



January 11, 2010

Kevin Kennedy  
Office of Climate Change  
California Air Resources Board  
1001 I Street  
Sacramento, CA 95814

**Re: Draft Cap and Trade Regulations**

Dear Mr. Kennedy,

The attached comments are offered on behalf of the Energy Producers and Users Coalition<sup>1</sup> and the Cogeneration Association of California<sup>2</sup> (EPUC/CAC). Members of these coalitions own and operate roughly 2,400 MW of existing combined heat and power (CHP) generation in California, which is located primarily at refineries and enhanced oil recovery operations. These CHP facilities generate roughly 18 million MWh of power for the state of California.

The attached comments were submitted to the Economic and Allocation Advisory Committee (EAAC) in December. Despite the fact that the allocation distribution issue remains before the EAAC, it is important for CARB to consider these comments. While the EAAC has engaged in a significant amount of theoretical analysis, it has overlooked the practical implications of its recommendations. For example, without further clarification, the EAAC recommendations would not ensure that all Scoping Plan objectives, such as increased reliance on CHP resources, would be achieved. Moreover, the recommendations ignore existing state policy meant to promote competition particularly in the electricity sector.

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<sup>1</sup> 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 LL, ConocoPhillips Company, ExxonMobil Power and Gas Services Inc., Shell Oil Products US, THUMS Long Beach Company, and Occidental Elk Hills, Inc., ConocoPhillips Company, Shell Oil Products US, THUMS Long Beach Company, and Occidental Elk Hills, Inc.

<sup>2</sup> CAC represents the combined heat and power 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



We are available to discuss these and other CHP issues at your request.

Very truly yours,

A handwritten signature in black ink that reads 'Seema Srinivasan'.

Seema Srinivasan



December 23, 2009

Dr. Lawrence Goulder, Chairman  
AB 32 Economic and Allocation Advisory Committee  
California Air Resources Board  
1001 I Street  
Sacramento, CA 95814

**Re: Draft Recommendations to the California Air Resources Board from the Economic and Allocation Advisory Committee**

Dear Mr. Goulder,

These comments are offered on behalf of the Energy Producers and Users Coalition<sup>1</sup> and the Cogeneration Association of California<sup>2</sup> (EPUC/CAC). Members of these coalitions own and operate roughly 2,400 MW of existing combined heat and power (CHP) generation in California, which is located primarily at refineries and enhanced oil recovery operations. These CHP facilities generate roughly 18 million MWh of power for the state of California. CHP is also the most efficient form of distributed generation and therefore capable of generating a significant amount of emission reductions to further the State's AB 32 goals.<sup>3</sup> In fact, CARB's Scoping Plan includes a CHP measure capable of generating 6.7 MMTCO<sub>2</sub>e. Due to existing barriers, however, this objective cannot be met unless additional policy support for CHP is provided. To ensure existing CHP potential is optimized, the Economic and Allocation Advisory Committee (EAAC) should consider the following modifications to its recommendations:

- (1) Supplement Recommendation 11 to clarify that use of allowance value to finance private investment in CHP would be appropriate;
- (2) Acknowledge that an allowance distribution scheme that overcomes CHP market barriers will better ensure that existing high-efficiency CHP resources remain viable and that the Scoping Plan's CHP measure will be attained;

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<sup>3</sup> CEC 2009 Integrated Energy Policy Report, at 92.



- (3) Recognize that an allocation distribution policy (including direct incentives, auction revenues, and allowance allocation) must focus on CHP efficiency, not size;
- (4) Reflect the importance of an allowance distribution scheme that ensures equal treatment of all California electric load; and
- (5) Modify allowance distribution recommendations to preclude GHG policy from countering state efforts to promote a competitive electricity market.

Each of these points is discussed below.

***EAAC Report Recommendation 11 Should Be Supplemented To Clarify That Use of Allowance Value to Promote Investment in CHP Would Be Appropriate***

Recommendation 11 is critical to achievement of AB 32 objectives but requires additional detail. Recommendation 11 advises the use of allowance value to promote public and private investment in measures that further AB 32 objectives:

*The Committee recommends that ARB devote a significant share of allowance value toward financing of public and private investment oriented toward achieving low-cost emissions reductions, adaptation, and environmental remediation.<sup>4</sup>*

The recommendation goes on to recognize that certain socially beneficial investments would not be made due to existing barriers.<sup>5</sup> The recommendation references Sections 4 and 5, which provide additional detail on the investments contemplated by the EAAC committee.<sup>6</sup> Chapter 5 supports use of allowance value for energy efficiency measures recommended in CARB's Scoping Plan. In addition, Section 5.2 recommends the financing of investments on the grounds that existing market barriers or price signals do not facilitate these investments that would otherwise promote AB 32 objectives.<sup>7</sup> The section would benefit from further discussion of these investments and should explicitly recommend the use of allowance value for CHP investment.

