Pacific Gas and Electric Company

Mark Krausse
Director
State Agency Relations

1415 L Street, Suite 280
Sacramento, CA 95814
(916) 386-5709
Fax: (916) 386-5720
MCKD@pge.com

October 26, 2009

Electronic Delivery

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

Re: Docket No. 08-WHCE-1

Docket Office:

Please find attached PG&E's comments on the Combined Heat and Power Technical Guidelines workshop, held October 12, 2009. Please contact me should you have any questions.

Sincerely,

Attachment

PG&E Comments on California Energy Commission Staff Draft Guidelines for Certification of Combined Heat and Power Systems Pursuant to the Waste Heat and Carbon Emissions Reduction Act, Public Utilities Code, Section 2480, *et seq.*
Docket No. 08-WHCE-1

I. Overview

Pacific Gas and Electric Company (PG&E) welcomes the opportunity to submit our written responses to the Electricity and Natural Gas Committee workshop on Combined Heat and Power (CHP) Guidelines. The critical public policy question facing the California Energy Commission (CEC) in developing CHP efficiency guidelines is determining whether the goal of the efficiency standard is to simply match the GHG characteristics of the "default" (separate production of electric and thermal energy) or to ensure that every facility that obtains an AB 1613 contract reduces California emissions of Greenhouse Gases (GHGs). To support the AB32 objective of reducing GHG emissions, PG&E strongly encourages the CEC to adopt an efficiency standard that not only identifies a GHG neutral benchmark for CHP efficiency, but also sets a standard requiring installation to reduce GHG emissions a minimum percentage beyond the GHG neutral line.

PG&E has the following recommendations for a simple guideline for CHP certification:

- **CHP Efficiency Benchmark - The carbon neutral benchmark should be set at a double-benchmark of 7,210 BTU/kWh measured in HHV (which includes 3% T&D losses) and an 80% efficient boiler.**

- **CHP Efficiency Standard - CHP facilities that interconnect at lines below 60kV should only need to have 5% fewer GHG emissions per MWh of energy output than the fuel-saving standard; CHP units interconnecting above this 60 kV threshold would need to have 10% fewer GHG emissions per MWh of energy output.**

This recommendation simplifies the multiple formulae in the draft guidelines while providing a size differentiated standard, as requested by staff.

II. "Double Benchmark" and Fuel Saving Standard

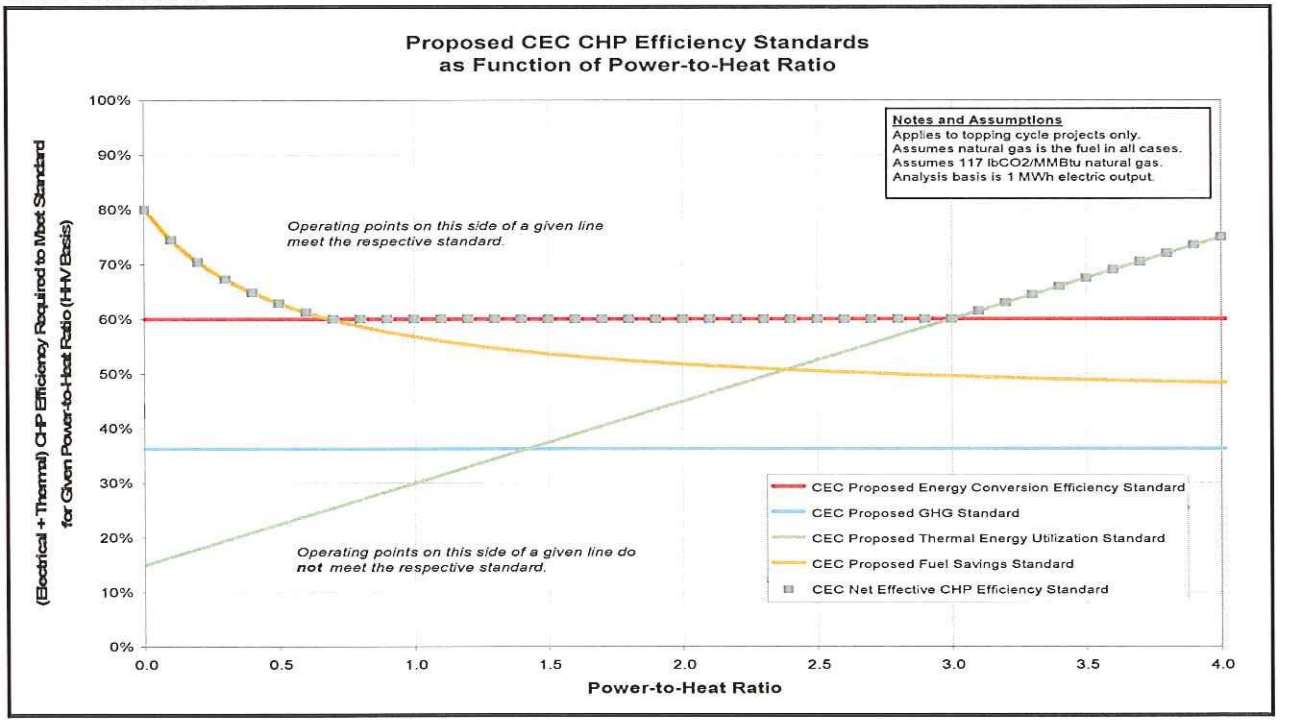
As recognized by the CEC's proposed Fuel Savings Standard, the appropriate metric for measuring GHG savings from CHP is to compare GHG emissions from each CHP facility with the amount of GHG that would have been emitted had the same thermal and electric output been produced separately by an onsite boiler and a utility, respectively. PG&E strongly supports the logic underlying the Fuel Savings Standard but believes that CHP displaces grid provided electricity that is generated at a heat of 7,210 Btu/kWh (HHV) (including transmission and distribution losses) and that this value should be assumed when calculating the Fuel Savings Standard.

