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**BEFORE THE CALIFORNIA ENERGY COMMISSION
OF THE STATE OF CALIFORNIA**

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In the Matter of:

The Preparation of the 2009 Integrated
Energy Policy Report

Docket 09-IEP-1H

**COMMENTS OF THE ENERGY PRODUCERS AND USERS COALITION,
THE COGENERATION ASSOCIATION OF CALIFORNIA
AND THE CALIFORNIA COGENERATION COUNCIL**

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I. INTRODUCTION

The Energy Producers and Users Coalition,¹ the Cogeneration Association of California² and the California Cogeneration Council (CHP Generators) appreciate the opportunity to provide these comments in the development of the Commission's latest Integrated Energy Plan Report (IEPR). The Commission's efforts to update the outlook for combined heat and power generation (CHP) are timely as California contemplates the development of a state-administered program.

The CHP Generators support the comments of the Western States Petroleum Association (WSPA) offered during the July 23, 2009 informational

¹ EPUC is an ad hoc group representing the electric end use and customer generation interests of the following companies: Aera Energy LLC, BP West Coast Products LLC, Chevron U.S.A. Inc., ConocoPhillips Company, ExxonMobil Power and Gas Services Inc., Shell Oil Products US, THUMS Long Beach Company, and Occidental Elk Hills, Inc.

² CAC represents the combined heat and power generation and cogeneration operation interests of the following entities: Coalinga Cogeneration Company, Mid-Set Cogeneration Company, Kern River Cogeneration Company, Sycamore Cogeneration Company, Sargent Canyon Cogeneration Company, Salinas River Cogeneration Company, Midway Sunset Cogeneration Company and Watson Cogeneration Company.

workshop. CHP has delivered a range of benefits to California since the mid-1980s, and additional potential could augment those benefits. The initial draft CHP Market Assessment (Assessment), however, may not fully recognize the CHP potential or the benefits of additional CHP. Consequently, as WSPA recommended, the Assessment would benefit from the modification of certain large CHP assumptions to ensure that it best reflects the real-world opportunities. In particular, the CHP Generators propose that ICF and the Commission reexamine and modify the Assessment's assumptions regarding:

- ✓ Acceptance of CHP, and thus market penetration, in the large industrial sector; and
- ✓ Electricity sector greenhouse gas (GHG) emissions avoided by the installation of CHP relative to separate heat and power (SHP) alternatives.

The CEC should also identify any other key assumptions that could materially affect the results of the Assessment and discuss these sensitivities in its final report.

II. PROPOSED MODIFICATIONS OF ASSUMPTIONS

A. Market Penetration for Large Industrial CHP Appears Understated

The Assessment identifies approximately 3,550 MW of potential CHP in its 2020 "all in" scenario (Slide 32). While ICF concludes that the *"[g]reatest market and GHG benefit comes from preserving existing large CHP and pursuing remaining large CHP technical potential"* (Slide 34), it concludes that 75% of new growth will be "small stuff" (Slide 33). Based on the 2005 study, information provided by WSPA at the July 23, 2009 informational hearing and criteria set in

the Energy Independence and Security Act of 2007 (EISA), market penetration for large CHP may be understated and should be examined further in a sensitivity analysis.

As an initial matter, it is useful to observe the significant changes that have occurred in the Commission's CHP assessment since 2005. The following table, provided in WSPA's presentation, provides an overview of those changes:

Date of Report	Technical Potential (MW)		Aggressive Deployment (MW in 2020)				GHG Savings
	All CHP	Industrial CHP	All CHP	AC CHP	On-site CHP	Export CHP	All CHP (MM tonnes/yr)
April 2005	30,232	6,418	7,340	-	4,471	2,869	6.7
July 2009	18,417	8,701	3,550	239	2,431	880	2.5
May 2009		6,132					
Note: Updated survey of industrial CHP only.						5 - 20 MW	
						263	
						> 20 MW	
						4,000	

As a general matter, these changes are quite dramatic. The megawatts in the Aggressive Deployment scenario have declined by half. Technical potential for industrial CHP has increased by roughly a third, but export potential has declined by 70%. In April 2005, the Aggressive Deployment for 2020 scenario was 7,340 MW for all CHP, while the technical potential for industrial CHP was 6,418 MW. In other words, technical potential for industrial CHP was less than total deployment. In July 2009, the relationship has changed substantially. The Aggressive Deployment scenario is 3,550 MW, meaning the industrial CHP potential of 8,701 is more than twice the total deployment. While there may be a rationale for the 2009 report findings, the materiality of change in four years suggests that further exploration is required and the findings should be evaluated against independent information.

It is noteworthy that WSPA's oil and gas industry potential of 1,722 MW exceeds the 2029 aggressive deployment for large industrial CHP by 527 MW. The 2009 report findings mean that only roughly two-thirds of oil and gas industry projects would be built under the best of conditions, and there would be no other large projects constructed in any industry. Once again, this suggests that the penetration of large industrial CHP may be understated.

