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)

COMMENTS OF THE INDEPENDENT ENERGY PRODUCERS ASSOCIATION ON THE ENERGY STORAGE PHASE 2 INTERIM STAFF REPORT

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The Independent Energy Producers Association (IEP) submits the following comments on the Energy Storage Phase 2 Interim Staff Report (Interim Staff Report), released January 4, 2013, and the workshop convened on January 14, 2013. IEP's comments are presented in two sections. First, IEP provides a general overview of its position on the three policy issues up for consideration and resolution in this proceeding. Second, IEP comments on specific questions posed in the Interim Staff Report.

I. GENERAL OVERVIEW

The Interim Staff Report identifies three policy issues that will be considered and may be resolved as part of this proceeding. These three issues are (1) whether supply-side energy storage should be designated as a "preferred resource"; (2) whether procurement targets for energy storage are appropriate and, if so, how much should be procured; and (3) developing

an appropriate methodology for evaluation of the cost-effectiveness of energy storage.[1] Commission staff has asked stakeholders to comment on these three issues.

A. Instead of Defining Storage as a "Preferred Resource," the Commission Should Define the Operational Need and Allow Any Resource that Can Fulfill that Need to Participate

The term "preferred resource" came out of the loading order established in the 2005 Energy Action Plan II (EAP II) to indicate the resources that should be procured first to meet California's energy needs. Although the term "preferred resource" is not defined in EAP II, the Interim Staff Report uses the term to refer to cost-effective energy efficiency, demand response, renewable resources, and combined heat and power.[2] EAP II is a joint document adopted by the Commission and the California Energy Commission (CEC), and the Interim Staff Report does not propose to modify the loading order without the collaboration of the CEC.[3] However, the Commission is considering whether it should treat energy storage as a preferred resource in the utility procurements of energy and capacity that it oversees.[4]

While IEP agrees that the services that energy storage can provide should be properly valued in the procurement context, it does not follow that the Commission, by giving storage a "preferred resource" status, should elevate storage to the top of the resource stack above all other technologies capable of providing similar benefits. As a general matter, California is moving towards a product-oriented procurement framework. IEP appreciates the benefits that storage projects may be able to provide, including quick start, fast ramping, synchronizing to the grid with very little output, and shifting power between Time of Use (TOU) periods. However, many of the benefits offered by storage can also be provided by other

[1] Interim Staff Report, p. 4.
[2] Interim Staff Report, p. 17.
[3] Interim Staff Report, p. 18.
[4] Interim Staff Report, p. 18.

generation types. Storage should be valued along with other products needed to serve California ratepayers based on a technology-neutral valuation. For example, the ability of storage to deliver power during peak periods can and should be valued through proper establishment of TOU rates for energy deliveries. Quick start, low-Pmin, and quick ramping capabilities should be properly valued in the product definition of the Flexible Capacity Product currently under consideration by the Commission and the California Independent System Operator (CAISO). If storage is paired with a renewable energy resource and provides significant benefits by shifting renewable energy produced during off-peak periods to on-peak periods when demand is highest, then this value should be properly reflected in the Renewable Portfolio Standard (RPS) competitive procurement evaluation.

One of the key arguments advanced for classifying energy storage as a "preferred resource" is that the integration of storage into the resource base reduces Greenhouse Gas (GHG) emissions and improves air quality and overall grid efficiency.[5] However, in some instances, energy storage technologies may simply move net system power produced from natural gas- or coal-fired resources from one period of delivery to another while incurring storage and conversion losses. Thus, reducing GHG emissions is not an inherent property of energy storage, and how much energy storage technologies will actually reduce GHG emissions is not clear. In addition, with the advent of the cap-and-trade program, GHG costs are now embedded in the cost of providing electricity to consumers. Thus, the benefits of technologies that can reduce GHG emissions in California are already priced in the marketplace and reflected in the cost to operate power plants. Technologies that reduce GHG emissions already have an advantage in the market and there is no apparent need to further advantage these technologies by elevating them to the top of the loading order.

[5] California Energy Storage Alliance (CESA) presentation, January 14, 2013 Storage Workshop, slides 10, 38.

B. Procurement Targets for Energy Storage Are Unnecessary and Lead to Inefficient Procurement Outcomes

The Interim Staff Report and parties at the January 14th workshop presented a variety of proposals for how procurement targets for energy storage should be structured. Among these options are (1) procurement targets as a fixed percentage of a load-serving entity's load, structured as a capacity (MW) threshold; (2) pilot programs focused on specific applications or end uses, to correspond with the intent to develop the tools for cost-effectiveness analysis; or (3) a set-aside for a portion of Local Capacity Requirements or system need determination for preferred resources (specifically including storage).[6]

IEP opposes an arbitrary set-aside for storage technologies for several reasons. First, creating a set aside for storage is premature and does not ensure that the most cost-efficient and best-fit resource is procured. Any resources, including storage, that are able to provide the desired product should be allowed to bid. Instead of setting mandatory procurement targets for the Investor Owned Utilities (IOUs), the Commission should focus on removing any barriers that prevent storage technologies from competing on a fair basis with other technologies.