PG&E derived this figure by increasing the typical 7,000 Btu/kWh heat rate for centralized electricity generation by 3%, to account for net transmission and distribution (T&D) losses associated with serving a CHP facility's onsite electric load.

Increasing the heat rate by 3% is a simplified proposal to estimate the difference between line losses that would result from centralized electricity generation, estimated to be 6.95%[1], and the line losses from CHP exports to the grid, estimated to be 4%. Rather than tracking at site usage and exports separately, PG&E recommends that the CEC simply increases the SHP heat rate to account for the difference in line losses between at site usage and exports of electricity. Incorporating the 3% loss to the 7,000 Btu/kWh heat rate of Separate Heat and Power (SHP), the heat rate to be used for the Fuel Savings Standard should be 7,210 Btu/kWh. PG&E would welcome the opportunity to work with CEC Staff to provide the model and calculations used to derive these numbers.

III. Simplification of the CEC Proposed Standard

As explained at the October 12th workshop, PG&E believes the CEC's proposed CHP standard can be simplified. The four independent steps in the proposed standard may be simplified by mandating CHP facilities—depending on their interconnection point—to emit 5% or 10% less GHG per MWh of energy output compared to GHG emissions from the separate production of heat and power. At the workshop, PG&E presented the following slide which combines the four CEC standards to show the combined effect. The gray dotted line shows the effective draft standard:



[1] Methodology and Forecast of Long Term Avoided Costs for the Evaluation of California Energy Efficiency Programs, Energy and Environmental Economics, Inc., October 25, 2004. (page 66)

Most of the time, the combined CEC Proposed Standard is driven by either the Proposed Fuel Savings Standard or the Proposed Energy Efficiency Standard. The Proposed GHG Standard is at all times below the combined line and can be eliminated through implementing the Double Benchmark. The Proposed Thermal Utilization Standard can also be eliminated because it only drives the combined standard at power-to-heat ratios that are not contemplated by AB 1613.

To simplify the various tests, the Double Benchmark Standard may be combined with the Proposed Fuel Savings Standard. PG&E's Double Benchmark will demonstrate the carbon neutral boundary, and AB 1613 mandates the inclusion of the Fuel Efficiency Standard.