Investment in CHP is consistent with the objectives provided in Chapter 5 because it is an energy efficiency measure that faces market barriers. As recognized in CARB's Scoping Plan, CHP is an important emission reduction measure required to achieve AB 32 goals:<sup>8</sup>

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<sup>4</sup> Draft EAAC Report, at 60.

<sup>5</sup> Id.

<sup>6</sup> Id.

<sup>7</sup> Draft EAAC Report, at 38-40.

<sup>8</sup> CARB Scoping Plan, at 44.



**Table 7: Energy Efficiency Recommendation - Electricity  
 (MMTCO<sub>2</sub>E in 2020)**

Measure No.	Measure Description	Reductions
E-1	Energy Efficiency (32,000 GWh of Reduced Demand) <ul style="list-style-type: none"> <li>• Increased Utility Energy Efficiency Programs</li> <li>• More Stringent Building &amp; Appliance Standards</li> <li>• Additional Efficiency and Conservation Programs</li> </ul>	15.2
E-2	Increase Combined Heat and Power Use by 30,000 GWh	6.7
<b>Total</b>		<b>21.9</b>

**Table 8: Energy Efficiency Recommendation - Commercial and Residential  
 (MMTCO<sub>2</sub>E in 2020)**

Measure No.	Measure Description	Reductions
CR-1	Energy Efficiency (800 Million Therms Reduced Consumption) <ul style="list-style-type: none"> <li>• Utility Energy Efficiency Programs</li> <li>• Building and Appliance Standards</li> <li>• Additional Efficiency and Conservation Programs</li> </ul>	4.3
CR-2	Solar Water Heating (AB 1470 goal)	0.1
<b>Total</b>		<b>4.4</b>

In fact, as revealed by the tables above, the CHP measure has been estimated to generate 6.7 MMTCO<sub>2</sub>e. The CEC has also concluded that CHP is a critical tool to promote energy efficiency:

*CHP, also referred to as cogeneration, is the most efficient and cost effective form of distributed generation, providing benefits to California citizens in the form of reduced energy costs, more efficient fuel use, fewer environmental impacts, improved reliability and power quality, locations near load centers, and support of utility transmission and distribution systems. In this sense, CHP can be considered a viable end use efficiency strategy for California businesses. Widespread development of efficient CHP systems will help avoid the need for new power plants or expansion of existing plants.<sup>9</sup>*

Finally, both CARB’s Scoping Plan and the Economic and Technology Advancement Advisory Committee (ETAAC) acknowledge that CHP faces several barriers.

- *California has supported CHP for many years, but market and other barriers continue to keep CHP from reaching its full market potential. Increasing the deployment of efficient CHP will require a multi-pronged approach that includes addressing significant barriers and instituting incentives or mandates where appropriate. These approaches could include such options as utility-provided*

<sup>9</sup> CEC 2009 Integrated Energy Policy Report, at 92.

*incentive payments, the creation of a CHP portfolio standard, transmission and distribution support payments, or the use of feed-in tariffs.*<sup>10</sup>

- *While CHP is not a new technology, barriers exist that prevent full deployment of cost-effective CHP into the industrial sector and commercial sectors. State and utility policies could also be better aligned to support qualifying CHP.*<sup>11</sup>

In other words, CHP is an AB 32 investment consistent with Recommendation 11. Accordingly, the EAAC recommendations should modify the discussion of CHP and Chapter 5 to clarify that using allowance value to promote investment in private CHP is appropriate.

***EAAC Report Must Acknowledge That An Allowance Distribution Policy That Can Overcome CHP Barriers Will Better Ensure Scoping Plan's CHP Measures Are Attained***

Some question the need for the cap-and-trade allowance distribution process to promote CHP investment but there are two main reasons why recognition of CHP investment barriers is critical. First, investment in CHP resources increases a CHP owner's GHG compliance costs despite decreasing societal emissions. Second, CHP cost recovery in the market is not guaranteed.

