

BEFORE THE CALIFORNIA ENERGY COMMISSION

**In the matter of:
Developing Regulations and Guidelines for
the 33 Percent Renewables Portfolio
Standard**

Docket No. 11-RPS-01

California Energy Commission

DOCKETED

11-RPS-01

TN 72662

JAN 14 2014

**COMMENTS OF REDDING ELECTRIC UTILITY
ON THE SCOPE OF FUTURE EDITIONS OF THE RENEWABLES PORTFOLIO
STANDARD ELIGIBILITY GUIDEBOOK**

Pursuant to the direction set forth in the December 26, 2013 *Notice of Lead Commissioner Workshop to Scope a Future Edition of Renewables Portfolio Standard Eligibility Guidebook*, the Redding Electric Utility (Redding) offers the following comments to the California Energy Commission (CEC or Commission) in response to the questions set forth in the Workshop Notice and to issues raised during the January 28, 2014 Workshop.¹

Redding is a publicly owned electric utility that has been serving the electricity needs of the City of Redding since 1921. Redding has a variety of renewable portfolio standard (RPS) program-eligible resources in its portfolio mix and is on track to meet the 33% RPS by 2020 goal. Redding sees energy storage as an important electricity management tool, and believes that energy storage should be more broadly employed as part of the State's RPS program. The City of Redding's Electric Utility (REU) appreciates the Commission's consideration of the role of energy storage in the context of the state's renewable portfolio standard program, and offers these comments on the ways in which energy storage can be utilized for the RPS program.

The Role of Energy Storage for RPS Should be Reviewed and Expanded

In these comments, Redding responds to the specific inquiries set forth in Attachment A of the Workshop Notice, and also addresses why energy storage should have a more definitive role in the State's renewable portfolio program. The current inquiries raised in the Workshop

¹ The City of Redding is a member of the Northern California Power Agency (NCPA) and the California Municipal Utilities Association (CMUA). Redding also supports the broader comments filed by both NCPA and CMUA in this docket.

Notice regarding the use of energy storage present a sound basis to begin these discussions, however, Redding believes that these inquiries do not go far enough in recognizing the important role that energy storage can have in the RPS program, nor do they fully recognize the ways in which entities such as Redding are already utilizing energy storage technologies.

Redding believes that the current discussion regarding energy storage and its role vis-à-vis the RPS program significantly discounts the renewable energy and greenhouse gas reducing potential that energy storage can contribute in the State's electric grid, and more specifically, towards effectively meeting California's RPS program. While the benefits of energy storage for load management and grid reliability are being explored in other venues across the state, in order to maximize the benefits of this important resource, it is imperative that the direct link between energy storage and RPS be recognized. Renewable resources – such as wind and solar - do not adequately address the need to reduce peak demand and their intermittent nature provides challenges to the reliability of the grid.

Expanding the role of energy storage in the RPS will allow not only for the expansion of energy storage technologies, but will also enable the state to maximize the usefulness and efficiency of the existing transmission system, allow for the time differentiated value of renewable energy to be recognized, and eventually, the potential reduction of RPS costs for California ratepayers.

Uses for Energy Storage

Redding has invested millions of dollars in energy storage systems located within the City. In addition to providing ancillary benefits to the City's residents by way of jobs creation, the devices are dispatchable by Redding when needed, and optimize the usage of renewable resources by allowing Redding to readily integrate renewable and traditional resources by calling on them when needed. Redding is seeking ways to maximize the operability and value of imported renewable energy. For example, Redding's wind energy from the Pacific Northwest has sizeable deliveries during both daytime and nighttime, yet the nighttime deliveries can create minimum load conditions and therefore may cause operational difficulties. To directly address this problem Redding has been installing Thermal Energy Storage (TES) systems at customer facilities.

The TES systems (using power) make ice at night, thus storing load for the wind based nighttime power deliveries mentioned above. The energy is captured or stored in the form of ice

to be used in the hot afternoon to cool customers' facilities, reducing system peak demand by 95%. During those peak afternoon hours power demand is lessened by using the ice and there is still plenty of demand to accommodate the daytime wind power deliveries.