IV. PG&E Proposal to Achieve GHG Emissions Reductions

In order to ensure that CHP provides the envisioned GHG emissions reductions and justifies the cost-shifting incentive payment, CHP units must emit fewer GHG emissions per MWh of energy output than the fuel-saving standard/ carbon neutral double benchmark discussed above. PG&E had supported a size-differentiated standard, recognizing that larger installations are better able to reach greater efficiencies and deliver GHG emissions reductions. In order to simplify compliance and regulation, and in response to feedback at the workshop, PG&E has modified our proposal to base the criterion on the line voltage at the interconnection point, rather than basing the criterion on the installed CHP capacity. This proposal essentially achieves the same goal as a capacity distinction (smaller generators are more likely to be interconnected at distribution level, while larger generators at the transmission level), while being administratively simpler.

PG&E proposes that CHP facilities that interconnect at lines below 60kV should have 5% fewer GHG emissions per MWh of energy output than the CEC's fuel-saving standard; CHP units interconnecting above this 60 kV threshold should have 10% fewer GHG emissions per MWh of energy output than the CEC's fuel-saving standard.

V. Certification and Reporting Requirements

In order to ensure that the facility emissions are calculated accurately for measurement against the Fuel Saving Standard, or Double Benchmark, it is crucial that all calculations be based on used thermal output, rather than useful thermal output. One of the primary purposes established by the Legislature for AB 1613 was to reduce GHG emissions in California through recovery and use of heat that would otherwise be wasted.[2] If the certification and reporting processes rely on useful output to determine compliance, rather than used thermal output, CHP facilities participating in the AB 1613 program potentially could increase California GHG emissions.

---

2 PUC Section 2840.4 and 2840.6(b).

To rectify this, calculations in Attachment A should be based on expected used thermal output. This will align the CHP emissions calculations with the SB 1368 Emissions Performance Standard, where the PUC and CEC specifically instructed parties to calculate emissions based on "actual, expected operations of the plant," rather than emissions at the full load heat rate.[3] The CEC should modify the Application, including in Schedule PF, to reflect actual, expected used thermal output to have the Guidelines reflect the decisions made in the Emissions Performance Standard and ensure the GHG emissions reductions are being calculated accurately. Calculations in the Annual Report should be based on accurately measured used thermal output.

PG&E has several additional recommendations on certification and reporting requirements:

- The Guidelines suggests that utilities will only have access to the Application after the facility is certified, but will only have 30 days after certification to appeal. This amount of time is not sufficient to allow utilities to review Applications to ensure that other customers are held indifferent. PG&E requests at least 60 days after we receive the Application to appeal or that we receive a copy of the Application at the same time it is submitted to the CEC.

- Utilities should receive copies of the Annual Report when it is submitted to the CEC, especially as staff indicates that the CEC will only review technical performance compliance if someone challenges the CHP facility. This makes timely utility review of the Annual Reports critical.

- Engineering design documents of the CHP system required in Schedule A, PF, and Annual Schedule A should be reviewed by a Professional Engineer.

- The Guidelines only require that the Monitoring and Data Collection Protocol be submitted in the first Annual filing. This should be modified such that, in the annual submittal, CHP facilities should attest that they are monitoring and collecting data via the submitted protocol and document any variances or updates.

Finally, the CEC should consider taking advantage of CARB reporting requirements, rather than instituting a possibly duplicate regulation The CARB reporting requirements may need to be modified to capture all of the necessary information to enforce the Guidelines.

VI. Conclusion

Again, PG&E lauds the CEC for its diligent efforts to develop guidelines that define clean and efficient CHP that supports CARB's GHG reductions goal. PG&E's primary recommendations are:

---

3 Decision 07-01-039 January 25, 2007 P. 179

- The fuel savings standard is the carbon neutral double-benchmark of 7,210 BTU/kWh measured in HHV (which includes 3% T&D losses) and an 80% efficient boiler.

- Replacement of the four standards in the guidelines with one: CHP facilities that interconnect at lines below 60kV should emit 5% less GHG per MWh of energy output than the fuel-saving standard; CHP units interconnecting above this 60 kV threshold should emit 10% less GHG per MWh of energy output.

- Calculations in the Application should reflect actual, expected used thermal output. Calculations in the Annual Report should be based on accurately measured used thermal output.

PG&E looks forward to further collaboration with Staff and Commissioners on implementing AB1613.