CCDC

CALIFORNIA CLEAN DG COALITION

October 18, 2013

Honorable Mary D. Nichols, Chair

Steven Cliff, Ph.D.
Chief, Climate Change Program Evaluation Branch

Clerk of the Board
Air Resources Board
1001 I Street
Sacramento, CA 95814

California Clean DG Coalition ("CCDC") appreciates the California Air Resources Board's ("ARB") ongoing efforts to revise the Cap-and-Trade Regulation. CCDC previously provided comments regarding proposed changes to the Cap-and-Trade Regulation following the May 1 and July 18, 2013 Staff Workshops.

To date, ARB has not addressed CCDC's proposal that eligibility for the transitional assistance for Universities and public service facilities that have taken early actions be expanded to include other institutional and private entities, whether serving public or private buildings, who have demonstrated similar early action and leadership behavior. Similarly, ARB has not addressed the important benchmark issues CCDC has raised, or CCDC's related concern that CHP will bear an economic penalty under Cap-and-Trade, which is contrary to policies that recognize CHP's benefits, including the potential to reduce GHG emissions, and sends the wrong market signal to existing and prospective CHP adopters.

CCDC has attached its prior comments regarding transitional assistance and benchmark issues to this letter, and requests that ARB consider and address them in any revisions to the Cap-and-Trade Regulation. We look forward to working with ARB to resolve these important issues.

Sincerely,

James Halloran
Chairman CCDC

Attachments

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CCDC

California Clean DG Coalition

Comments from the California Clean DG Coalition Regarding May 1 ARB Staff Workshop on CHP and Cap & Trade

The California Clean DG Coalition ("CCDC") appreciates the opportunity to provide these comments regarding the California Air Resources Board's ("ARB") Staff Workshop on May 1, 2013 to discuss adjustments to the Cap and Trade Program for Universities and Combined Heat and Power ("CHP"). CCDC is an ad hoc group interested in promoting the ability of distributed generation ("DG") system manufacturers, distributors, marketers and investors, and electric customers, to deploy DG. Its members represent a variety of DG technologies including combined heat and power ("CHP"), renewables, gas turbines, microturbines, reciprocating engines, and storage. CCDC is currently comprised of Capstone Turbine Corporation, Caterpillar, Inc., Cummins Inc., DE Solutions, Inc., GE Energy, Holt of California, NRG Energy, Penn Power Systems, Peterson Power Systems, Recycled Energy Development, SDP Energy, Solar Turbines, Inc., and Tecogen, Inc.

ARB proposes transitional assistance for Universities that have taken early actions and provided leadership to reduce GHG emissions though investments in efficiency and renewable energy. For Universities that are subject to the Cap and Trade Program, most or all of which have an operational CHP system, allowances equal to their three year historical fuel use baseline (excluding electricity exports) would be provided for 2013 and decline in proportion to the cap through 2020. CCDC supports this action and recommends that eligibility be broadened to include other institutional and private entities who have demonstrated similar early action and leadership behavior.

ARB staff also proposes that the Cap and Trade first compliance period threshold for entities with CHP should be based on either steam emissions or electricity emissions exceeding 25,000 $MTCO_2e$, which keeps entities from triggering Cap and Trade only because of efficient CHP. We agree with the proposed methodology. However, CCDC recommends that the offsetting boiler efficiency assumption be changed from 85% to 80% which is a more realistic value for present day facilities serving large steam loads. We also recommend that the words "useful heat" be substituted for "steam," as steam is not always the heat transfer medium in a CHP system.

The "but for" CHP patch applies to an estimated 11 entities and does not go beyond the 1st compliance period. ARB stated that in the 2nd compliance period, all CHP facilities, whether through Cap and Trade or through a carbon adder in the price of natural gas, will be on the same economic playing field and Cap and Trade will improve the incentive for CHP. CCDC disagrees with this statement. ARB recognizes that efficient CHP displaces less efficient wholesale fossil generation sources from the California grid. The ARB emissions benchmark is

0.431 $MTCO_2e/MWh$.[1] However, because the grid is not comprised of 100% natural gas power, the true economic linkage between the carbon cost adder in natural gas and the carbon cost adder in electricity does not exist.