Second, as noted at the January 14th workshop, the CAISO has been making an effort to ensure that many different resources can actively participate in its markets by modifying its ancillary services markets to allow non-generator resources to participate, implementing its pay-for-performance regulation, and lowering its bid floor.[7] To promote fair competition among all types of resources, the Commission should state as a matter of policy that all-source solicitations should present no barriers to participation to any qualified resources, including storage.

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[6] Interim Staff Report, p. 19.
[7] See CAISO presentation, January 14, 2013 Storage Workshop.

Third, to the extent that pilot programs or Research, Development and Demonstration investments are needed to help assess the potential performance and effectiveness of storage technologies, these endeavors should be further explored. However, assigning arbitrary procurement targets to the IOUs undermines the existing competitive procurement mechanisms to acquire new generation resources and will not lead to the least-cost, best-fit procurement outcomes.

C. The Cost-Effectiveness of Energy Storage Should Be Determined in the Competitive Marketplace

The Commission is attempting to determine whether energy storage is cost-effective by running a variety of use cases through complex computer-based, economic models. As an alternative to modeling the potential of storage (based on arbitrary assumptions), IEP recommends conducting an all-source solicitation to determine whether storage is truly cost-competitive compared to other resources. To ensure the fairness of the competitive Request for Offers (RFO), the RFO needs to be sure that the delivered energy price and other capabilities of storage resources are clearly defined in a way that is comparable to the bids of other resources (such as a fixed heat rate or TOU prices for delivered energy and capacity prices for other services) so that the least-cost/best fit analysis can be performed. The results of the competitive RFO will make it clear as to the potential for storage to compete in the near term (2013-2020).

IEP perceives that California is moving toward an operational, product-specific market structure. Indicative of this trend is the variety of different efforts that are being discussed to develop a broader and more resilient market. These efforts include multi-year contracting for Resource Adequacy (RA), defining flexible capacity, and removing barriers to participation in the CAISO markets. Many of these efforts are geared toward expanding participation by non-traditional resources, and will implicitly make storage more cost-effective.

Relying on computer models to evaluate the cost-effectiveness of storage may prevent the Commission and stakeholders from appreciating the true value of storage resources. IEP recognizes that certain requirements that must be met to fulfill the statutory obligations of AB 2514, but it seems reasonable to point to existing procurement mechanisms to determine the cost effectiveness of energy storage resources.

II. RESPONSES TO SPECIFIC QUESTIONS POSED IN THE STAFF REPORT

1. Use Cases

Do the Use Cases provide an adequate representation of the range of valuable applications that energy storage currently provides to the electric grid?

With California moving toward a product-oriented procurement framework, "use cases" that focus on end-uses for one individual technology or resource may not be very helpful. Instead, the Commission should focus on defining the need (*i.e.,* the desired operational and environmental characteristics) and determining the resources that can meet those needs in the most cost-effective manner. Designing a program focused on individual use cases distracts from the larger goal of filling the product need in the most cost-effective manner. Further, this approach may lead the Commission down a path toward more set-asides for specific resource types irrespective of the resource's actual cost-effectiveness when compared to other suitable alternatives. Instead of isolating storage from the marketplace through a variety of use cases or procurement targets, the Commission should focus on integrating storage into the marketplace to determine how it compares against other technologies, in terms of both performance and cost-effectiveness.

Besides the section on cost-benefit analysis, which is still a work-in-progress, is there some critical element missing from the Use Cases?

The Interim Staff Report and the use cases describe the barriers to energy storage and offer an explanation of how these barriers can be overcome.[8] However, many of the barriers identified are not unique to storage. In fact, many of these barriers affect generators of all types of technologies. Some of these barriers need to be handled as part of a broader market design, and it would be useful for the Interim Staff Report and the use cases to address whether each barrier is unique to storage, or if it is a barrier for other technologies as well.

2. Preferred Resources

Why should Energy Storage be considered a "preferred resource"?

Energy storage should not be considered a "preferred resource" either in terms of the loading order of EAP II or utility procurements for energy and capacity. The benefits of reducing greenhouse gas emissions are not necessarily an attribute of storage technologies, and because these benefits are already priced into the marketplace, providing storage with a preferred status in utility procurements gives energy storage an unwarranted advantage in relation to other equally qualified, cost-effective technologies. Instead of giving storage a preferred status in procurements of resource to meet the state's energy needs, the Commission should define the operational need and allow anyone who is capable of filling that need to participate in an all-source or RPS solicitation.

Does the Commission need to work with Joint Agencies to modify the Loading Order or will a Commission policy statement suffice?

Energy storage should not be considered a "preferred resource" in terms of the utility procurement practices. See comments above. To the extent that the Commission does

[8] Interim Staff Report, pp. 15, 16.

intend to change the loading order as articulated in EAP II, it should work with the CEC to establish a common framework.

If there is going to be a policy statement from the Commission, it should indicate that the utilities' all-source solicitations should present no barriers to participation by any resource that qualifies to meet the unmet need or that can provide the desired product. The Commission should not have a policy preference for energy storage above other resources or technologies capable of providing similar products and benefits.

