



**BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA**

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Application of Pacific Gas and Electric Company
for Authority to Increase Electric Rates and
Charges to Recover Smart Grid Costs Relating to
Compressed Air Energy Storage Demonstration
Project under American Recovery and
Reinvestment Act of 2009

U 39 E

A.09-09-019
(Filed September 29, 2009)

**STIPULATION OF
PACIFIC GAS AND ELECTRIC COMPANY AND
THE DIVISION OF RATEPAYER ADVOCATES
REGARDING THE RECORD AND ISSUES**

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Dated: December 1, 2009

Attorneys for
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OF THE STATE OF CALIFORNIA**

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Pursuant to the November 5, 2009, Scoping Memo, Pacific Gas and Electric Company (PG&E) hereby files the “Stipulation of Pacific Gas and the Division of Ratepayer Advocates Regarding the Record and Issues” (“Stipulation”) in this proceeding.^{1/} This Stipulation is filed jointly on behalf of both PG&E and DRA and is attached as Appendix A to this pleading.^{2/}

This Stipulation represents the joint position of PG&E and DRA regarding the record of the proceeding, issues to be resolved in the proceeding, and whether the Commission should approve PG&E’s application in this proceeding. PG&E and DRA jointly request that the matters resolved in the Stipulation be included in the Commission’s final decision on the application. PG&E and DRA agree that the case is now ready for a final decision in accordance with the procedural schedule established in the Scoping Memo. PG&E and DRA note that the Stipulation in Appendix A hereto

^{1/} The Scoping Memo set a due date of November 30, 2009 for this filing, but by email dated November 30, 2009, ALJ MacDonald granted the parties a one-day extension to file to December 1, 2009.

^{2/} DRA counsel has authorized PG&E to make this filing on DRA’s behalf.

contains information that the decision in this proceeding should address. In addition, DRA separately discusses one issue in Appendix A hereto that it believes the decision should address.

In addition to the Stipulation, PG&E also hereby notifies the Commission and interested parties that, on November 24, 2009, PG&E received notification from the U.S. Department of Energy (DOE) that its application for federal funding of its Smart Grid Compressed Air Energy Storage Demonstration Project has been approved. PG&E will provide further updates on the status of the DOE award for this project as we move forward.

Respectfully Submitted,
CHRISTOPHER J. WARNER

By: _____ /s/
CHRISTOPHER J. WARNER

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APPENDIX A

Appendix A

STIPULATION OF PACIFIC GAS AND ELECTRIC COMPANY AND THE DIVISION OF RATEPAYER ADVOCATES, COMPRESSED AIR ENERGY STORAGE PROJECT APPLICATION A.09-09-019

Pacific Gas and Electric Company (PG&E) and the Division of Ratepayer Advocates (DRA) stipulate as follows:

1. The record in this proceeding consists of PG&E's application, the pleadings of the parties, the prehearing conference transcript, and PG&E's data request responses to DRA.

2. PG&E and DRA agree that if PG&E files an application for Commission approval of a Certificate of Public Convenience or Necessity (CPCN) or power purchase agreement (PPA) for phases of the Compressed Air Energy Storage (CAES) project subsequent to Phase 1 as described in this application, the results and data from Phase 1 should be considered by the Commission and interested parties as part of the Commission's consideration of PG&E's request for approval of the subsequent phases and any other requests to the Commission that would commit ratepayer funds for the subsequent phases, such as Commission approval of the results of a Request for Offers. Therefore, DRA requests that at the conclusion of Phase 1 of the CAES project, PG&E be required to file a report on the outcome of Phase 1 activities. DRA asks that the Commission order PG&E to supplement its DOE Report to discuss the outcome of the Phase 1 activities, as described in DRA's Opening Brief filed November 13, 2009, if the DOE does not require such discussion, and serve the Report and supplements on the parties to this proceeding. DRA also requests that the Commission consider the results of Phase 1 prior to Commission authorization of subsequent phases. PG&E believes that

its reports to DOE on Phase 1 of the project will cover all the topics listed by DRA, but agrees that it will supplement its report to provide the additional information to DRA and other interested parties for consideration in connection with any application for Commission approval of subsequent phases of the project. DRA may also exercise its statutory right to discovery on the results of Phase 1 and the report summarizing those results, and PG&E commits to expedited responses to that discovery as part of Commission consideration of any such application for subsequent phases of the project. PG&E also agrees to meet informally with DRA at any time to discuss the Phase 1 report and results and obtain input on the scope and structure of subsequent phases of the project prior to filing any application at the Commission for approval of the subsequent phases. PG&E and DRA agree that this process for cooperation and consideration of Phase 1 information and results as part of any PG&E request for CPUC approval of subsequent phases should be included as a condition of the Commission's approval of PG&E's CAES application in this proceeding.

