

**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 Nevada Hydro Company
on
Assigned Commissioner's Ruling Proposing
Storage Procurement Targets and Mechanisms**

David Kates
The Nevada Hydro Company
3510 Unocal Place
Suite 200
Santa Rosa, CA 95403
(707) 570-1866

Dated this 3rd day of July, 2013

**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 Nevada Hydro Company
on
Assigned Commissioner’s Ruling Proposing
Storage Procurement Targets and Mechanisms**

Pursuant to Rule 6.2 of the Rules of Practice and Procedure of the Public Utilities Commission of the State of California (“Commission”), the Nevada Hydro Company, Inc. (“Nevada Hydro”), provides herein its comments to issues raised in the “Assigned Commissioner’s Ruling Proposing Storage Procurement Targets and Mechanisms” (“ACR”) issued on June 10, 2013. The ACR advised that comments would be due by July 3, 2013.

1. Background

In a previous filing in this proceeding¹ submitted in response to the Commission’s Order Instituting Rulemaking², Nevada Hydro identified some of the benefits of its Talega–Escondido/Valley–Serrano 500 kV Interconnect (“TE/VS Interconnect”) and Lake Elsinore Advanced Pumped Storage (“LEAPS”) projects. Nevada Hydro noted that the Federal Energy Regulatory Commission (“FERC”) is

¹/ Comments of The Nevada Hydro Company, January 20, 2011.

²/ Order Instituting Rulemaking Pursuant to Assembly Bill 2514 to Consider the Adoption of Procurement Targets for Viable and Cost-Effective Energy Storage Systems, December 16, 2010.

responsible for licensing the 500 MW LEAPS facility (Project Number P-14227), and that the TE/VS Interconnect appeared before this Commission in Application 10-07-001, before it was dismissed without prejudice last year. Nevada Hydro is now moving to complete necessary tasks to refile its application for a Certificate of Public Convenience and Necessity (“CPCN”) for the identical project.

In its comments on the OIR, Nevada Hydro noted that its ability to construct and operate LEAPS may be dependent on the findings, policies and conclusions of this proceeding. Consequently, Nevada Hydro has a particular interest in assuring that the Commission properly understands the costs, value and benefits of advanced pumped storage facilities like LEAPS, and for that reason, Nevada Hydro filed as an active party in this proceeding.

In addition to describing its projects in its comments on the OIR, Nevada Hydro also explained its permitting status and the wide range of capabilities (in addition to the storage of energy) that the LEAPS project can provide to the grid.

2. Summary of Comments on the ACR

Nevada Hydro appreciates the excellent effort that the Commission has put into the ACR, which includes many useful concepts. Nevada Hydro believes, however, that some of these concepts need to be clarified or modified to achieve the optimum solution in light of California's policies in favor of renewable energy and dramatic reductions of greenhouse gases, while it remains attentive to reliability concerns, particularly in light of the shuttering of the San Onofre Nuclear Facility (“SONGS”) in southern California.

Since passage of AB 2514³, Nevada Hydro has followed the State’s progress in implementing this landmark legislation, as Nevada Hydro was hopeful that with this directive from the Legislature, the Commission would chart a path for all types of storage, and particularly, large, grid connected storage facilities like LEAPS. Nevada Hydro was surprised and disappointed, therefore, to see that the Commission has excluded from consideration for inclusion in the proposed Energy Storage

³ / Codified at Pub. Util. Code § 2835 *et seq.*

Procurement Targets⁴ the most efficient form of storage, namely, pumped hydro storage. In the ACR, the Commission notes that, “All third-party owned energy storage resources as defined by law, except for pumped hydrological resources, would be eligible to bid into the energy storage reverse auctions.” [Emphasis added.]⁵ Particularly as AB 2514 places no such limitation on pumped storage, Nevada Hydro sees no basis for Commission’s apparent choice to utilize this proceeding to encourage development of markets for smaller and less proven distribution and customer side technologies while excluding pumped storage.

Given that pumped storage can provide all of the benefits of storage that AB 2514 envisions and the Commission has identified, at far lower cost than can other storage technologies, Nevada Hydro urges the Commission to chart a path for grid-connected pumped storage as well.

3. Specific Comments on the ACR

3.1. Proposed procurement targets should be focused on distribution and customer-side applications, excluding large, grid connected storage

Nevada Hydro respectfully suggests that the proposed energy storage procurement target of 1,325 MW by 2020 for the three major IOUs should be focused on distribution and customer-side applications. Grid-scale storage facilities need to be sized at several hundred megawatts or larger to be cost-effective and to meet the needs for integrating large-scale renewable energy projects, such as 1,000 MW wind farms and 750 MW solar projects. The proposed targets simply will not accommodate such larger storage projects.

Moreover, it is likely that between now and the early 2020's, California will need several thousand megawatts of new flexible capacity to accommodate all the new renewable resources that will be coming on line. Most of that new flexible capacity should be in the form of large-scale storage. Unless the Commission states, now, an affirmative preference for storage, a significant percentage of this new "flexible capacity" is likely to be gas-fired, which would be a tragedy for California's

⁴ Ruling at p. 8.

⁵ / Ruling at p.17.

environment and its ratepayers, especially when gas prices go higher, which they certainly will.

The Commission's ultimate decision in this proceeding should accordingly recognize that there is likely to be a significant need for large-scale storage on the transmission side of the grid, in addition to the 1,325 MW that will be the subject of the proposed Energy Storage Procurement Targets. In fact, several commenters at the June 25, 2013 workshop that was noticed in the ACR pointed out that California is likely to need several thousand additional megawatts of large-scale storage, in addition to the 1,325 MW recommended in the ACR, in the timeframe contemplated in the ACR (*i.e.*, by 2020).

