro storage that will be in the advanced licensing stage in California by 2020 (with 2-3,000 MW expected online by 2020), which is good information for all parties and is encouraging data regarding the potential for large-scale storage in California. However, we also see numerous benefits from small-scale storage technologies, both at the distribution level and behind-the-meter, and we urge the Commission to ensure that any energy storage procurement goals that are set in this proceeding are not focused solely on large-scale storage facilities. Proximity to load is a major factor contributing to both the grid services value and the (avoided) costs of storage. In addition, local storage can not only complement, smooth and extend the peak period contribution of intermittent resources, but can shape and expand the peak “shoulder” period by absorbing excess peak capacity, reducing congestion, or shifting off-peak generation to peak demand periods.

We disagree, however, with CESA’s statement (p. 13): “The issue of costs of energy storage resources is best addressed on a project-by-project basis when utilities bring contracts to the Commission for approval.” While this may be possible for very large facilities, the Clean Coalition feels that it is more practical and efficient for the Commission to establish a cost-effectiveness scoring framework for each technology type, allowing projects to be more easily evaluated on a group basis. Also, smaller projects that fall within prescribed thresholds should be deemed cost-effective, thereby avoiding burdensome individual review by the Commission of what may be hundreds of similar projects. Moreover, it may be best to create a feed-in tariff/CLEAN program for at least some types of storage, which would also rely on a cost-effectiveness framework for establishing the price offered (or at least the starting price, which may then adjust based on market interest, as is the case with the Re-MAT established by D.12-05-035).

We strongly support CESA’s recommendations regarding NQC valuation and

assignment for storage raised on p. 21 of their comments. These comments are aligned with the position we have argued in this proceeding, and the LTPP, Resource Adequacy and Flexible Procurement proceedings that the aggregated value of resources should be considered, and failing to acknowledge the contribution of each component unfairly disadvantages facilities that can, together, meet the needed criteria and avoid unnecessary additional procurement and ratepayer expense. The higher value of distributed storage is in its short time period effects, and in many cases it may not be cost-effective to build longer duration capacity or reserve this capacity for a single function. Together, however, a large number of these distributed resources have as much capacity as a larger single dedicated facility and provide far greater reliability and grid integrity.

Last, we strongly agree with CESA's recommendation (p. 19 and 23) that the Commission direct the utilities to use CESA's Model All Source RFO for procuring Local Capacity Requirements as part of the LTPP process (R.12-03-014).

b. SCE

SCE opposes setting storage procurement goals or deeming storage a preferred resource. SCE states (p. 2): "Storage procurement targets are inappropriate at this time because they will distort competitive markets and prevent a robust and sustainable marketplace from developing."

We disagree with this statement for the following reasons:

- AB 2514 requires that any storage procured under targets set in this proceeding be cost-effective, mooting concerns about cost, by definition
- While in an ideal world markets would adequately provide public goods without intervention by regulators, it is commonly accepted that power markets

interact with many externalities that require regulatory oversight and intervention, including criteria pollutants and greenhouse gas emissions. If we are to be adequately prepared to coordinate and achieve the State's multiple policy objectives around renewable energy and climate change, address renewable integration issues, and even benefit from "first mover" advantage in market development, the Commission should be proactive. California has benefited greatly from foresight and innovation in generation and efficiency, and the development of new energy storage technologies is entirely comparable. Based on extensive research completed to date in California, reaching very high penetration levels of renewables and Intelligent Grid technologies – sufficient to meet California's goal of an 80% reduction in greenhouse gases by 2050 – can be done cost-effectively,¹ and energy storage is probably a key component.

- To ensure that we can integrate high levels of renewable energy in a timely and cost-effective manner California needs to create a supportive policy environment for energy storage, in order to help bring the energy storage market to scale and further reduce prices
- We are technology-agnostic when it comes to storage and we fully support fleshing out further the cost-effectiveness framework begun in this proceeding.
- Setting a procurement goal is a key part of the supportive policy environment that California needs to ensure timely and cost-effective development of energy storage at scale

Accordingly, SCE's assertion that a storage procurement target will "distort competitive markets" at this time is unfounded. All parties are calling for cost-effective energy storage, which will, by definition, not distort markets if there is a cost-effectiveness criterion for procurement. At the same time, demand must be present in order for providers to compete in supplying that market, and significant utility level demand is unlikely to occur without action by the Commission. Providing clear market signals for

¹ For example, a recent peer-reviewed study found that a California-sized grid could achieve 90-99% penetration of renewables at the same costs that we pay for electricity without increased renewables. Budischak, et al., 2013. Online at: <http://www.sciencedirect.com/science/article/pii/S0378775312014759>.

energy procurement allows suppliers to develop competitive solutions under the expectation that there will be a viable market in the future.

