

**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

**OPENING COMMENTS OF PACIFIC GAS AND ELECTRIC COMPANY (U 39 E)
ON ENERGY STORAGE OIR**

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January 21, 2011

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Pursuant to the December 21, 2010 Order Instituting Rulemaking in the above-captioned proceeding (“Energy Storage OIR”), Pacific Gas and Electric Company (“PG&E”) submits its opening comments addressing the issues identified by the California Public Utilities Commission (“CPUC” or “Commission”) in the Energy Storage OIR, including the white paper issued by the Commission’s Policy and Planning Division (“Whitepaper”) attached to the Energy Storage OIR as Attachment A

PG&E supports the Commission’s desire to promote the development of viable and cost-effective energy storage systems and commends the Commission for recognizing the value of commencing this proceeding earlier than the deadline set forth in Assembly Bill (“AB”) 2514. PG&E generally agrees with the Commission’s stated objectives of this proceeding to: “(1) review, analyze and establish, if appropriate, opportunities for the development and deployment of energy storage technologies throughout California’s electricity system; (2) remove or lessen any barriers to such development and deployment; (3) review and weigh the associated costs and benefits of such development and deployment; and, (4) establish how those costs and benefits should be distributed.”^{1/} As is discussed more fully below, PG&E believes these objectives can

1/ Energy Storage OIR, p. 5.

most effectively be met if the Commission sets a clear roadmap to achieve them. PG&E also believes that the role of energy storage in a diversified portfolio of resources should be one of the many considerations in this proceeding.

I. COMMENTS

A. There is need for an analytical framework to properly account for all benefits and costs of storage

PG&E recommends the Commission provide parties guidance as to how they should present the benefits and costs of the storage alternatives at the workshop planned for the first quarter of 2011² so that they can be compared not only among themselves but with other alternatives available for integrating intermittent renewable resources. The Standard Practice Manual,³ which is used for evaluating demand side programs, provides a useful framework to identify costs and benefits from different viewpoints including: (1) society as a whole, including customers and utility (Societal Test and Total Resource Cost Test), (2) customers who choose to add storage (Participant Test), other customers who do not add storage (Ratepayer Impact Measure Test), and the utility (Utility or Program Administrator Test). Benefits included in the Societal Test and Total Resource Test include avoided supply costs representing reductions in revenue requirements for energy, capacity, and ancillary services, as well as transmission and distribution costs as appropriate. Costs considered in these two tests include all costs paid by both utility and participating customers plus the increase in supply costs for the periods in which load is increased, which for storage is the charging period. The Societal Test includes in addition externalities not considered in the Total Resource Cost Test. Use of the Standard Practice

² R. 10-12-007, p. 6.

³ The Standard Practice Manual can be found at:

<ftp://ftp.cpuc.ca.gov/puc/energy/electric/energy+efficiency/em+and+v/Std+Practice+Manual.doc>

Manual framework also ensures consistency with the analysis of benefits and costs of demand-side resources.

B. Even if storage is not cost-effective under current market conditions, there may be strategic reasons to pursue additional procurement of storage

Even if storage fails to be cost-effective, there may be strategic reasons why the Commission may decide to pursue additional storage. Some storage technologies take a long-time to develop, permit and build, and given the uncertainty of storage's future costs and benefits, it may be appropriate to fund development of prototypes or initial phases of projects that appear promising to the extent the cost of keeping the option alive is justified. For example, the Commission may want to consider funding promising emerging storage technologies. PG&E, therefore, recommends the scope of the proceeding include a Commission determination as to whether there are sufficient strategic reasons for supporting promising storage options that are not cost-effective today.

C. This rulemaking should proceed in parallel with concurrent energy storage-related applications

Applications to investigate the feasibility of energy storage systems, such as PG&E's application to recover pumped storage study costs, should be considered by the Commission in parallel to this rulemaking.⁴ This will enable the Commission to determine the feasibility of

⁴ AB 2514, § 2 (adding § 2836(a)(4) to the Public Utilities Code), states "Nothing in this section prohibits the commission's evaluation and approval of any application for funding or recovery of costs of any ongoing or new development, trialing, and testing of energy storage projects or technologies outside of the proceeding required by this chapter."

storage alternatives and to pursue the development of projects with significant lead time without losing time, once the extent of the need for energy storage solutions is more clearly identified.⁵

D. The scope of the Energy Storage OIR should include both clear objectives and a roadmap to achieve those objectives

PG&E urges the Commission to set not only clear objectives for the scope of this proceeding as it has done in initiating the Energy Storage OIR but also to provide a clear roadmap to achieve those objectives. PG&E makes the following specific recommendations for the scope and roadmap for the Energy Storage OIR:

First, this rulemaking should provide a comprehensive economic evaluation of the costs and benefits of various storage technologies using a methodology that is consistent with the Standard Practice Manual.

Second, as part of this rulemaking, the Commission should review and weigh the range of associated costs and benefits of developing and authorizing deployment and competitive procurement of different technologies.

