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Ms. Lucille Van Ommering
California Air Resources Board
Office of Climate Change
1001 I Street
Sacramento, CA 95814

Re: Southern California Edison Company's Comments on the California Air Resources Board Workshop on Combined Heat and Power and Cap-and-Trade

Dear Ms. Van Ommering:

Southern California Edison Company ("SCE") appreciates this opportunity to comment on the issues raised at the September 9, 2009 California Air Resources Board ("ARB") workshop on combined heat and power ("CHP") and cap-and-trade.

As discussed below, SCE is concerned that the Assembly Bill ("AB") 32 Scoping Plan's proposal to increase CHP capacity by 4,000 MW will not create the expected greenhouse gas ("GHG") emissions reductions. As the California Energy Commission ("CEC") recently noted in its draft 2009 Integrated Energy Policy Report ("IEPR"), the GHG reductions from CHP are likely to be lower than the 6.7 million metric ton ("MMT") target identified in the Scoping Plan.[1] The likelihood of achieving the Scoping Plan's GHG target is even lower if the ARB does not implement and enforce strict operational requirements and efficiency standards for CHP resources. Indeed, broad reliance on CHP without efficiency, design, and performance considerations will likely increase GHG emissions and natural gas consumption. Accordingly, the focus of any CHP policy, particularly where substantial GHG reduction benefits are expected, should be directed towards what is needed in terms of minimum CHP design, efficiency, and operating performance standards, rather than focusing on a specific MW goal, which has little to do with any expected GHG reductions.

In developing its policy on CHP, the ARB should also carefully consider and reconcile its objectives regarding CHP with competing State policy objectives and the need to maintain electricity grid reliability. Mandating that electric utilities purchase more power from fossil fueled CHP resources conflicts with State goals to reduce electricity consumption through energy

[1] CEC, 2009 Integrated Energy Policy Report, Draft Committee Report ("Draft 2009 IEPR") at 222, CEC-100-2009-003-CTD, September 2009 (available at http://www.energy.ca.gov/2009publications/CEC-100-2009-003/CEC-100-2009-003-CTD.PDF).

efficiency and to increase the amount of energy served by renewable resources. Moreover, with increasing amounts of intermittent renewable resources, there are likely to be increasing difficulties in accommodating baseload CHP resources into the electricity grid. The ARB should ensure that any CHP measures do not prevent the State from reaching other, higher priority policy objectives or jeopardize the reliability of the electricity grid. One step towards this objective is to coordinate with other agencies.

Finally, CHP facilities should be treated as single point sources for cap-and-trade compliance and included in the California cap-and-trade program on the same basis as other facilities. The ARB should not exempt CHP facilities from the emissions thresholds applicable to other facilities or apply such thresholds differently for CHP facilities. Nor should CHP facilities receive GHG allowances as retail providers. CHP projects should receive GHG allowances for their electricity and thermal output on an equal basis with other electricity generating facilities and industrial sources.

A. The ARB Should Only Support Efficient CHP and Should Adopt Performance Standards That Will Provide Meaningful GHG Reductions

While CHP can be an important part of the State's energy mix, CHP resources must be designed and operated efficiently to realize their potential. The Scoping Plan recognizes the importance of efficiency, noting that the "widespread development of efficient CHP systems would help displace the need to develop new, or expand existing, power plants," and discussing "[i]ncreasing the deployment of efficient CHP."[2] Just as with all generators of electricity, there are many variables that contribute to successful operation. For CHP, these include designing and operating a system that efficiently serves thermal loads.