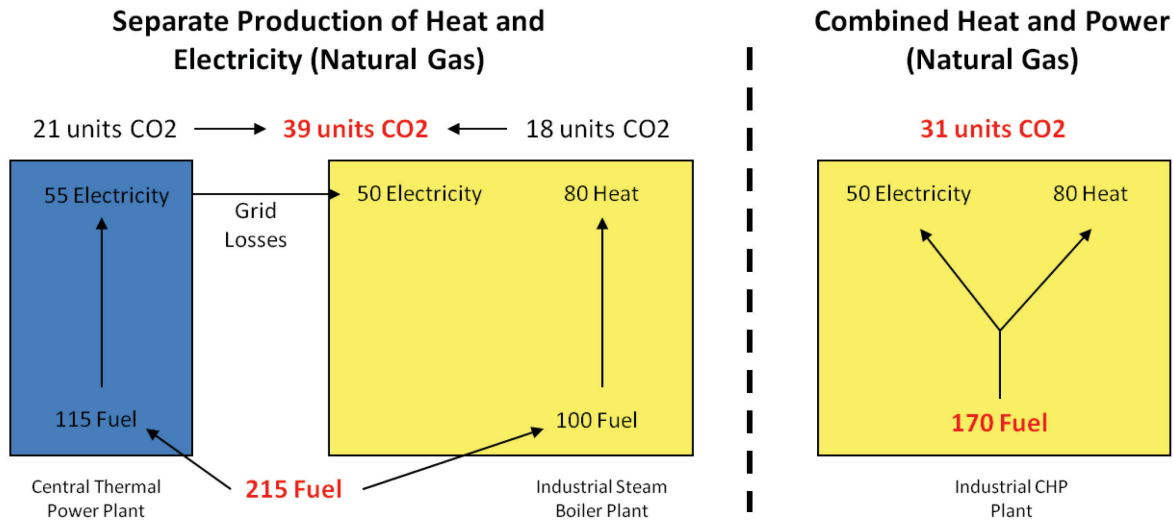
**Investment in CHP Increases CHP Owner GHG Compliance Costs Despite Decreasing Societal Emissions**

While installation of CHP decreases societal GHG emissions, an investment in CHP increases the CHP investor's direct emissions responsibility because it displaces grid power. This is referred to as the "*CHP Paradox*." As illustrated by the diagram below, compared to the separate generation of electricity by a gas-fired generator and steam production by a boiler, CHP generates fewer total GHG emissions:

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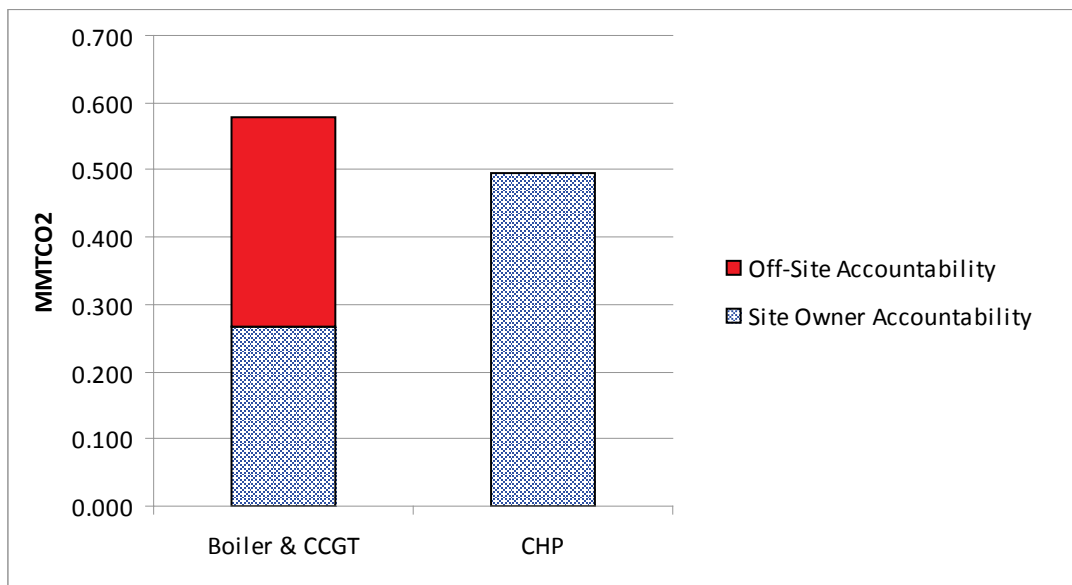
<sup>10</sup> CARB Scoping Plan, at 44.

<sup>11</sup> Recommendations of the Economic and Technology Advancement Advisory Committee, at 4-5.



