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

LONGVIEW ENERGY EXCHANGE, LLC's REPLY COMMENTS

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Longview Energy Exchange, LLC, ("Longview") pursuant to the ALJ's Ruling Entering Initial Staff Proposal into Record and Seeking Comments, dated December 16, 2011, hereby files its Reply Comments to Comments of Parties to the Initial Staff Proposal in this matter. Longview is a developer of a pumped storage hydroelectric project more fully described below. Longview comments to represent the views of hydroelectric pumped storage-generated energy technology developers, which views were not expressed by any of the initial comments. Longview seeks to encourage Staff and the Commission: 1) to the extent possible, to consolidate and address issues related to overcoming market barriers to energy storage in this proceeding and allow the development of inputs into related proceedings, and 2) to retain consideration of procurement targets dependent upon the passage of cost-benefit thresholds determined in this proceeding.

As a new entrant into the discussion of energy storage in this proceeding, Longview appreciates the considered view of the utilities' comments and the robust analysis contained in the Initial Staff Proposal. Longview, as a private developer, has an interest in the successful

implementation of AB 2514 and for the parties to coalesce around a reasonable set of policy proposals. Longview supports the development of procurement targets based on cost-effective, proven technologies in order to facilitate the increased penetration of intermittent resources on the integrated California grid.

INTRODUCTION

A. Longview Energy Exchange

As indicated in Longview's Motion for Party Status, filed concurrently, Longview has submitted a Preliminary Permit application to the Federal Energy Regulatory Commission ("FERC") for a license to develop, own and operate a 2000 MW nameplate rating pumped-storage hydroelectric electric generating facility in the vicinity of Yavapai County, Arizona (the "LEE Project").[1] The LEE Project will use off-peak energy to pump water from a single lower reservoir to one or two upper reservoirs during periods of low electrical demand. The LEE Project will provide an economical supply of peaking capacity, as well as load following, system regulation through spinning reserve and immediately available standby generating capacity, among other ancillary services. The LEE Project reservoirs will be "closed loop", meaning that water in the reservoirs will continuously re-circulate.

Longview intends to develop the LEE Project for energy storage as both a generation and transmission asset that can provide ancillary services benefits to the regional transmission system. The LEE Project will involve construction of new water storage, water conveyance and generation facilities at off-channel locations that do not intercept a natural stream. The LEE

[1] The LEE Project is FERC Project No. P-14341.

Project therefore will develop substantial generation and storage resources with minimal environmental impact. The LEE Project is situated in Western Arizona near the I-40 corridor such that it is possible to interconnect to the CAISO grid.

B. Assembly Bill 2514

AB 2514 directed "the CPUC, by March 1, 2012, to open a proceeding to determine appropriate targets, if any, for each load-serving entity to procure viable and cost-effective energy storage systems and, by October 1, 2013, to adopt an energy storage system procurement target, if determined to be appropriate, to be achieved by each load-serving entity by December 31, 2015, and a 2nd target to be achieved by December 31, 2020."[2]

Section 2836(a)(1) refines this directive by stating "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." (Emphasis added). The legislature clearly intended for procurement targets to be thoroughly considered and developed by the Commission as part of this proceeding. Section 2836.2 states that "In adopting and reevaluating appropriate energy storage system procurement targets," the legislature listed directives that the commission "shall do" in this docket. Notably, the tasks that the Commission shall do include (b) using information derived from the California Independent System Operator ("CAISO") and (c) consideration of the integration of energy storage technologies with other programs, including demand-side management or other means of achieving the purposes identified in Section 2837

[2] Assembly Bill 2514 Legislative Counsel's Digest. AB 2514 amends Section 9620 of, and to add Chapter 7.7 to Part 2 of Division 1 of the Public Utilities Code.

that will result in the most efficient use of generation resources and cost-effective energy efficient grid integration and management. (Emphasis added.)

