SMUD
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October 2, 2009

Mr. Manpreet Mattu
Cap-and-Trade Section
Office of Climate Change
California Air Resources Board
1001 I Street
P.O. Box 2815
Sacramento, CA 95812

Re: Sacramento Municipal Utility District's Comments on Combined Heat and Power (CHP) in a California Cap-and-Trade Program

Dear Mr. Mattu:

The Sacramento Municipal Utility District (SMUD) strongly supports efficient Combined Heat and Power (CHP) as a near-term means of reducing societal greenhouse gas emissions through more efficient use of natural gas and other fossil fuels. SMUD has reduced its own utility emissions and Sacramento's industrial emissions through the deployment of 3 large CHP units in the 1990's. We also run a distributed generation R&D program which continually evaluates technologies and customer opportunities for deployment of CHP in our community. We are currently conducting feasibility studies and assessing several such opportunities with customers. Most recently, we've announced a first-of-its-kind Feed-in Tariff that would apply to CHP units up to 5 MW in size.

It is in the context of SMUD's strong support for CHP that we offer the following observations concerning treatment of CHP under the proposed cap-and-trade system. First, SMUD is concerned that the CHP greenhouse gas savings identified in the Scoping Plan may be optimistic. Second, SMUD supports fair treatment of CHP units in a cap-and-trade program, and specifically believes that Option 2 as described by ARB staff provides the fairest treatment among the options. Finally, SMUD is concerned that proposals for a CHP portfolio standard—requiring all entities to have minimum levels of CHP resources—may discourage GHG reductions over time, as the GHG signature of electricity resources are displaced by CHP decreases.

With respect to the Scoping Plan's targets for GHG savings through CHP, even if the aggressive capacity goals of 4,000 MW statewide can be achieved, the associated

projections of 6.9 million tonnes of GHG savings seems to be far above levels we would estimate based on our experience in Sacramento. In particular, because CHP electricity that is consumed onsite displaces retail electricity sales, it also tends to displace the renewable energy in the system mix, as the reduction in electricity sales by the regulated Retail Provider also reduces the renewables obligation. Also, systems with relatively clean baseload generation will see smaller amounts of displaced greenhouse gases as a result of a CHP unit. For SMUD, a highly efficient natural gas, combined-cycle plant appears to offer roughly the same GHG reduction as most CHP opportunities now available. We feel the ARB, in concert with affected stakeholders, should reevaluate the potential for GHG reductions from CHP through a statewide assessment of CHP potential, by examining economic opportunities, environmental constraints, and consistency with longer term climate change targets.

The ARB staff presentation asked a number of questions regarding the treatment of CHP units in the cap-and-trade program. SMUD supports fair treatment of CHP units in a cap-and-trade program, specifically ensuring that CHP units are not discouraged through allowance allocation policy. Out of the staff proposed options for treatment of CHP, SMUD supports Option 2, which would treat the CHP electricity and heat functions separately in the allocation process. Such a method makes it easier to avoid unanticipated consequences. All three scenarios are discussed briefly below.

Treatment under Option 1. Treating the CHP unit primarily as an industrial source may be appropriate in some CHP scenarios, but would likely be inappropriate in a scenario where the CHP unit sells the majority of its output into the electricity market. In such a scenario, because the unit might sell even a small portion of its output to a thermal host, it would be treated completely different than an identical unit that did not have a steam sales contract. Such disparate treatment could lead to either facilities with no steam sales agreement seeking out industrial partners with very small heat loads to avoid unfair allocation policy in the electricity sector, or if the electricity sector were more favorable, cutting off steam sales agreements with an industrial partner in favor of sole participation in the electricity market. Because of the diversity of industries and customers that use CHP, it would be extremely difficult to design fair allowance allocation policy which attempted to treat these units exclusively as industrial sources.