3.2. AB 2514 requires that the Commission chart a path forward for pumped storage, and not simply ignore its capabilities

These considerations strongly suggest that the Commission needs to clearly spell out an alternative path forward for the large grid-scale storage projects, especially projects relying on "pumped hydrological resources," that are likely to be needed in the future (both to help integrate large amounts of new grid-scale renewable generation, but also to help meet the state's aggressive GHG goals by substituting for the development of new so-called "flexible" gas-fired resources).

The Commission may choose, for its own policy reasons, to exclude such large projects from the proposed Procurement Targets set forth in the ACR, apparently to facilitate the commercial development of smaller scale, dispersed storage technologies. However, AB 2514 requires that the Commission must, at the same time, clearly delineate how it will consider the large grid-scale projects.

The need for such a path forward is justified by the fact that the costs of pumped hydro are half the costs of the advanced battery technologies that the ACR seems to be focused on helping. Indeed, given the uncertainties in gas pricing and the ultimate price of GHG emissions from gas-fired facilities, the all-in costs of pumped storage facilities discounted to present value are already competitive with the price of "flexible" gas-fired facilities, and, in the future, when gas prices rise, as they inevitably will, the price of pumped storage at today's estimated costs, will

appear to be a bargain, and ratepayers will be understandably very unhappy that the Commission chose to let the utilities build gas-fired, rather than storage facilities to facilitate the integration of renewable generating resources.

For the Commission to fail to set forth such a clear path forward in its ultimate decision in this proceeding would do a disservice not only ratepayers, but also, more importantly, such a failure would set back the Legislature's main purposes in advocating policies to address energy storage, namely, to facilitate the integration of increasing amounts of renewable generation and to achieve the state's policies to reduce greenhouse gas emissions to 80 percent below 1990 levels by 2050.⁶

If the Commission is loath to address large grid connected pumped storage through its jurisdictional mandate, perhaps it could encourage the CAISO to consider acquiring or contracting for services from pumped hydro storage and including it in its transmission rates as an alternative to "must run" fossil fuel power plants. The CAISO may be in the best position procure storage at strategic locations, like that of LEAPS, to serve region-wide transmission reliability purposes. This recommendation from the Commission could allow for joint deliberation and decision by the CAISO and the Commission.

Although it appears to be a mature technology, pumped hydro is subject to many of the same challenges (in terms of lacking an appropriate regulatory framework and an established cost-effectiveness evaluation methodology) as the smaller-scale emerging technologies that the ACR seeks to assist⁷. Accordingly, any proposed decision based on the ACR needs to spell out a clear path for the Commission to follow in approving large, grid-scale transmission system-interconnected storage facilities, especially pumped hydro. In fact, Nevada Hydro is prepared to offer up its LEAPS facility for specific evaluation by the Commission (and the CAISO), perhaps through the filing of an application for a Certificate of Public Convenience and Necessity with the Commission.

⁶ See, Ruling at p. 6.

⁷ Other than the new Olivenhain-Hodges 40 MW pumped storage project in southern California, which was part of a larger water supply project, the last major pumped-storage project to become operational in the U.S. was Olgethorpe Power's Rocky Mountain Hydroelectric Plant that went online in 1995. All of the other pumped hydro facilities in the state have been operating for more than roughly 30 years.

For all the foregoing reasons, any new, large-scale pumped storage facilities that are proposed over the next several years, should be excluded from the 1,325 MW procurement targets, and in the proposed decision that will follow upon the ACR, the utilities should be encouraged to explore the feasibility of, and to invest in, such large-scale pumped storage sooner rather than later. Furthermore, in that decision, the utilities should be actively encouraged to propose Commission approval of their investment in, or procurement of, large-scale transmission-system interconnected storage facilities on a project-specific basis.

3.3. The Reverse Auction Mechanism structure is problematic

Nevada Hydro also believes that the proposal to evaluate Third-Party-Owned energy storage through a Reverse Auction Mechanism (“RAM”) is problematic for a number of reasons:

- First, if implemented, such a RAM should explicitly only apply to small-scale, distribution-system-interconnected projects.
- Second, given the remaining methodological uncertainties about the comparative evaluation of storage projects, as compared to traditional generation projects, as well as the different range of benefits that different storage technologies provide (flywheels and hydro pumped storage couldn't be more different from each other), it is unclear that a RAM would either be fair or would result in an optimal outcome.
- And third, since storage facilities will be essential to the reliable operation of the electric grid, it is questionable whether third parties should own and operate even smaller scale storage facilities that would be interconnected to the distribution system. As the IOUs are entirely responsible for the operation of their distribution systems, it could be problematic for third parties to have their hands on that particular tiller. It may therefore be best for the incumbent utilities to own and operate all storage (other than customer-owned, behind the meter facilities) that is located on the distribution system. On the transmission grid, however, since the CAISO

operates the system, there is no technical obstacle to third party ownership of storage facilities.

3.4. Storage should be a priority in the loading order

Finally, the ACR explicitly recognizes that energy storage will become an increasingly critical element of the grid, especially as GHG constraints become stricter. Accordingly, the Commission should work with the CEC to include storage, along with renewables, as a priority in the loading order as soon as possible.

4. Conclusion

Nevada Hydro believes that renewable resources, integrated by appropriately sited energy storage, can provide both operational and reliability benefits, meeting all of the system needs of the evolving greener grid. This includes the critical reliability needs that had been met in the past by the now shuttered SONGS facility. Nevada Hydro looks forward to continuing down this path with the Commission to a greener and more reliable future.

/s/ David Kates
David Kates
David Mark & Company, LLC
3510 Unocal Place, Suite 200
Santa Rosa, CA 95403
(707) 570-1866

For The Nevada Hydro Company

Dated this 3rd day of July, 2013