It is important to distinguish between a benchmark and a performance standard. SCE supports the use of a "double benchmark," consisting of an electricity benchmark (in Btu/kWh) and a process heat benchmark (in boiler efficiency) for measuring how much a CHP unit reduces GHG emissions relative to reliance on stand-alone electricity and process heat production. However, these benchmarks should not be the same as the performance standards applied to CHP facilities. If new CHP facilities are going to reduce GHG emissions their performance must be equivalent to state-of-the-art alternatives. Accordingly, the performance standard for new CHP should be based on the performance characteristics of a new combined cycle gas turbine ("CCGT") (around 7,000 Btu/kWh) and a "premium" 85% efficient boiler. Construction of either a new CHP unit or a CCGT may result in GHG reductions. The ARB's regulations should ensure that the technology which produces the most GHG savings is chosen.

B. The ARB Should Consider Competing State Policy Objectives and the Reliable Operation of the Electricity Grid in Developing CHP Policy

The ARB's policy regarding CHP facilities is just a small part of the State's overall energy policy and the State's overall policy to reduce GHG emissions to meet AB 32 goals. In developing recommendations on CHP, the ARB should carefully consider competing (and sometimes

[2] Scoping Plan at 43-44 (emphasis added).

contradictory) State policy objectives and ensure that it does not adopt CHP measures that prevent the State from reaching other, higher priority policy goals. The ARB must also ensure that its CHP policy does not adversely impact the reliable operation of the electricity grid.

While there is potential for CHP to provide meaningful GHG emission reductions, the ARB should take responsible efforts to incorporate CHP resources into the electric utilities' portfolios in a way that recognizes how such facilities can and cannot assist electricity grid operations. At the September 9th workshop, staff indicated that they were considering CHP feed-in tariffs and a CHP portfolio standard that would impose must-take obligations on electric utilities to purchase CHP power. However, electric utilities cannot take unlimited amounts of power from CHP facilities, or any other electricity generating facilities, without significant impacts to operations.

Over the last several decades, energy agencies have increasingly encouraged reduction of electricity consumption through energy efficiency and increased energy production from renewable resources. Indeed, the Scoping Plan includes 15.2 $MMTCO_2e$ reductions from electricity energy efficiency measures and 21.3 $MMTCO_2e$ reductions from a 33% Renewables Portfolio Standard. Electric utility customers only consume so much energy, and the State is encouraging reduction of that energy consumption through energy efficiency, and serving the remaining energy from renewable resources. These competing policy goals will likely create excess supply if not coordinated, especially in off-peak periods when utilities may already be net sellers of energy.

Moreover, energy efficiency tends to reduce off-peak electricity consumption and wind resources tend to deliver proportionately more energy in off-peak periods. As a result, SCE and other electric utilities' ability to absorb additional power in off-peak periods is limited. CHP, which tends to operate in a baseload "around the clock" manner in order to meet process host needs and make efficient use of the facility, can conflict with this limited ability to utilize the power to meet customer needs. In addition, renewable energy resources tend to produce power intermittently (when the sun shines or the wind blows) and cannot be controlled (dispatched) by electricity grid operators. As a result, there is a need for additional dispatchable resources, such as CCGTs, that allow the electricity grid operator to meet simultaneous variations in customer usage and renewable energy generation.[3] Dispatchable CHP resources can also assist in addressing the intermittency of renewable resources. Accordingly, the CEC has recognized that dispatchability is an important characteristic of CHP resources.[4]

Furthermore, CHP facilities typically burn fossil fuels (i.e., natural gas, pet coke, or coal) on a baseload basis emitting considerable GHG emissions and typically have a useful life of 30 years or more. Although the AB 32 compliance period ends in 2020, both Executive Order S-3-05 and the Waxman-Markey bill being considered in Congress call for significant GHG reductions in subsequent years. To the extent that ARB regulations encourage the development of a significant number of additional CHP facilities, this may diminish California's flexibility to implement additional measures beyond 2020 to achieve future GHG emissions reductions.

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[3] For instance, in a recent long-term procurement plan decision, the California Public Utilities Commission ("CPUC") authorized SCE to procure between 1,200 and 1,700 of new generation resources, but directed that such resources should all be dispatchable in order to accommodate additional renewable resources. CPUC Decision 07-12-052 at 110-112, December 20, 2007.