As revealed by the diagram, before CHP investment, an industrial facility would directly bear GHG responsibility for 18 units of CO<sub>2</sub>. Once investment in CHP takes place, the industrial facility bears the responsibility for 31 units of CO<sub>2</sub>. Thus while, CHP decreases societal emissions from 39 units of CO<sub>2</sub> to 31 units of CO<sub>2</sub>, the CHP owners will see an increase in direct GHG compliance responsibility from 18 units to 31 units of CO<sub>2</sub>.

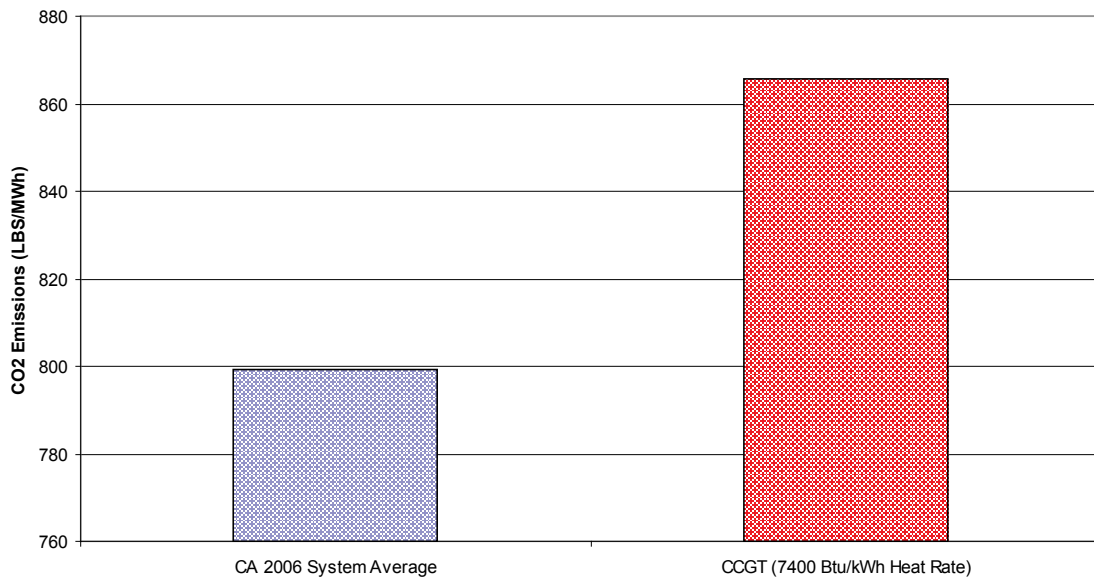
From a societal standpoint, CHP's efficiency can be quantified when its emissions are compared to the GHG emissions generated from the separate production of heat and power as illustrated below.





As demonstrated above, the total emissions of a CHP facility will be less than that of a separate boiler and CCGT grid power. CHP's efficiency is appropriately compared to these resources in evaluating GHG benefit because CHP actually displaces marginal, fossil generation on the grid as well as the emissions from an industrial boiler.

A CHP investor, however, evaluates CHP investment potential differently. Rather than examining societal benefit, it evaluates the option from an economic standpoint, including potential GHG compliance costs. Prior to CHP investment, a facility owner was securing thermal energy from a stand-alone boiler and electricity from its interconnected utility. It thus would be directly responsible solely for the boiler emissions; the indirect electricity emissions would be accounted for in some uniform manner in its electricity rate. Moreover, the average emissions rate of an interconnected utility in many cases is lower than a pure fossil emissions rate of a CHP plant, when the utility portfolio includes a large amount of non-emitting generation such as hydropower and nuclear power. Even though the CHP resource would displace the dirtiest, marginal resource, the investor would be concerned from a cost standpoint only with the avoided utility portfolio average emissions.



From an investor's perspective, investment in CHP will increase total GHG compliance costs even though from a societal perspective, CHP is more efficient than fossil-fired generation. This is precisely why CHP investment requires the right regulatory signals and incentives.

### **CHP Cost Recovery in the "Market" is Not Guaranteed**

Cost recovery for CHP "in the market" is not guaranteed. As a preliminary matter, most of California's generation is priced outside of these markets due to the heavy reliance on bilateral contracting. The CAISO itself admits that this market is really an



“optimization” market, not a market that will sustain the building of new generation build. In reality, only utilities, whose generation receives cost-of-service treatment, and merchants selling power under negotiated bilateral contracts have an opportunity today for full GHG cost pass-through (*i.e.* recovery of GHG compliance costs by the generator). While the CPUC could provide the same provision for CHP, thus far it has not. In addition to other barriers, forcing CHP to recover GHG compliance costs from a market that may not fully reflect GHG costs can close the door to new CHP investment.

