

**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 July 3, 2013

**COMMENTS OF TAS ENERGY
ON ASSIGNED COMMISSIONER'S RULING PROPOSING PROCUREMENT
TARGETS AND MECHANISMS AND NOTICING ALL-PARTY MEETING**

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TAS Energy submits these comments pursuant to the schedule set forth in the *Assigned Commissioner Ruling Proposing Storage Procurement Targets and Mechanisms and Noticing All-Party Meeting*, issued on June 10, 2013 (“ACR”).

I. INTRODUCTION.

California leads the nation in its pursuit of clean energy, an efficient grid, and cost effective power. However, status quo regulatory and market barriers within California prevent the full deployment of energy storage technologies already deployed in other markets, and found cost effective by developers, hampering the sought after endeavors of this Commission. For this reason, the Commission’s proposed procurement targets for energy storage is a major step forward towards encouraging manufacturers and developers of these energy storage technologies to seriously consider investment in the California market. While there are a number of specific questions posed in the ACR, and much worthy of comment, TAS Energy will focus our comments on the concept of a procurement target, the procurement mechanisms and accountability, off ramps offered to IOUs, and the loading order. We will first address the questions specifically asked by the Commission in the ACR addressing the topics mentioned above.

COMMENTS ON THE SPECIFIC QUESTIONS POSED IN THE ACR

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

The proposed procurement targets will result in real market value placed on the investment in energy storage among the IOUs, and therefore committed focus and investment on the part of IPPs in California as well. Because all conventional gas turbine generation in California realizes a loss in capacity as outside temperatures increase, all existing and future gas turbines have the opportunity to recapture that loss capacity, and even increase its output, through adding a thermal energy storage chilling system to the plant, called Generation Storage. Unfortunately, numerous market barriers within procurement contracts currently make extraordinarily difficult the procurement of such retrofit opportunities, until or unless a facility's contract expires. Additionally, even then, the added grid wide services provided by the storage aspect of the system, like all other energy storage projects in California, are not adequately provided a market price or value relative to the service offered, in many cases, the benefits offered by the storage system are not compensated altogether, impacting the procurement of such a storage solution with a new gas plant. This includes the value of serving as a load sink for times when the grid is overloaded with swaths of intermittent wind or solar power and the value offered for time shift services, providing much needed peak power upon signal, among others. While many of these lost values are being addressed, and expected to be solved by new products established at the ISO, or under procurements for long term and resource adequacy needs, it is important to realize that such changes will take time before all market players are familiar enough and convinced enough of the pricing structures of these products to invest in them heavily. This time delay is not one California can afford, particularly given the permanent SONGS outage, and forthcoming OTC retirements. Energy storage technologies, our experience specifically with Generation

Storage (chilling and thermal storage for conventional gas generation), can cost effectively address the voids left by these two major changes to the California grid, while also offering added grid wide services. In fact, the cost to install this chilling and storage solution for existing gas turbines is around and often less than \$500/kw all installed costs included, and around \$300/kw all installed costs included when added to a greenfield site, and therefore is more cost effective than procuring entirely new generation. And yet, even with these economics it is nearly impossible to break through the status quo approach to procurement- heavily impacted by the market barriers already mentioned above. Clearly something must change drastically in California to cause the status quo approach to electricity development and procurement to be re-evaluated by the state's investor owned utilities and independent power producers. A procurement target that creates clear benchmarks by which the utilities must strive to achieve is certainly a drastic change that forces the status quo to pause, and new innovations and their performance to be given a serious and fair evaluation for addressing major system needs. Although procurement targets have not been needed in other markets to spur energy storage deployment, every market has had barriers that have had to be intentionally removed by their regulators in some way or another. As a technology manufacturer, we believe that the proposed targets will sufficiently eliminate the major barriers towards deployment of cost effective energy storage in California. In fact, we have already experienced increased dialogue among market players as a result of this proceeding and its perceived outcome, which we believe would disappear without formal approval.

Contracts and Procurement Methods

Regarding the details of the procurement targets, in particular the contracting requirements and procurement methods, TAS Energy would like to offer support to extensive and detailed comments that will be offered by the California Energy Storage Alliance, and will refer the

Commission to their detailed explanation, while simply introducing and endorsing them here.