[4] Draft 2009 IEPR at 222.

For all these reasons, SCE urges the ARB to work with California's energy agencies to carefully evaluate any proposed CHP policies against the State's competing policy objectives and to ensure that they do not result in policy conflicts or jeopardize the reliability of the electricity grid. This analysis should seek a balanced strategy that weighs the merits of different components of the Scoping Plan, including consideration of the potentially beneficial impacts of transportation electrification.

C. The ARB Should Coordinate With Other Agencies on the Technical and Economic Market Potential for CHP

Appropriate assessment of the CHP market requires agreement on assumptions and methodologies, especially as these studies influence State policy actions and regulatory changes. Using SCE's existing qualifying facility CHP facilities as a guide, it would take close to 40% of the total annual natural gas consumption in the commercial and industrial sectors in California to reach the 4,000 MW of CHP in the Scoping Plan. Since many natural gas uses are at sites too small for CHP applications or have usage patterns that are not conducive to cost-effective CHP operations, this appears to be a very aggressive target. The ARB should carefully review the differences between the 4,000 MW CHP target in the Scoping Plan based on an earlier market penetration study and the reduced target proposed in the ICF International report recently prepared for the California Energy Commission.[5]

The ARB should also work with the California Independent System Operator on reasonable grid limitations for CHP. Such an analysis is particularly important in light of the State's other goals for renewables, distributed generation, and energy efficiency as discussed in further detail above. Additionally, the ARB should coordinate with local air districts to better understand the current limitations to obtaining emissions credits. The South Coast Air Quality Management District currently has a moratorium on issuing permits for new sources; therefore, installing new fossil fueled CHP will be difficult until this issue is resolved. These restrictions should be accounted for in any assessment of opportunities in the market.

In addition to assessing the technical potential for CHP, the ARB should also get a better understanding of the economic market potential for CHP. Some CHP systems may be so expensive to build that other forms of GHG reduction should be pursued instead. This important tradeoff is missed if only the technical potential of CHP is evaluated. An assessment of economic potential is particularly important in view of the contraction of commercial and industrial activity due to the current downturn in the California and national economies.

D. CHP Facilities Should Be Treated As Single Point Sources for Cap-and-Trade Compliance on the Same Basis as Other Facilities

At the September 9th workshop, staff presented two options for including CHP facilities in the California cap-and-trade program. The first option would treat the entire facility – i.e., the on-

[5] ICF International, Inc., Industrial Sector Combined Heat and Power Export Market Potential, PIER Program Interim Project Report, CEC-500-2009-010, May 2009 (available at http://www.energy.ca.gov/2009publications/CEC-500-2009-010/CEC-500-2009-010.PDF).

site industrial processes and the electricity generation – as a single point source for cap-and-trade compliance. Under this approach, the facility's total emissions would be subject to cap-and-trade regulation as one point source, and the facility's owner/operator would be required to retire allowances for the whole facility's emissions, including those related to the on-site industrial processes as well as those related to electricity generation. The second option would divide the CHP facility into an electricity production facility and an industrial facility, and the two "separate" facilities would be subject to the cap-and-trade rules for the electricity sector and the industrial sector, respectively.

SCE supports treating CHP facilities as single point sources because this option prevents potential gaming and is simpler to administer based on total reported emissions at any given facility. The ARB has not clarified whether the 25,000 $MTCO_2e$ per year threshold for participation in the cap-and-trade program would apply separately to the electricity production and industrial facilities under the second option. However, if the threshold was applied separately this would increase the threshold for the CHP facilities' participation in the California cap-and-trade program to 50,000 $MTCO_2e$ per year, twice the emissions threshold used for other facilities. There is no basis for such inequitable treatment, especially given that the majority of CHP facilities will likely be under the 25,000 $MTCO_2e$ per year threshold. Accordingly, SCE recommends that the ARB treat CHP facilities as single point sources for cap-and-trade compliance and not create separate emissions thresholds for the electricity production and industrial portions of CHP facilities.[6]

Staff also discussed a potential exemption from the cap-and-trade program for certain "but for" CHP facilities. Staff proposed that if a facility exceeds the 25,000 $MTCO_2e$ threshold for participation in the cap-and-trade program only because it operates a CHP unit, then the facility would be exempt from having a cap-and-trade compliance obligation. Staff indicated that another alternative would be not to exempt such "but for" facilities, but to set-aside free allowances to cover the CHP emissions that trigger cap-and-trade participation.