3. Subject to the conditions in paragraph 2 and resolution of the issues, prior to Phase 2 of the project, set forth in "Separate position of DRA on efficiency of CAES project" below, DRA does not object to approval of Phase 1 of PG&E's CAES Project, Application 09-09-019.

Separate position of DRA on efficiency of CAES project:

It is DRA's position that PG&E must show that the CAES project is cost-effective and efficient in order to receive ratepayer funding. PG&E may show cost-effectiveness and efficiency in one of two ways:

1. The project produces an economic benefit, because it moves energy from off-

peak to peak hours, taking advantage of the difference between peak and off peak electricity prices; and/or

2. The project produces quantifiable environmental benefits by alleviating the intermittency and increasing the contribution to system reliability of wind generation, thus allowing more of this generation to be integrated into the system.

PG&E has been responsive to DRA's inquiries about the proposed project, and its potential to provide benefits to ratepayers. However, because cost calculations depend on performance calculations (i.e. plant efficiency) which are buried in a proprietary model that is difficult to make transparent, DRA is not entirely convinced that the project meets either of the foregoing criteria. In fact, responses to DRA's data requests have indicated that the modeled performance of this project is based on preliminary estimates that need to be the subject of further analysis in Phase I, making it difficult to judge the benefit to ratepayers at this time.

For example, in discovery responses furnished by PG&E to DRA late on November 30, 2009, PG&E stated that its previously claimed "plant energy ratio" of 0.68 is based on a different project and represents the best-case for PG&E based on current data inputs. It is not clear from PG&E's responses if this figure is an input to, or a product of the model, but the revised estimate of "over .8" indicates the actual efficiency of the CAES system is lower, or less beneficial to ratepayers:

Q. PG&E's response to DRA Data Request #1 included "Attachment B, PG&E Advanced CAES Plant and Thermodynamic Parameter Analysis," which stated that the project would have a "heat rate of 3,839 Btu/kWh and a plant energy ratio of 0.68 kWh-in for every kWh-out." Using the parameters specified in that Attachment, DRA calculates an Energy Ratio of 0.848. What is the actual Energy Ratio?

A. PG&E agrees that the 0.68 Energy Ratio cited does not occur using the conditions specified in Attachment B. The attached graph entitled "Design Optimization CAES Plant Concept" from Energy Storage & Power (the owner of the patents on second generation CAES) shows the relationship between Heat Rate, Energy Ratio, Air Flow, and MW Output for a representative plant (in this case, a nominal 400-MW plant). In the example shown, Energy Ratio can range between 0.7 and 0.88 and Heat Rate can range between 3,520 and 3,775 Btu/kWh. While the design specified by PG&E will be capable of an Energy Ratio of 0.68, it will not occur at the conditions specified (mass flow, Heat Rate, and MW). At the conditions specified, the Energy Ratio is over 0.8. PG&E has not made sufficient modeling runs to define all the points on the curves identified in the sample optimization attached. Phase I of the project will include the full range of modeling necessary to identify all points on the Design Optimization graph. (Emphasis added.)

While DRA acknowledges that determining the in-situ performance and cost-effectiveness of CAES is the ultimate goal of this project, we also believe ratepayer funds should only be expended once PG&E has demonstrated that the project is conceptually viable under reasonably probable physical and economic conditions. Therefore, although PG&E does not agree that the cost calculations are relevant or available, given that PG&E has not conducted Phase 1 in which such information would be developed, DRA and PG&E agree that the Commission should require PG&E to furnish the following additional information before examining the merits of Phase 2 of the CAES project: An analysis of how the project is impacted by a reasonable range of plant performance, project costs, discount rate, greenhouse gas prices, natural gas prices, sources of energy used to power the compressors, and sources of energy and capacity displaced by the proposed CAES project. Additionally, DRA recommends that the Commission require PG&E to submit said additional information prior to engaging in contracts of final design which implicitly commit ratepayer funding to subsequent phases. At a minimum, PG&E should calculate the cost-effectiveness for a best-case

and worst-case combination of input variables. Once PG&E furnishes this data, DRA (and other parties) should have 60 days for review and comment.

CERTIFICATE OF SERVICE

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 77 Beale Street, San Francisco, California 94105

On December 1, 2009, I served a true copy of:

**STIPULATION OF PACIFIC GAS AND ELECTRIC COMPANY AND THE
DIVISION OF RATEPAYER ADVOCATES REGARDING THE RECORD AND
ISSUES**

- [XX] By Electronic Mail – serving the enclosed via e-mail transmission to each of the parties listed on the official service list for A.09-09-019 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 A.09-09-019 without an e-mail address and the following parties:

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 1st day of December, 2009, at San Francisco, California.

/s/
MARTIE L. WAY

**THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA
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Last Updated: November 6, 2009

CPUC DOCKET NO. A0909019

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