Importantly, the legislative directive relies on the Commission to determine a course for implementation based on cost-effective, viable energy storage technologies. Section 2836.4 states that "all procurement of energy storage systems by a load-serving entity or local publicly owned electric utility shall be cost effective." As a result, Longview submits that the legislature provided significant direction that this proceeding would provide the forum to integrate a variety of matters, some of which are directly pertinent to other forms of procurement besides targets.

The legislative direction in the plain text of AB 2514 should inform the Commission's analysis and the revisions of the Initial Staff Proposal. The statutory language indicates that procurement targets should continue as a focus of this proceeding, that cost-effectiveness is a paramount consideration and that this proceeding should be an integrative one in that the disparate elements related to other proceedings that may affect energy storage and implementation of the statute with other procurement methods should be accomplished in this proceeding.

REPLY COMMENTS

A. Pumped Hydro

By the account of the California Energy Commission ("CEC"), pumped hydro is the most cost-effective and commercially established energy storage technology today.[3] No doubt exists that other technologies are viable today and still others will become viable on both distribution and transmission scale in the future. It does not seem to Longview that pumped hydro storage

[3] *See,* California Energy Commission, Final Project Report, 2020 Strategic Analysis of Energy Storage in California (Nov. 2011), at p. 34. (Citing the technology as the "most cost-effective means of storing large amounts of electrical energy on an operating basis…a large, mature, and commercial utility-scale technology.") ("CEC Report")

will be marginalized in this process, but, by the same token Longview requests that the Commission recognize pumped-storage technology's proven track record and improving technology, as well as the fact that a robust pipeline of projects exists, including the LEE Project, which will have the ability to interconnect to the CAISO.

Many commenters focused on technologies still in a developmental stage, battery technologies or distribution level storage applications. However, pumped hydro is neither an outdated nor a cumbersome method of storing energy. When responsibly developed, the technology is ideally suited for renewable integration on a region-wide basis, and remains by far the most inexpensive method of doing so. Large energy-storage projects like the LEE Project may take 8-10 years to complete under FERC's current standards and procedures and associated state permitting processes. In addition, pumped storage projects have large construction costs associated with a large generating capacity. Having a defined market in place by 2020 due to a secure regulatory framework would make financing for projects like the LEE Project more attainable. In addition, allowing importation of energy storage projects located outside the state into the CAISO system should be allowed for storage supplied energy which meets the criteria specified in AB 2514.

As the CAISO described in its initial comments, under its proposal targets would be established for three capacity categories that have distinct ramping and dispatch capabilities, including a "regulation" category for resources that are able to quickly respond to the ISO's automatic generation control signals. Longview agrees that this proposal will help retain flexible resources (with the caveat described in Section B, *infra,* that this should not be accomplished over multiple overlapping dockets) that support integration of new intermittent renewable resources and will facilitate the participation of fast-ramping resources, such as certain energy

storage resources, in the ISO market and in the Commission's Resource Adequacy program. It is likely that pumped storage hydro would be highly suitable for all three categories that the ISO is considering.

B. Relevant Procurement Variables for Energy Storage Should Be Addressed in this Docket and Utilized as Inputs to Other Proceedings.

Longview, having not previously participated in Commission rulemakings, finds great value in the discussion of the Initial Staff Proposal and in the comments of Southern California Edison ("SCE") and others highlighting overlapping issues in other dockets – notably the Resource Adequacy and Long Term Procurement Planning dockets. In its comments, SCE proposes reasonable modifications to the Regulatory Matrix contained in the Initial Staff Proposal. SCE states that "for each barrier, there are certain regulatory proceedings that will be critical to resolution."

The Regulatory Matrix, as proposed by Staff and amended by SCE's comments, notes that Resource Adequacy values should be established for energy storage, and references the RA proceeding in Docket No. R.11-10-023. The Regulatory Matrix notes, and PG &E's comments agreed, that determination of long-term acquisition and procurement strategies align with the LTPP dockets to develop a long term contracting mechanism. DSM and RPS dockets are also referenced as two potential forums, among others, to fully address the range of attributes and considerations that will affect energy storage technologies and implementation of AB 2514.