The low penetration exhibited in the Assessment appears largely due to assumptions regarding customer acceptance of payback periods. The Assessment concluded that at a four-year payback, customer acceptance would be roughly 25% (Slide 39). These results were based on a 2004 Primen study, which was based on a survey that may be out of date.

In addition, the forecast price for export power can affect the payback period for export projects as will the availability of grant monies for CHP projects under the American Recovery and Reinvestment Act of 2009. We understand that power export prices in the Assessment ranged from \$.0632/kWh in 2009 to \$.0751/kWh in 2019. The estimated range may be low based on new resources recently procured by the utilities³ and the most recently determined Market Price Referent (MPR) prices adopted by the CPUC.⁴ For example, the Assessment appears to reflect baseload combined-cycle combustion turbine (CCCT) operation at a 70% capacity factor and levelized nominal natural gas prices of

³ The cost for SCE's Mountainview CCCT project (installed in 2005-2006) is 7.7¢/kWh based on reported 2008 fixed costs (at ICF assumed baseload capacity factor of 70%) and ICF's apparent 10-year levelized natural gas costs of \$6.87/MMBtu; Walnut Creek Contract (10-year contract with an in-service date mid-2013) levelized Capacity Payment is \$204/kW-yr, this equates to a 16¢/kWh fixed-related component price (at a 15% capacity factor).

⁴ Resolution E-4214: 20-year Contract beginning in 2009 has a levelized all-in price of 10.04¢/kWh.

about \$6.87/MMBtu for a 10-year period beginning in 2009. Adjusting for comparable operation and natural gas prices, the resulting cost associated with both the CPUC's most recently adopted MPR and operational CCCT are significantly higher than the Assessment power export prices for roughly the same 10-year period.⁵

A customer's willingness to accept a project payback will depend to a large degree on the risk associated with the project. The Assessment's "all in" scenario, in particular, attempts to mitigate a good deal of project risk. Moreover, if the increased greenhouse gas risk a CHP facility takes on -- that was formerly the responsibility of the utility -- were mitigated entirely through a cost pass-through similar to what utility generation recovers in its own contracts, the risk could be lowered further. In addition, in establishing program eligibility for waste energy recovery projects under §372(b)(2)(A) of the EISA (Public Law 110-140), Congress adopted a five-year payback threshold. In light of these indicators, customer acceptance merits reexamination, including a more significant level of acceptance at a four-year payback period.

B. Avoided GHG Benchmark

One of the most important factors in determining whether there are greenhouse gas savings in the development of CHP is the separate heat and power benchmark against which CHP emissions are measured. Assumptions in the Assessment's SHP benchmark require reconsideration. In particular, the use

⁵ Adjusting the MPR for the ICF natural gas prices and baseload capacity factor results in an all-in price of about 8.6¢/kWh (or 8.1¢/kWh excluding the cost of GHG compliance).

of a 7,050 Btu/kWh heat rate for existing CCCTs and 6,850 Btu/kWh heat rate for new CCCTs falls below reasonable assumptions by a number of measures:

- ✓ The Energy Commission's own proposed guidelines for implementation of AB 1613 specify that fuel savings should be measured against a SHP benchmark of an 80% efficient boiler and a 8,358 Btu/kWh heat rate.⁶
- ✓ 2008 EIA data for SCE's Mountainview CCCT – a “new” CCCT -- indicate at heat rate of approximately 7,460 Btu/kWh operating at baseload.⁷
- ✓ 2008 EIA data for existing California non-CHP gas-fired generation – including new and existing CCCTs -- indicate an average generation weighted heat rate of 8,032 Btu/kWh.⁸

On these grounds, the Assessment should be modified to reflect more realistic heat rates for the SHP benchmark electric reference. For consistency, the CHP Generators recommend the use of the Energy Commission's proposed 8,358 Btu/kWh.

Finally, the reliance of California on out-of-state coal resources is often overlooked in evaluating the importance and benefits that in-state industrial CHP provides. California relied on coal-fired generation for over 18% of the State's total 2008 electric energy needs. Moreover, coal-based imports comprise over 58% of the total imports from the Southwest into California. The 2009 Assessment appears to be silent on the ability of new CHP resources to displace

⁶ <http://energy.ca.gov/2009publications/CEC-200-2009-016/CEC-200-2009-016-D.PDF>.

⁷ Sources: Annual data compiled from monthly Forms EIA-923 and EIA-860 filed with the US Department of Energy's Energy Information Administration (EIA); 2008 December EIA-923 File.

⁸ Sources: Annual data compiled from monthly Forms EIA-923 and EIA-860 filed with the US Department of Energy's Energy Information Administration (EIA); 2008 December EIA-923 File.

even a portion of this substantial amount of coal generation. It is imperative that California not adopt a scaled down CHP policy driven by an assumption that reduced reliance on coal fired generation is attributed to other forms of generation and none to CHP.

Respectfully submitted,

/s/ Beth Vaughan

Beth Vaughan

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California Cogeneration Council

A handwritten signature in cursive script, reading "Evelyn Kahl".

Evelyn Kahl

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