Given utility and institutional inertia,² it is often difficult for new technologies to gain traction in utility procurement, even if the costs and other features are competitive with status quo technologies. This is exactly where the role of forward-thinking regulators is most appropriate. By setting an achievable and cost-effective procurement target (2015 and 2020) the Commission will be providing appropriate guidance to help California achieve its energy and climate change goals, and help to lead the nation on these key issues.

SCE also states (p. 7): “SCE looks forward to a future where storage can participate in solicitations and actively compete against both conventional generation and alternative resources like advanced demand response.” The Clean Coalition shares this hope and we agree entirely that the ideal future is one in which all resources can compete on a level playing field, with all relevant costs and benefits quantified. However, because many energy storage technologies are still nascent, it is appropriate at this time for the Commission to provide policy support to reach this outcome. We are clearly not there yet, so it seems that SCE is advocating a “go-slow” approach that isn’t, in our view, appropriate given the urgency of various state and federal goals to transition away from fossil fuels. If we fail to develop adequate planning, experience, and market

² SCE states (p. 6):

SCE strongly objects to implications that investor-owned utilities (“IOUs”) lack either the will or the ability to properly consider new technologies such as storage. CESA’s claim that the “inertia of business-as-usual procurement must be overcome” ignores these ongoing efforts by utilities to transform and advance utility procurement processes as the market landscape continues to develop. SCE and other utilities are continually adapting to the changing energy landscape, changing requirements of the grid, and evolving public policy objectives.

SCE also describes numerous activities in energy storage procurement that it is engaged in. We fully support SCE’s activities in this regard. However, the Commission exists precisely because the interests of such industries are not expected to mirror the interests of the public, and both monopolistic and unregulated industries naturally distort markets. The timeline that SCE sets forth for its engagement with energy storage, and its opposition to appropriately aggressive development of energy storage policies in this proceeding, illustrates our point well: utilities require proactive regulatory direction, including setting reasonable procurement targets and timeframes. California’s consumer, safety and environmental protections did not occur in the absence of such direction.

development in the near term, we will not be prepared to take bigger steps in the following years.

SCE's go-slow approach is what Commissioner Florio, in approving the Track 1 Long-Term Procurement Proceeding decision (D.13-02-015) described as "paralysis by analysis."³ The 50 MW energy storage procurement requirement contained in that decision is a great first step toward bringing energy storage to the level playing field of free competition. However, the Clean Coalition believes that reasonable state-wide procurement targets are necessary at this time, and the 50 MW energy storage requirement may be a good model for a state-wide procurement goal, as outlined in our opening comments.

SCE states (p. 14):

CESA asserted large-scale procurement funded by ratepayers can help improve economies of scale and reduce costs. While this is true, spending enormous sums of utility customer money for the sole purpose of making something less costly in the future is a bad proposition, especially when the net benefits of storage are yet to be demonstrated. While better economies of scale is a helpful secondary benefit once a resource is found to be cost-effective, it is ultimately not the utility customers' obligation to improve the cost structure of competitive developers and manufacturers.

To the contrary, AB 2514 explicitly provides the Commission authority to do exactly what CESA is calling for and SCE is rejecting. Section 2836 states (emphasis added): "As part of this proceeding, the commission may consider a variety of possible policies to encourage the cost-effective deployment of energy storage systems, including refinement of existing procurement methods to properly value energy storage systems."

Contrary to what SCE states, AB 2514 directs the Commission to consider procurement targets for storage in order to encourage cost declines. The Commission cannot set procurement targets for storage technologies that are not cost-effective, but it certainly

³ http://solarindustrymag.com/e107_plugins/content/content.php?content.12106#.UR6AU1o4VV8.

can set targets that are designed to provide policy support to bring costs down further. The primary policy support that the Commission could provide for energy storage is to accurately assess its costs and benefits. In particular, it is not clear that current procurement practices accurately quantify benefits from storage technologies, so we look forward to working further with the Commission and parties to complete the cost-effectiveness tools in this proceeding.