SCE opposes a "but-for" exemption or setting aside free allowances for "but for" facilities. The cost of compliance with the State's AB 32 program (and all other regulatory requirements) needs to be a part of the economic decision by a facility owner to install a CHP system. CHP facilities should not receive special carve outs. If CHP resources are truly efficient and cost-effective contributors to GHG emissions abatement, they will receive adequate compensation for their cap-and-trade compliance costs in the electricity market. CHP resources should not get a windfall by receiving market prices which include GHG compliance costs while at the same time being exempted from any cap-and-trade obligations. SCE therefore recommends that the ARB set a uniform cap-and-trade threshold that applies to all point sources regardless of the underlying technology and then apply it consistently to all points of regulation, without offering any exemptions.

[6] The reporting requirements do not change under either option, and the facility's reported emissions, even if split up between thermal and electricity applications, can be easily combined to determine whether the facility needs to participate in the cap-and-trade program, and if so, how many allowances the facility's owner/operator needs to retire.

E. CHP Facilities Should Not Receive GHG Allowances as Retail Providers

At the September 9th workshop, staff suggested that GHG allowances should be allocated to CHP facilities on three different bases, namely, (1) as a retail provider for the electricity consumed on-site, (2) as a first deliverer for the electricity sold to the grid, and (3) for its thermal component as any other industrial source. SCE supports treating CHP facilities like any other electricity generating facilities or industrial sources for the purposes of allocating allowances for the electricity sold to the grid and the thermal component with the caveat that CHP facilities who do not have cap-and-trade compliance obligations should not receive free allowances. However, SCE strongly disagrees with treating the on-site electricity consumption at a CHP facility as a retail provider function warranting free allowance allocation.

CHP facilities are not retail providers simply because they self-generate. CHP is no different than other self-generation options such as roof-top solar photovoltaic installations or micro-turbine-based distributed generation and should be treated similarly. GHG allowances should be allocated to retail providers that face economic harm when a cap-and-trade system is imposed through an increase in their procurement costs and that can use such free allowances to offset this economic harm for their customers without receiving windfall profits. However, new CHP systems and other self-generation technologies represent an economic choice that the owner of a facility makes by taking into account all of the costs and benefits. They will not suffer economic harm as a result of GHG regulation. Accordingly, CHP facilities should not receive allowances as retail providers.

Finally, the ARB should ensure that its protocols for assigning GHG responsibility do not interfere with the incentives that utilities have to encourage the development of CHP facilities. In particular, if electric utilities are required to procure electricity from CHP facilities as a means to encourage achievement of the ARB's GHG target for the CHP sector, then the incremental GHG reductions should be attributed to the electricity sector.

SCE thanks the ARB for considering these comments regarding the September 9, 2009 workshop on CHP and cap-and-trade. To summarize SCE's comments:

- The ARB should only support efficient CHP and should adopt performance standards that will provide meaningful GHG reductions;
- The ARB should consider competing State policy objectives and the reliable operation of the electricity grid in developing CHP policy;
- The ARB should coordinate with other agencies on the technical and economic market potential for CHP;
- CHP facilities should be treated as single point sources for cap-and-trade compliance on the same basis as other facilities; and
- CHP facilities should not receive GHG allowances as retail providers.

Very truly yours,

/s/ Cathy A. Karlstad

Cathy A. Karlstad

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