Longview agrees that energy storage generation drives across multi-disciplinary sectors of the industry and must be considered in different market contexts in order to properly recognize the value that generators with storage capability can bring to the market. However, Longview encourages the Commission to consider, *in this docket*, the various aspects of storage

technologies and then to input those decisions into the format and ongoing decision-making processes in other dockets. To spread the consideration of storage into multiple discrete settings will obscure the issues affecting energy storage and delay the effective implementation of AB 2514. In addition, administrative economy and parties' resources will be forsaken as similar issues are dealt with in multiple forums.

An RA value for energy storage end uses or technologies can be determined in this proceeding as well as a procurement target or other long term procurement goals. In fact, the legislation explicitly directs the Commission to consider procurement of energy storage in this target, as referenced above. While specific acquisitions or competitive solicitations may be decided in the context of an LTPP, whether and to what extent procurements should occur is a topic directly addressed in the legislation, and therefore all relevant issues should be resolved in this proceeding that would allow the Commission to determine appropriate procurement targets.

Secondly, as referenced above, Section 2836.2(c) directs the Commission to take an "integrated" approach to other programs in this docket. As a result, Longview submits that the Commission and Staff should use the Regulatory Matrix for issues to be decided in this proceeding, the results of which will be integrated as inputs in the relevant RA, LTPP, DSM or other appropriate dockets.

This result will promote efficiency in the determination of relevant issues and addressing barriers to create a viable path for implementation of AB 2514. If, instead, issues are left to myriad dockets, each docket will present a new opportunity to raise issues that could be addressed in this docket regarding the merits and value of energy storage technologies. Parties such as Longview will have to spend a great deal of time and resources that will give undue advantage to utilities who can more easily navigate the multitude of forums. As a result, it is

likely that spreading discrete issues among numerous dockets will not achieve the desired goal, but will instead dilute the opportunity to overcome market barriers and establish a robust amount of energy storage. Longview suggests that the opposite approach is attainable and, if all stakeholders are allowed to participate, issues can be determined in this proceeding on energy storage that allow the Commission to input those findings into the relevant RA, LTPP, RPS and DSM proceedings.

C. Cost effectiveness – support for CESA comments.

Longview supports the request of the California Energy Storage Association ("CESA") comments to move the determination of cost-effectiveness protocols to Phase 1 of this proceeding. The language of AB 2514 is explicit in this instance that cost-effectiveness considerations are paramount, and a *prerequisite* to a determination of procurement targets. Given that directive, it is imperative that the Commission determine the appropriate cost-effectiveness protocol for energy storage technologies, such that other decisions and determinations may follow the cost-effectiveness test. The CESA cogently and correctly argued that cost effectiveness valuations should occur in Phase I of this rulemaking, and that procurement targets should follow. Longview agrees with CESA's analysis on this issue.

Longview also agrees with CESA comments that specific end uses or applications "will likely have a "primary" or "anchor" benefit stream, and a collection of "secondary" or "additive" benefit stream level applications of energy storage. CESA's rationale for adding the following proposed "multiple-benefit stream" applications (new end uses) is that these end uses are technically viable today and there are storage technologies that are commercially available that can provide these benefit streams." Technologies like pumped storage have the versatility that

the comments CESA reflect. This should be a primary consideration of the Commission in determining cost-effectiveness of energy storage technologies.

The CAISO comments argued that "the market potential for energy storage technologies can best be realized by ensuring that these technologies face a level marketplace that does not unduly favor one type of technology over another and instead allows different types of resources to compete with one another based on their relative ability to efficiently meet actual operational needs." Longview agrees with these and other comments that suggest technology neutrality is important and that cost-effectiveness should be the key starting point for analyzing storage solutions.