What are the implications of designating Energy Storage as a "preferred resource" in this Proceeding for other procurement proceedings?

The effect of designating energy storage as a preferred resource in this proceeding will flow into other proceedings, including the long-term procurement proceeding. A Commission policy statement designating energy storage as a preferred resource would require the utilities to give storage a priority in procurements for energy and capacity above other equally matched resources. This preference would lead to inefficient procurement practices and will not accurately reflect which resources can fulfill the unmet need in the most functionally efficient, cost-effective manner.

3. Cost-Effectiveness Methodologies

What models should be pursued for running the cost-effectiveness test?

To determine whether energy storage is cost-effective, the Commission should not run each of the individual use cases through complicated computer analyses. A simplified approach to determine whether storage is cost-effective is to enable storage resources to bid into the next all-source RFO. As noted above, the utilities should structure the all-source solicitation to eliminate barriers to participation by any resource that qualifies to provide the desired product.

After the solicitation, the Commission will have information to determine if storage is indeed cost-effective, and if not, whether it is beneficial from a policy perspective, given that other resources can fulfill the unmet need at a lower cost, to encourage the development of storage technologies. The Commission needs a metric to determine whether or not storage is cost-effective compared to other technologies. The 2013 all-source RFO is a convenient and ideal vehicle for this determination.

Is there a simplified approach to cost-effectiveness that would meet the Commission needs?

Yes. See response above.

To address Staff's concern that it may not be the best use of resources to run all of the Use Cases through cost-effectiveness models, is there a priority criteria or prioritized list of Use Cases that can be utilized?

The Commission should let the results of the 2013 all-source solicitation determine whether storage is cost-effective. Using this framework, there is no need to run each of the use cases through the cost-effectiveness models. Essentially, the cost-effectiveness model will be the 2013 all-source solicitation.

If not, how can we ensure that the analysis gets done for all the Use Cases in a timely manner?

See response above.

4. *Policy Options*

Does Staff's priority listing of Policy Options accurately represent the most important issues facing storage in the identified proceedings?

The proposed priority listing of policy options is:[9]

[9] See Interim Staff Report, p. 16.

1. Issues for Consideration and Resolution in the Energy Storage Proceeding
2. Potential Actions in Related Proceedings
3. Policies that Involve Other Entities Policies
4. Policies for Future Consideration by the Commission

IEP generally agrees with the priority listing of these policy options. However, as part of item number one (which includes energy storage as a preferred resource, procurement targets, and cost effectiveness), staff should consider adding the 2013 all-source RFO as a mechanism for determining whether storage can compete in a cost-effective manner with other equally qualified technologies.

Are suggested actions for resolution of barriers the best approach to advancing energy storage deployment?

The Interim Staff Report identifies nine broad categories of barriers to the deployment of energy storage systems.[10] Many of these barriers are not unique to energy storage. For example, the Interim Staff Report lists Resource Adequacy Value as a barrier to development of energy storage technologies.[11] One of the suggested resolutions to the barrier is to "allow multi-year contracting in RA."[12] While IEP could support the suggested resolution, this barrier is not unique to energy storage. The RA issue affects many other generation technologies.

Since this proceeding is dedicated to energy storage, it is helpful to have a list of all the barriers that may hinder storage development; however, it would be more helpful to indicate which barriers are unique to storage and are barriers that other resources do not face. Because many of the identified barriers impact other resources equally, the identified barrier

[10] See Interim Staff Report, pp. 15, 16.
[11] Interim Staff Report, p. 15.
[12] Interim Staff Report, p. 15.

does not specify a problem that needs to be solved to make storage more competitive, but rather identifies a general barrier affecting the entire market. To the extent that these market-wide barriers exist, they ought to be fixed as part of a broader market redesign where all parties can participate.

5. Related Proceedings

Does the list of issues in related proceedings capture the work being done in the other proceedings described?

The list presents a broad overview of the ongoing Commission proceedings that overlap with, or are related to, this storage proceeding. As other issues or forums are identified, they will need to be included and taken into consideration. One policy area that is not included in the Interim Staff Report is the CAISO study on renewables integration that is expected to come out later this year. It is appropriate to add this issue to the list of policy options that involve other agencies as it will likely have a large effect on the benefits that storage can provide.

III. CONCLUSION

In considering how storage should be treated going forward (*i.e.,* whether it should be treated as a preferred resource, whether specific procurement targets should be set, or how the cost-effectiveness of storage relative to other technologies is evaluated), the Commission should continue California's evolution toward a product-oriented procurement framework. Under this framework, all resources should be allowed to bid for a defined product, and the resource that can best provide the desired product at the least cost should be selected. To the extent that the Commission continues to protect specific resources from competition or give certain resources preferred status over others that can offer similar benefits and operational

attributes, the Commission runs the risk of creating inefficiencies in procurement and increasing costs to consumers.

Respectfully submitted this 4th day of February, 2013 at San Francisco, California.

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