Installation Targets

Namely, it is imperative that the procurement target proposal also include *installation targets*, as history has shown that not all resources procured in California are actually installed- at times due to the technology itself, at other times, due to regulatory uncertainties, leadership changes, IOU studies or contracting delays, etc. There is no greater way to destroy any hope of an energy storage market (or any market for that matter) than to cause market uncertainty regarding whether, at the end of a long and costly development process, a procured resource will be installed and operating in a timely manner. Installation targets are a good way to help prevent a possible situation in which market uncertainty evolves.

All Source RFOs or Tolling Arrangements

TAS Energy agrees with CESA's analysis that a Reverse Auction Mechanism approach to the procurement of energy storage technologies is not flexible enough to fully account for all values and services provided by energy storage technologies. Both an Energy Storage RFO and Tolling Arrangement with Fixed Storage Payments are better alternatives to allow for adequate comparison among technologies and system needs for storage procurement.

2. 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.

TAS Energy recommends against offering an 'off ramp' due to "the lack of a competitive number of bids in the energy storage auction, or other showing." (p. 19) Speaking as a manufacturer of energy storage technology with costs less than new generation, preventing procurement of such cost effective energy storage technology that meets the need identified by an RFO or other procurement mechanism, simply because another technology has not yet

reached the same cost-effective level, so as to ensure “a competitive number of bids,” severely discourages manufacturers like ourselves from investing in the deployment of such technology in the California market. It is hard to imagine investing development efforts into a procurement process that upon finding there are no other “competitive bids,” the cost-effective technology is not chosen, and the procurement target not required to be met, at no fault of the cost effective and needed energy storage technology itself. The Commission should require the utilities to procure *any* cost effective storage technology that meets a stated need, regardless of the other number of competitive bids offered.

LOADING ORDER

TAS Energy encourages the Commission to clarify in this proceeding that energy storage is *implicit in* the loading order categories at the same level as energy efficiency and demand response when operating standalone and performing grid services, as energy storage is an effective resource to promote *overall system efficiency*. It is imperative to recognize the system wide efficiency and reliability provided to the grid inherent in energy storage resources. Because the Commission has determined that such services, efficiency and the ability for demand to respond to grid signals, are a valuable and necessary priority for grid operation, it is only appropriate for the same value to be given for the same or similar services offered by energy storage. In a market, all like-minded resources must be treated in the same way to ensure appropriate comparison and market value. If the Commission is silent on this issue, an opportunity for adequately and appropriately assigning value to energy storage will be lost. Intentionally addressing the value of energy storage on par with its sister resources of efficiency and demand response sends a consistent signal to the market of the values given for all resources providing services this Commission holds valuable and the California grid desires.

In the case of Generation Storage, the megawatts placed on the grid through the energy storage chilling system ought to receive the energy storage loading order level, as those stored megawatts are like all other beneficially stored megawatts in assisting the overall efficiency of the grid, and as a result of these procurement targets, will be likely procured in order to service an IOUs procurement target need. Of course, not all megawatts generated by the host gas turbine should be given such loading order value simply because an energy storage system exists onsite, only those megawatts generated as a direct result of the Generation Storage system. While we recognize the Commission cannot change the Loading Order independently, we encourage the Commission to state for the record that it intends to interpret the Loading Order, so far as its own jurisdiction is concerned, in a manner in which energy storage, demand response and energy efficiency are on the same level.

CONCLUSION

TAS Energy is grateful for this proceeding, for this Commission, and for the opportunity to offer comments based on our company's experience as an energy storage technology manufacturer with projects operating in markets outside of California. With a large population, a heavily gas fueled electricity profile, a focus on clean energy, and a warm climate, California seems immediately to be a top market for the deployment of our Generation Storage technology and is a market TAS Energy would ideally like to be more active in. Unfortunately, extreme market barriers exist in California today preventing the general deployment of this cost effective technology. We believe the Commission's proposal for energy storage procurement targets, along with the suggested changes offered in this document and the comments of the California Energy Storage Alliance, will clear the way for cost effective energy storage technology to join other resources in meeting California power needs resulting from the SONGS outage, Once Thru Cooling repowers, and future power demands from the people and businesses of California. We

thank you for your work and look forward to continuing to comment as this proceeding continues.

Respectfully submitted,

A handwritten signature in cursive script that reads "Kelsey W. Southerland".

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Date: July 3, 2013