



*Via Email*

To California Air Resources Board  
From Evelyn Kahl and Seema Srinivasan  
Date April 2, 2008  
Regarding Comments of the Energy Producers and Users Coalition and the Cogeneration Association of California on CARB Allowance Distribution White Paper and Modeling Effort

---

The Energy Producers and Users Coalition and the Cogeneration Association of California (EPUC/CAC) submit these comments as owners and operators of combined heat and power (CHP) facilities in California. Members of these coalitions own and operate roughly 3200 MW of existing CHP generation in California, located primarily at refineries and enhanced oil recovery operations. Several coalition members are also considering either replacement of existing CHP facilities with higher-efficiency plants or the installation of new facilities to meet growing thermal demand. In the interest of maintaining existing facilities and further developing CHP capacity, EPUC/CAC offer the following comments on the white paper and presentations issued at the March 17, 2008, technical workshops on allowance allocation.

1. An auction can penalize rather than reward investment made in CHP, a well-recognized greenhouse gas (GHG) reduction tool; and
2. Modeling cap-and-trade scenarios assuming a phased-in auction, rather than an immediate 100% auction, is prudent in light of California's lack of experience with a cap-and-trade market and the critical importance of electric reliability in California.

**Allowance Distribution Through An Auction Can Penalize Investment in CHP.**

CARB's white paper, in part, compares the benefits and shortcomings of distributing allowances using an auction and allocation. In comparing the two, the white paper mistakenly concludes that "[a]uctioning provides an inherent recognition of early actions through the avoided cost of purchasing allocations."<sup>1</sup> This principle does not hold true in the case of CHP resources. Accordingly, to ensure the accuracy of the white paper, the statements referencing the ability of an auction to reward early action must be qualified.

---

<sup>1</sup> California Air Resources Board Assembly Bill 32 Technical Stakeholder Working Group Meeting (White Paper), at 6.

## Air Resources Board

April 2, 2008

Page 2

CHP is an important GHG reduction tool capable of up to 9-11 MMTCO<sub>2</sub> Annual Savings.<sup>2</sup> The ETAAC Report recognizes “CO<sub>2</sub> reductions of 25-45 percent are possible with well-designed CHP systems, resulting in 0.6 to 1.5 MMT annually per 1,000MW of installed CHP capacity.”<sup>3</sup> In other words, investment in CHP is precisely the type of early action that should be encouraged.

Installation of CHP typically results in a societal *decrease* in GHG emissions when compared with the alternative: separate production of electrical and thermal energy. Paradoxically, however, the installation of CHP results in an *increase* in direct on-site GHG emissions responsibility for the industrial or commercial operation investing in CHP. This paradox occurs because installing CHP replaces (a) a consumer’s indirect emissions responsibility for purchased electricity (theoretically reflected to some degree in the utility’s *average portfolio emissions rate*) with (b) direct emissions responsibility as a CHP generator (imposed at a *marginal generation emissions rate*). Under a regulatory framework where customers are required to procure allowances to cover their direct emissions (e.g., Deliverer model), an industrial customer investing in on-site CHP can be penalized with greater cost responsibility under a GHG regulatory scheme, rather than rewarded as the white paper assumes

The following example demonstrates how installation of CHP can increase an investor’s GHG compliance costs while, at the same time, lowering global emissions:

Customer A and Customer B have identical industrial operations, with precisely the same thermal and electrical requirements. Customer A purchases its power from the utility and produces thermal energy using a conventional steam boiler. Customer B operates CHP on-site to meet both its thermal and electrical needs. Assume further that the applicable GHG regulations require the two Customers to acquire allowances to cover only its direct on-site emissions. In the case of Customer A, it must cover only the emissions from its steam boiler; it does not bear allowance responsibility for the power it purchases from the utility because the associated emissions are indirect. Customer B, in contrast, must procure enough allowances to cover both its electrical and thermal consumption because all of the emissions are direct on-site emissions.

The resulting distortion is depicted in the following graph. While the CHP installation *decreases* GHG emissions attributable to Customer B’s energy consumption, it increases Customer B’s direct responsibility to obtain GHG allowances by 20%.

---

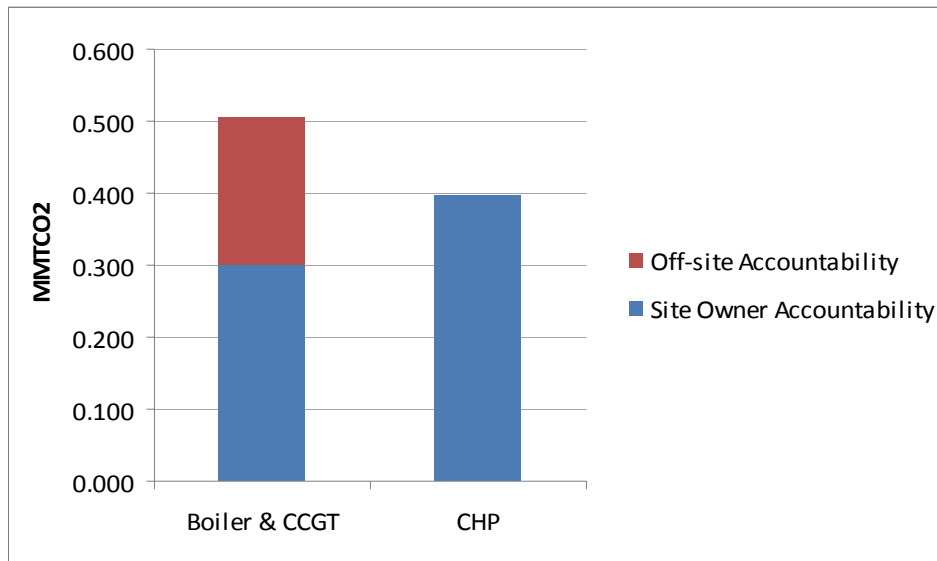
<sup>2</sup> These emissions savings can be achieved under the high deployment scenario discussed in the CEC’s report entitled Assessment of California CHP Market and Policy Options for Increased Penetration, dated July 2005. See also Economic and Technology Advancements for California Climate Solutions, Discussion Draft (Nov. 15, 2007) at 4-9.

