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California Energy Commission
Docket Office, MS-4
1516 Ninth Street
Sacramento, CA 95814

Re: Docket No. 08-WHCE-1

Docket Office:

Please find attached PG&E's comments on the workshop held April 13, 2009, regarding "Combined Heat and Power Technical Guidelines".

Please contact me should you have any questions.

Sincerely,

Attachment

PACIFIC GAS AND ELECTRIC COMPANY COMMENTS IN RESPONSE TO THE APRIL 13, 2009 ELECTRICITY AND NATURAL GAS WORKSHOP ON COMBINED HEAT AND POWER GUIDELINES

Docket No. 08-WHCE-1

Pacific Gas and Electric Company (PG&E) is pleased to provide these comments in response to the California Energy Commission's (CEC) Electricity and Natural Gas Workshop on Combined Heat and Power (CHP) guidelines, and appreciate the staff's hard work and willingness to work with all stakeholders in developing proposals for efficiency standards for CHP installations.

Overview

PG&E continues to support the energy resource loading order for California; decreasing energy demand by increasing energy efficiency and demand response efforts, meeting new generation needs first with renewables and distributed generation, and finally clean fossil-fueled generation. PG&E also supports the goals of AB 1613, namely to set CHP system requirements that reduce instances of under-utilized waste heat for electricity generation while simultaneously reducing GHG emissions. These statewide policies, as mandated in the statute,[1] ought to assist in promoting efficient, cost-effective, technologically feasible, and environmentally beneficial use of waste heat from any CHP system supported under the program. In keeping with these positions, as well as the underlying principles outlined in the AB 32 Scoping Plan, PG&E supports CHP installations that lead to statewide GHG emissions reductions.

Furthermore, in order to achieve the overall goals of AB 1613, PG&E recognizes several objectives that need to be realized:

- Ensure that new CHP units are properly sized and efficient for the intended application.
- Monitor, validate, and enforce the program requirements to ensure that applications achieve the intended GHG reductions enabled by its design elements.
- Continue to streamline the interconnection process to facilitate CHP installations.

PG&E offers the following perspectives for the CEC to consider as it works through developing efficiency guidelines for CHP:

Efficiency Standard

In general, PG&E supports the direction the CEC indicates that it will take to develop the efficiency standard required by AB 1613. PG&E agrees with efficiency requirements as stated in AB 1613; supports the 60% minimum system efficiency where it results in GHG emissions reductions; and believes there should be the requirement that installations be environmentally beneficial. PG&E believes the AB 1613 standards adopted by the CEC should include some minimum standard to ensure actual GHG emissions reductions from new CHP.

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[1] http://www.leginfo.ca.gov/pub/07-08/bill/asm/ab_1601-1650/ab_1613_bill_20071014_chaptered.html

With respect to the environmental impact of new CHP, the CEC should address broader policy concerns such as efficiency of CHP versus that of the alternatives for steam and electricity usage. For electricity usage, the alternative is a new combined cycle, some combination of carbon and non-carbon baseload, or intermittent resources -- not an old steam unit. The electrical efficiency of small CHP units, especially those under 1 MW, is typically under 40% and, unless the thermal efficiency and the operation of those facilities meet promised results, new CHP may result in increases rather than reductions in GHG emissions.

PG&E supports a three-step approach to ensure that the AB 1613 standard ultimately adopted by the CEC assures GHG emissions reductions. In addition, PG&E's approach accounts for the fact larger generators achieve efficiencies at lower cost per kWh. Therefore PG&E would support a higher efficiency standard for larger generators. PG&E's three-step approach is:

- Recognize that all true bottom-cycling generators contribute to GHG emissions reductions. A bottom-cycle CHP installation produces heat for a process and uses waste heat to produce electricity. The waste heat has no incremental emissions and would simply be vented if the bottom-cycle generator were not installed. Therefore, electricity from bottom cycling is produced without incremental fuel use and thus has the same GHG impact as any non-emitting resource. PG&E believes that the statute as written might not accommodate bottom cycling CHP, and PG&E would support a definition that includes an efficiency standard and enables participation in the AB 1613 feed-in tariff (FIT) by true bottom-cycling CHP, of any size up to 20 MW.

- Topping cycle CHP all must meet the 60% minimum efficiency and include some assurance that it is "sized to thermal load" and in fact meets that thermal load to which it is sized. In addition, topping cycle must be able to demonstrate that GHG emissions will not be increased, at least on a statewide basis. These minimum standards are necessary to ensure that GHG emissions are at least not increased as a result of a new CHP installation.

- Larger installations can achieve higher generator efficiencies at a lower cost per MW. PG&E suggests the CEC consider setting higher efficiency standards for larger CHP installations. This would ensure that larger installations are able to contribute significantly to the reduction of GHG in California. PG&E suggests minimum efficiency requirements for installations between 0 and 1 MW, higher efficiency requirements for installations from 1 MW up to 5 MW, and higher still efficiencies required for installations from 5 MW to 20 MW.

Energy Efficiency Audit Pre-Installation

PG&E proposes implementation of an Integrated Energy Audit Program concept, broken down by installation size categories for customer sites planning installation of CHP systems. Integrated energy audits provide analysis of how CHP in customer facilities could be optimally integrated with energy efficiency, improved thermal efficiency, load management and demand response for peak demand reduction, annual energy savings, source fuel savings, water and waste reduction, lower GHG and NOx emissions, higher reliability and lower lifecycle costs. Integrated energy audits may help to address traditional barriers to implementation, such as first cost of installation, by providing clear technical and economical analysis, and benefits for integrated approach to energy management at customer facility. Energy audit recommendations should present the most cost-effective order for implementation and, accordingly, clearly identify the most beneficial sizing and economics of the CHP system.

Aggregated Statewide Impacts and PG&E Portfolio Impacts of Increased CHP Deployment

Generally, CHP resources are not dispatchable, and depending on the penetration of CHP and other preferred resource additions, increased deployment of CHP may result in over-generation conditions and situations where the grid does not have sufficient flexible resources to meet its operating requirements for regulation, load following and ramping requirements. PG&E procures resources to meet its customer electricity needs based on a long-term procurement plan approved by the CPUC. Based on this plan, PG&E expects to meet a portion of its anticipated demand growth through energy efficiency and customer-owned solar resources. PG&E also relies on environmentally friendly resources such as demand response and renewable generation. Most of these new resources, from an energy perspective, are non-dispatchable and a good portion of the renewable additions are intermittent resources and require additional integration resources. The CEC and the CPUC will need to carefully monitor and review the impact of new CHP on both a statewide basis and a utility-specific basis to ensure that new CHP does not detrimentally impact the reliability of the grid.

Again, PG&E wishes to thank the CEC and staff for their hard work on these guidelines, and will look forward to working towards developing technical guidelines for CHP that reduce GHG's in California.