It is also helpful to re-state the findings of the Legislature in approving AB 2514, many of which contradict SCE's statements (Section 1 of AB 2514):

The Legislature finds and declares all of the following:

- (a) Expanding the use of energy storage systems can assist electrical corporations, electric service providers, community choice aggregators, and local publicly owned electric utilities in integrating increased amounts of renewable energy resources into the electrical transmission and distribution grid in a manner that minimizes emissions of greenhouse gases.
- (b) Additional energy storage systems can optimize the use of the significant additional amounts of variable, intermittent, and off-peak electrical generation from wind and solar energy that will be entering the California power mix on an accelerated basis.
- (c) Expanded use of energy storage systems can reduce costs to ratepayers by avoiding or deferring the need for new fossil fuel-powered peaking powerplants and avoiding or deferring distribution and transmission system upgrades and expansion of the grid.
- (d) Expanded use of energy storage systems will reduce the use of electricity generated from fossil fuels to meet peak load requirements on days with high electricity demand and can avoid or reduce the use of electricity generated by high carbon-emitting electrical generating facilities during those high electricity demand periods. This will have substantial co-benefits from reduced emissions of criteria pollutants.
- (e) Use of energy storage systems to provide the ancillary services otherwise provided by fossil-fueled generating facilities will reduce emissions of carbon dioxide and criteria pollutants.

Last, the Clean Coalition agrees with SCE's criticism of CESA's claim that the 33% RPS mandate will lead to higher GHG emissions without storage (p. 15). It is clear that the 33% RPS mandate will result in net GHG emissions reductions in all scenarios.

c. PG&E

PG&E also opposes setting a procurement target or designating energy storage a preferred resource, partly on the grounds of an objection to “choosing ‘winners and losers.’” (Opening comments, p. 1). This objection fails to consider the fact that the people of California, through the Legislature, have indeed chosen winners and losers. The winners are greenhouse gas-reducing technologies like energy efficiency, demand response and renewables. The losers are those technologies that are incapable of meeting the quality, cleanliness, quantity and price demanded by consumers and voters. Where energy storage can lead to cost-effective GHG reductions, AB 2514 has given the Commission authority to provide policy support for energy storage. Moreover, intervention is in this case necessary to establish a level playing field and to provide access to new market entrants. No party is proposing that the Commission unfairly and permanently advantage any supplier or technology; on the contrary, we are seeking to balance the inherent inequity of entrenched market power and prior support to allow an open market to function and for winners to be identified by merit. Accordingly, PG&E’s objection based on the “winners and losers” argument lacks merit.

PG&E advocates for a similar “go-slow” approach as SCE has, focused on energy storage pilot projects for the foreseeable future. The Clean Coalition supports these pilot projects but encourages their expansion and broader application, including setting procurement targets for storage. Substantial ongoing procurement will provide more data under more varied applications and circumstances, preparing the utilities to take full advantage of storage as costs decline, while simultaneously causing costs to decline. We object to the go-slow approach for the same reasons set forth above in response to SCE.

d. DRA

DRA states its opposition to setting procurement targets (p. 6): “DRA opposes setting targets because there is no basis for the appropriate level of targets, and setting a larger target than what is actually needed will prove unnecessarily costly for ratepayers.”

However, this objection lacks merit because, again, AB 2514 expressly requires energy storage procured under any future targets to be cost-effective – so there can, by definition, be no net costs imposed on ratepayers.

e. GPI

The Green Power Institute worries that the LTPP is not currently assessing energy storage in its models adequately (Opening comments, p. 6): “If there is anything that this Proceeding can do in the very short term to encourage the LTPP Proceeding to include storage in the modeling for the 2012 plans, we would certainly support it.” The Clean Coalition agrees with GPI’s concern and its recommendation, and we have made similar recommendations in the LTPP.

II. Conclusion

In conclusion, we believe the Interim Staff Report is a useful step in the right direction and we urge the Commission to set an interim storage procurement target for distribution-interconnected energy storage, and to designate energy storage as a preferred resource.

Respectfully submitted,

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