<sup>3</sup> Recommendations of the Economic and Technology Advancement Advisory Committee (ETAAC) Final Report, at 4-4.

## Air Resources Board

April 2, 2008

Page 3



Some parties assert that investment in CHP will not increase GHG compliance costs for an industrial customer on the basis that a CHP facility would have otherwise paid for its GHG compliance costs through utility electricity rates. A CHP owner, however, bears higher compliance costs when it invests in CHP because the *average portfolio emissions rates* of an investor-owned utility (IOU) will always be lower than the *marginal emissions rate* of a CHP owner. An IOU average portfolio emissions cost per MWh of power sold will always be lower for the following reasons:

1. IOU rates reflect an average portfolio emissions cost, blending zero emissions nuclear, hydro and renewable resources in the mix. Because an IOU portfolio contains such a mix of resources including zero emissions resources, the emissions costs of a fossil-fired CHP generator, while lower than marginal conventional resources, will never beat or even equal the IOU average portfolio emissions rate. If, for example, an IOU's blended portfolio rate is 400 lbs/MWh, and a CHP plant's rate is 600 lbs/MWh, the CHP industrial consumer would be paying for 200 lbs of CO<sub>2</sub> more per MWh consumed than if it simply purchased electricity from the utility. At \$40 MMT CO<sub>2</sub>, for example, this would translate into an additional cost for CHP of \$3.60 per MWh consumed by the industrial site.
2. Even if the IOU portfolio did not include these zero emissions resources, there are several reasons why a CHP consumer would still be disadvantaged.
  - At the workshop, stakeholders discussed taking steps to mitigate the impact of carbon prices on ratepayers. Taking this approach would mean direct subsidies to utility ratepayers to mitigate carbon impact

without necessarily conferring the same advantage back to consumers who have invested in CHP facilities.

- The GHG compliance costs to the CHP plant are direct and unavoidable; to the extent it emits carbon to produce electricity for consumption, it must pay for that carbon. While this would also be true for utility-owned generation, the costs of carbon may not be fully reflected in the market price of the utility's purchased power.
- Consumers served by CHP continue to pay a material amount of costs related to utility programs that will reduce GHG through the Public Purpose Program charges and other Nonbypassable Charges.

Despite the societal benefit conferred by CHP resources, therefore, an auction does not reward such investments. As a result the statement in the white paper concluding that auctions reward early action efforts must be qualified.

**Modeling Cap-and-Trade Scenarios Using a Phased-in Auction, Rather Than an Immediate 100% Auction, is Prudent in Light of California's Lack of Experience with a GHG Market and the Critical Importance of Electrical Reliability.**

CARB's *Preliminary Approach to Scenario Modeling*, presented by Sam Wade, contemplates an assumption of a 20% auction in 2012, phased to 100% in 2020. Several parties, in contrast, have recommended a 100% auction.<sup>4</sup> While little support is provided for CARB's 20% initial auction, CARB's decision not to use an immediate 100% auction in its model shows reasonable caution. A 100% auction risks a material impact on supply reliability. Given the significance of this issue and California's history, it is not prudent for California to engage in such experimentation.

In the electricity sector, a premature auction could have immediate and disastrous impacts on supply reliability and energy markets. In the electricity sector alone, depending on the forecasted carbon value, cost impacts could range from more than \$700 million (at \$8/tonne CO<sub>2</sub>e) to more than \$5 billion (at \$50/tonne CO<sub>2</sub>e). As discussed at the workshop, it remains unclear that all regulated entities will be able to pass through existing contracts or recover from the market the compliance costs imposed by GHG regulations. In the electricity sector, for example, it remains unsettled whether entities such as CHP who are subject to administratively determined contract prices, can pass through GHG compliance costs. To the extent generators are not able to recover their full cost of carbon, the state risks a reduction in resource availability. In short, starting at a 100% auction would be premature. Instead, California must proceed cautiously as it gains its own market experience.

---

<sup>4</sup> See Statement of Support for Auctioning All Allowances in Any Global Warming Cap-and-Trade Program; Comments of Climate Protection Campaign; Comments of Environment California Research and Policy Center.

**Air Resources Board**

April 2, 2008

Page 5

The parties who advocate auctioning 100% of available allowances cite to RGGI in support of such an aggressive policy. RGGI's auction does not begin until 2009 and therefore the market impacts of a 100% auction are not documented. RGGI's regulations must also be distinguished on the basis that they are limited to the electricity sector in comparison to California's multi-sector regulatory approach. Stated differently, California's economy-wide regulatory scheme poses a greater risk to its economy than the limited electricity sector approach of the Northeast.

**Recommendations**

EPUC/CAC encourage CARB to recognize that the ability of auctions to reward early action must be qualified: auctions do not reward early investment in CHP. CARB also should continue to reject a 100% auction approach to allow California to gain experience with the new market and avoid detrimental impacts on electric reliability.

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