***EAAC Report Should Recognize That An Allowance Distribution Policy Must Focus on CHP Efficiency, Not Size***

Regulatory support for CHP should turn on efficiency, not size. CHP discussions and measures often turn on the question of size. Namely, should large and small scale CHP be treated similarly? Although size distinctions were not made for nearly 20 years of CHP development, these distinctions have found more favor in recent years. While EPUC/CAC do not seek to erode existing benefits for small CHP, using size as qualifying criteria for incentives detracts from the objectives of AB 32. As the CEC’s 2007 IEPR observes:

*Combined heat and power in particular offers low greenhouse gas emissions rates for electricity generation taking advantage of a fuel that is already being used for other purposes. **Large combined heat and power units appear to offer the greatest fuel efficiency of available distributed generation technologies.** Because combined heat and power systems are located close to the load, transmission and distribution line losses are minimized, further reducing greenhouse gas impacts.<sup>12</sup>*

In short, if the state’s objective is to materially lower GHG emissions, the allowance distribution mechanism including direct incentives, auction revenues and allowance allocation should favor those generation facilities, regardless of size, that are capable of the greatest fuel efficiency. To maximize GHG reductions and other environmental benefits, the efficiency of a CHP facility, rather than an arbitrary MW threshold, should be the focus of State policy.

***EAAC Report Should Reflect Importance of an Allowance Distribution Scheme that Ensures Equal Treatment of All California Electric Load***

Allocation of allowances or allowance value to LDCs for the benefit of their loads can result in differential treatment of load in California unless the same benefit is conferred on load served by other sources. To ensure that all load would be treated equally, the CPUC/CEC decision on GHG regulatory strategies determined that CHP serving on-site load should receive allowances on the same basis as retail providers:

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<sup>12</sup> 2007 IEPR, at 162.

*We also recommend that ARB treat CHP operators comparable to retail providers for the portion of CHP-generated electricity that is used on-site. To the extent that allowances are distributed to retail providers, the CHP operator should receive allowances on the same basis as retail providers and should be required to sell the received allowances through the centralized auction undertaken by ARB or its agent.<sup>13</sup>*

Accordingly the CPUC/CEC final decision recommended that, similar to LDCs, CHP serving on-site load would receive an increasing share of auction revenues that could be applied to promote AB 32 objectives. The EAAC recommendations must also ensure that all electric load will be treated the same. Accordingly, if it leaves open the option for CARB to allocate allowances or allowance value to LDCs for the benefit of their loads, allowances or allowance value must be made available on the same basis for CHP serving on-site load. As the CPUC/CEC noted, these funds could be used for purposes related to AB 32. In particular, the CPUC/CEC determined that *“the scope of permissible uses should be limited to direct steps aimed at reducing GHG emissions and also bill relief to the extent that the GHG program leads to increased utility costs and wholesale price increases.”*<sup>14</sup> Bill relief for self-provided electric load and investment in CHP are two options that would qualify as AB 32 purposes. Thus, these options must be made available to CHP load.

### ***EAAC Should Modify Allowance Distribution Recommendations to Preclude GHG Policy From Countering State’s Efforts to Promote a Competitive Electricity Market***

The EAAC draft recommendations leave open the option for CARB to allocate allowances or allowance value to LDCs for the benefit of their ratepayers as long as the allocation is phased out by 2016.<sup>15</sup> This raises significant competitive concerns. As noted by the Independent Energy Producers, investor-owned utilities (IOU) that are regulated by the CPUC not only procure energy to serve their customers, they also own a significant amount of generation.<sup>16</sup> For every ratepayer funded generation project built by an IOU, their shareholders receive the benefit of a return on equity that directly benefits IOU shareholders. This shareholder incentive motivates the IOUs to build their own generation rather than procure power from independent suppliers. Since 2004, the CPUC has taken great strides to promote a competitive market. To ensure that GHG allowance distribution does not detract from these efforts, the EAAC report should clarify that any allowances or allowance value made available to LDCs to further AB 32 resource investments in renewable resources and CHP will be made available to private investors on the same basis.

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<sup>13</sup> D.08-10-037, 17-18.

<sup>14</sup> CPUC/CEC Final Decision on GHG Regulatory Strategies, at 225.

<sup>15</sup> See EAAC Draft Report dated December 14, 2009, Recommendation 9, at 60.

<sup>16</sup> Independent Energy Producers Association Comments dated September 8, 2009.



We are available to discuss these and other CHP issues at your request.

Very truly yours,

A handwritten signature in black ink, appearing to read 'Seema Srinivasan', written in a cursive style.

Seema Srinivasan