Responses to Questions in Attachment A

Redding addresses the questions in Attachment A below, primarily in the context of its own energy storage programs. However, in reviewing stakeholder comments on this important issue, Redding urges the Commission to take the broadest possible interpretation into "requirements" associated with the use of energy storage for RPS purposes.

Question 1. Should energy storage facilities not directly connected to or metered as part of a renewable electrical generation facility be eligible for RPS certification? If so, how can the Energy Commission ensure that the output of the energy storage device is from a renewable electrical generation facility, and that no double counting of the renewable generation occurs?

Yes, energy storage facilities not directly connected to or metered as part of a renewable electrical generation facility should still be eligible for RPS certification. Accounting protocols can be developed and used to track power generated at renewable facilities to what energy is used by storage devices regardless of the location of the storage device. The energy storage would be considered a closed-loop system. Accordingly, if the origin of the resources that enter and exit the energy storage facility are known, it is possible to calculate the RPS percentage of that energy. For example, during a 12-month period, a utility may have base resources accounting for 70% of its load, renewable resources accounting for 20%, and 10% purchases from the market. If the energy storage system was used 25% of the time, it would account for 5% of the total load ($20\% \times 25\% = 5\%$). The existing RPS certification requirements and power scheduling protocols (i.e., tagging) already address the tracking concerns associated with this issue, and the total number of kWhs necessary to make ice (storage energy) in the TES devices is known. Therefore, developing a tracking mechanism to assess the renewable benefit of the energy storage device is relatively simple.

Question 2. Given the inherent energy losses in storing electricity, is there any benefit for utilities to procure renewable energy that has been stored in an energy storage device rather than directly procuring it from the renewable generator and allowing generic grid electricity to be stored? Explain. Do these benefits remain if delivery to the energy storage device requires firm transmission, or another

delivery arrangement similar to electrical generation facilities not interconnected to a California Balancing Authority to provide a Portfolio Content Category 1 product?

There will be energy losses with any type of storage device at any location because of the nature of the technology and its storage conversion ability. Systems such as those utilized by Redding are located at the customer facilities, which means there are no additional transmission requirements. Even if firm transmission requirements are necessary, this would not negate the benefits derived from these resources. The transmission requirements for the eligible renewable energy supplies are unaltered by integration with distribution level storage devices. Redding's wind based renewable energy supply meets all the current import requirements for qualifying as a Portfolio Content Category 1 product.

Question 3. Should energy storage devices be allowed to shift delivery times for Portfolio Content? Category 1 deliveries? Why or why not? If yes, explain how this could be verified.

Yes, energy storage devices should be allowed to shift delivery times. As noted above, the ability to shift delivery times is an essential benefit to energy storage. This feature will also be necessary to integrate high levels of renewable energy safely and reliably into California's increasingly complex power system. Verification protocols can be developed by making use of existing systems (e.g., WREGIS) and developing relatively simple operating reports based on existing TES computer based control and monitoring systems.

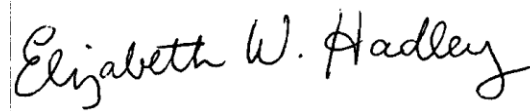
Conclusion

In order to meet the state's ambitious RPS objectives, energy storage should be more broadly encouraged and recognized for RPS compliance purposes. As Redding noted in prior filings before this Commission and during the January 28 Workshop, the utility appreciates the challenges associated with developing guidance on the RPS program, and the various technologies – both existing and emerging – that can be used to meet the standard. Developing the protocols may not be “easy,” but neither are they prohibitively complex. Furthermore, the fact that this may require additional review and investigation on the part of the Commission and stakeholders should not preclude the Commission from advancing this important objective. Redding believes that the best way to meet the challenges is to embrace, rather than restrict, the scope of available technologies that can be employed. Accordingly, the City of Redding's

Electric Utility urges the Commission to review energy storage for RPS purposes in the development of revisions to the RPS Eligibility Guidebook – either as part of an expanded review of the current RPS Eligibility Guidebook or as part of a new Commission rulemaking – and to look closely at the ways in which the renewable energy value of energy storage facilities located on-site or near customer load can be counted and recognized as part of the state’s RPS program.

Dated: February 18, 2014

Respectfully submitted,

A handwritten signature in black ink that reads "Elizabeth W. Hadley". The signature is written in a cursive style and is positioned to the right of a vertical line.

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