Treatment under Option 2. Examining the electricity output from a CHP unit in the electricity sector, and the heat output of such a unit in the industrial sector, provides the opportunity to look at how the electricity consumer and the heat consumer from the unit would be treated if not for the CHP, and to design allowance allocation policy accordingly. Whether the electricity is consumed onsite or exported, it can be treated in the electricity sector, without inducing the need for allowance transfer between sectors. New CHP units can be compensated in the same fashion as new electricity generators for their electricity output, and onsite consumers of electricity can apply some of the same arguments that other electricity consumers can as to the need for allowance value return. *Note, however, that CHP electricity consumed onsite is not subject to RPS or EE requirements, nor does it face the prospect of rate impact mitigation for low-income customers, all of which were part of the reason for redistribution of electricity auction revenue back to Load Serving Entities.* Heat consumers can be treated in much the

same way as if they instead operated a boiler to produce that heat. Such treatment is the surest way to minimize perverse incentives to create inefficient CHP units or to dismantle existing systems due to poor allocation design.

Treatment under the 'but-for' Option 3. This option ignores the fact that the electricity component would have been regulated in the cap-and-trade system but for the fact that the CHP unit exists. This policy could be modified to exempt the heat but not the electricity portion of the unit output in fairness to other electricity customers. If specific incentives for CHP need to be designed, they should be designed on the basis of promoting efficient systems, not based upon an arbitrary compliance exemption of a certain size. CHP units that fall below the 25,000 tonne threshold also contribute to AB 32 goals and thus should be promoted.

Under Option 2, for facilities with multiple owners, specifically where steam may be sold to an offsite heat host, or where electricity may be sold offsite, the primary owner of the facility should be responsible for compliance and should arrange for compensation by the purchaser of the heat or electricity product. The consumer of either product should not have the compliance responsibility. Just as electricity plants must sometimes split compliance costs between multiple owners, CHP plants should do the same.

SMUD agrees that to the extent that viable technical, economic, and environmentally desirable CHP opportunities exist and are not being taken, they should be incentivized. Such incentives should promote efficient application of CHP technologies without locking in infrastructure that is incompatible with future emissions targets. SMUD supports an 'incentive' such as our announced Feed-In Tariff, which provides a guaranteed and transparent, low-transaction cost contract for the electricity produced by CHP units. However, proposals to create CHP portfolio standards as a means to achieve AB 32 reductions could result in emissions backsliding by forcing cleaner utilities to procure electricity that may be higher in emissions than their other electricity options. Even when taking steam sales into account, CHP units in SMUD territory would need to achieve an 80% heat utilization to avoid emissions in SMUD's mix. This does not account for hydroelectricity, but only the thermal alternatives and SMUD's renewables portfolio standard. Such efficiency levels are difficult to achieve, and as a result, to date, we have been challenged to find new opportunities for environmentally desirable CHP deployment. Such decisions should be evaluated only after a robust statewide assessment by service territory to examine technical, economic, and environmental feasibility of CHP.

In addition, SMUD notes that the operation of CHP units may not be easily compatible with one desirable aspect of new, efficient gas-fired capacity – the operational flexibility to ramp up or down to provide system services in support of renewable integration. CHP units are often driven by the heat needs of the system host, and this can tend to constrain the ability to ramp the electricity portion of the unit for integration purposes.

Summary

While SMUD strongly supports the use of Combined Heat and Power systems to reduce emissions in California, we also encourage the ARB to conduct further evaluation of the technical, economic, and environmental potential of the technology to gain a better assessment of its likely contribution towards AB 32 goals. Regional differences in industry, electricity mixes, and air quality constraints can significantly impact the cost-effectiveness of the technology. When considering treatment of CHP under the cap-and-trade regulation, fairness points toward the ARB's Option 2; which would treat electricity and heat outputs separately in the electricity and industrial sectors for allocation of allowances.

SMUD appreciates the opportunity to offer these comments in support of appropriate use of efficient CHP in meeting the AB 32 objectives.

Respectfully submitted,

/s/
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cc: Corporate Files