MegaWatt's comments argued that "Unless storage procurement targets are defined quickly, fossil fuel plants will be deployed for renewables integration and storage will not contribute its unique services of fast response, locations close to the load, low environment impact and increased local reliably at a lower cost when considered as an element of the overall fossil, DR, efficiency and renewable portfolio." Although Longview does not agree with the totality of MegaWatt's comments, this particular comment is an excellent and well-taken point. Determination of energy storage procurement policies is a <u>one-time</u> choice. With decreasing prices of natural gas supplies and the availability of fast-ramping combustion turbines that can load follow and ramp quickly, utilities may determine that gas resources are superior to non-fossil fuel storage methods. That decision would have cascading effects over two generations. There are time and market sensitive components to the Commission determination on procurement targets.

D. Procurement Targets are the Central Mandated Element of this Proceeding

For obvious reasons, utilities are generally opposed to procurement targets of any color, and as such the reaction of utility comments was uniformly against procurement targets. SCE stated that "the current opportunities for energy storage will expand when barriers are removed, and thus procurement targets are not necessary. Energy storage procurement targets could violate AB 2514's requirement to consider cost-effectiveness, prematurely pick technology "winners" and "losers," and ultimately harm ratepayers." As explained above, Longview shares the view that opportunities will expand when barriers are removed, and Longview shares the view that cost-effectiveness is a threshold determination before the Commission can decide on procurement targets.

However, Longview does not agree that procurement targets are bad policy. If that were the case, then Renewable Energy Portfolio Standards would not have been implemented and would not have engendered the nationwide adoption of renewable energy technologies at increasing levels of penetration and economies of scale. Procurement targets facilitate market creation and growth when barriers exist to otherwise prevent such new markets from either forming or growing. Procurement targets are not mutually exclusive with market forces in the manner suggested by several commenters, as evidenced in the implementation of RPS standards.

Further, AB 2514 clearly contemplates the development of procurement targets, not only in amounts, but in terms of parameters and viability. While procurement targets were not specifically approved, the decision was put to the Commission to thoroughly consider procurement targets as the central element of AB 2514, based on cost effectiveness thresholds. Longview reads AB 2514 as creating a process 1) to integrate and consider all relevant procurement issues and 2) to decide upon cost-effectiveness metrics and establish procurement targets if viable. Not only is that a reason to move the cost-effectiveness analysis of this docket

to the front burner, but it is also a reason to not dismiss procurement targets in any form or fashion at this stage of the proceeding. Quite the contrary, the statute makes clear that procurement targets, if cost-effective, are an end goal of this proceeding.[4]

CONCLUSION

Longview appreciates the opportunity to provide these comments to the Commission. Longview also appreciates the opportunity to work with the stakeholders who have filed comments and with the expert view of Staff as expressed in the Initial Staff Proposal. Longview asks the Commission to find and determine as follows:

1. That AB 2514 is best implemented by resolution of issues concerning RA values, cost effectiveness, long term procurement values and relation to other rulemakings and dockets, in this instant docket. Relevant data inputs can be determined in this docket and fed into concurrent relevant processes identified in the Regulatory Matrix.
2. That AB 2514 requires the determination of cost-effectiveness as a preliminary matter, and that a decision on procurement targets is the ultimate end goal of this proceeding.
3. That pumped hydro technology is a primary energy storage technology for consideration in this docket, and that any generation/storage technology that can directly or dynamically interconnect to the CAISO is an eligible storage technology.

[4] *See also* CEC Report, at p. 84 (Listing the first purpose of AB 2514. "[AB 2514] purposes include: (1) review and establish, if appropriate, opportunities for energy storage development and deployment in California; (2) reduce barriers to such development and deployment; (3) review and weigh the costs and benefits of such development and deployment; and (4) establish methodologies that address how those costs and benefits should be distributed.")

Respectfully submitted this 21st day of February, 2012.

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