Third, this rulemaking should recognize that energy storage is part of a portfolio of resources that should be used in a complementary manner to provide the “most environmentally-sound and cost-effective resources for procuring to the level of identified need.”⁶

Fourth, if the Commission chooses to proceed with procurement of storage, it should provide for competitive procurement, without choosing winners or losers.

⁵ AB 2514, § 1(b) articulates a clear need for the deployment of additional energy storage in the near term to “optimize the use of the significant additional amounts of . . . wind and solar energy that will be entering the California power mix *on an accelerated basis*.”(emphasis added).

⁶ R. 10-05-006, “Assigned Commissioner and Administrative Law Judge’s Joint Scoping Memo and Ruling,” dated 12/3/2010, p. 27.

Fifth, if the Commission chooses to proceed with procurement of storage, it should provide for appropriate cost recovery mechanisms. Cost-recovery determination will be informed by the examination of potential avoided generation, transmission or distribution costs, and who accrues those benefits.

Sixth, the Commission should determine whether there are sufficient strategic reasons for supporting promising storage options that are not cost-effective today.

Finally, the proceeding should prepare an objective assessment of the barriers, if any, that prevent the development of cost-effective or strategic storage projects; and if so, how to overcome them.

E. The Commission’s first priority is to evaluate the costs and benefits of available storage technologies from a societal view point

Economic evaluation will be useful to recognize which technologies are cost-effective or are ripe for procurement, even if they are not cost-effective today. The economic analysis should provide a range of costs and benefits for each technology to capture their respective cost and benefit uncertainties.

F. Benefits of storage technologies should be determined using the Standard Practice Manual’s analytical framework

The Whitepaper lists a number of benefits and costs of storage without much structure. As indicated before, the Standard Practice Manual provides a useful framework to identify costs and benefits. As explained below, economic and operational benefits identified in the Whitepaper are simply either utility or participating customer avoided costs⁷.

⁷ Whitepaper, pp. 5-8.

- Bill savings from shifting decrease participating customers' costs, and corresponding impact on non-participating customer costs.
- The reliability value of storage reduces utility resource adequacy (RA) capacity costs.
- Storage's production of ancillary service and energy sold in the market are utility's avoided ancillary service and energy costs.
- Potential reductions in storage costs as the market matures should be considered in the possible cost range of technologies considered in the analysis and not as a benefit.
- Employment and other economic growth if storage industry is located in California should be considered as a strategic benefit.
- Improved power quality is either a utility or a participating customer avoided cost.
- Reliable and cleaner back-up power is a utility avoided RA or flexible capacity cost.
- Reduced need for peak generation is a utility avoided RA capacity and energy cost.
- More efficient use of renewable and other off-peak generation is a utility avoided cost.
- Reduced need for transmission and distribution upgrades are utility avoided transmission and distribution costs.
- Transmission support and congestion relief are utility transmission and supply costs to the extent congestion results in power purchase savings.
- Increased and improved availability of ancillary services is utility supply avoided cost.
- Lower greenhouse gas and other emissions are utility's avoided externality costs.

G. Procedural matters

PG&E has no objection to the preliminary schedule set forth in the Energy Storage OIR and agrees with the Commission's designation of this proceeding as quasi-legislative as defined in Rule 1.3(d) of the Commission's Rules of Practice and Procedure. PG&E further agrees with the Commission's preliminary determination that hearings are likely not needed to resolve the issues presented in this proceeding.

II. CONCLUSION

PG&E looks forward enthusiastically to participating in this proceeding and supporting the important California energy policy goals that can be achieved through development of viable and comprehensive energy storage systems.

Respectfully submitted,

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Dated: January 21, 2011

**THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA
EMAIL SERVICE LIST**

Last Updated: January 20, 2011

CPUC DOCKET NO. R1012007

CERTIFICATE OF SERVICE BY ELECTRONIC MAIL OR U.S. MAIL

I, the undersigned, state that I am a citizen of the United States and am employed in the City and County of San Francisco; that I am over the age of eighteen (18) years and not a party to the within cause; and that my business address is Pacific Gas and Electric Company, Law Department B30A, 77 Beale Street, San Francisco, CA 94105.

I am readily familiar with the business practice of Pacific Gas and Electric Company for collection and processing of correspondence for mailing with the United States Postal Service. In the ordinary course of business, correspondence is deposited with the United States Postal Service the same day it is submitted for mailing.

On the 21st day of January, 2011, I caused to be served a true copy of:

**OPENING COMMENTS OF PACIFIC GAS AND ELECTRIC COMPANY (U 39 E)
ON ENERGY STORAGE OIR**

- [XX] By Electronic Mail – serving the enclosed via e-mail transmission to each of the parties listed on the official service list for [need to revise as necessaryR.10-05-006] with an e-mail address.
- [XX] By U.S. Mail – by placing the enclosed for collection and mailing, in the course of ordinary business practice, with other correspondence of Pacific Gas and Electric Company, enclosed in a sealed envelope, with postage fully prepaid, addressed to those parties listed on the official service list for [need to revise as necessary]R.10-05-006 without an e-mail address.

I certify and declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct.

Executed on this 21st day of January, 2011 at San Francisco, California.

/s/

SHARON E. MORTZ

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Last Updated: January 20, 2011

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