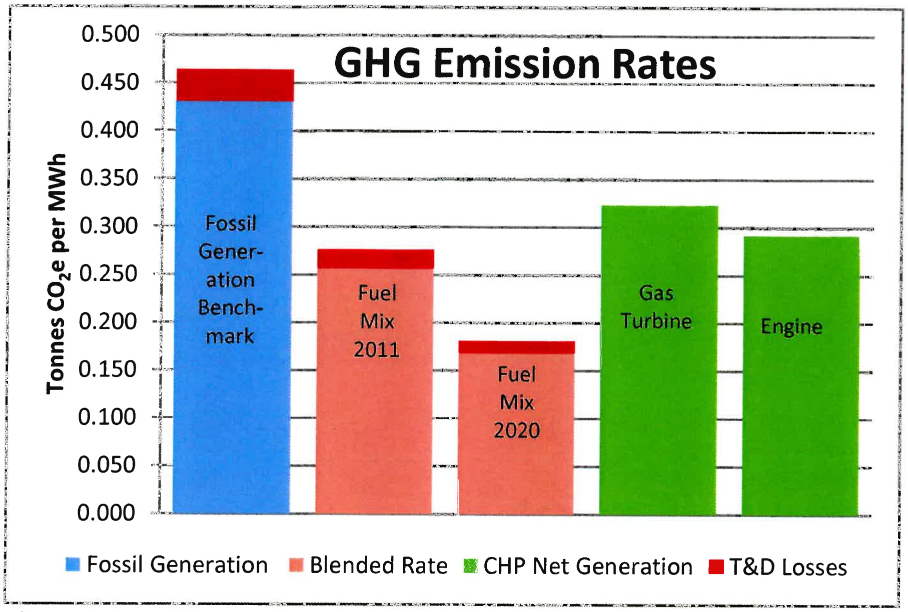
According to the California Energy Commission, fossil power generation comprised 43.8% of the State's energy mix in 2011.[2] And of the 13.7% unspecified fuel sources, we assumed that ½ was natural gas and the other ½ was large hydro. As shown in the figure to the right, this mix corresponds to a blended delivered emission rate of 0.256 $MTCO_2e/MWh$, 41% less than the true benchmark. Based on an estimate of the fuel mix in 2020, the blended emission rate is 61% less than the true benchmark.

CA Fuel Mix	2011 CEC	2020 Estimate	Emission Benchmark $MTCO_2/MWh$	Electric Price to CO2 Benefit Ratio
Natural Gas	35.6%	34.0%	0.431	
Nuclear	15.3%	15.0%		
Eligible Renewables	14.2%	33.0%		
Coal	8.2%	0.0%	0.892	
Large Hydro	13.0%	13.0%		
Unspecified	13.7%	10.0%		
1/2 Natural Gas	6.9%	5.0%	0.431	
1/2 Large Hydro	6.9%	5.0%		
Total	100.0%	100.0%		
Fossil Total	50.7%	39.0%		
Natural Gas Total	42.5%	39.0%		
CA Fuel Mix 2011			0.256	59%
CA Fuel Mix 2020			0.168	39%

The chart below compares the emission impact of these various emission weighting approaches against two typical CHP systems. As shown, CHP's GHG emission benefit goes from a positive when compared against the ARB electricity benchmark to a negative when compared against the whole fuel mix comprising California's wholesale electric grid.

[1] This corresponds with a 42% efficient natural gas plant.

[2] http://energyalmanac.ca.gov/electricity/total_system_power.html; unspecified power are generally out of state short term power purchases from plants that do not have a contract with a California utility. Northwest spot purchases are served by surplus hydro and gas-fired power plants. The Southwest spot market purchases are primarily combined cycle power.



The table below compares the economic value of CHP to the State at allowance costs of $10 and $40 per tonne against the economic cost to CHP users when allowance costs for fossil generation are blended in to the electricity price along with non-fossil sources. As shown, the difference between the cost and the value exceeds 1.0 cent/kWh in 2020 if allowance costs hit $40/tonne.

	Value $/kWh		2011 Cost $/kWh		2020 Cost $/kWh		Cost-Value 2020	
CO2 Cost $/tonne	Turbine	Engine	Turbine	Engine	Turbine	Engine	Turbine $/kWh	Engine $/kWh
10	$0.0014	$0.0017	$0.0005	$0.0002	$0.0014	$0.0011	$0.0028	$0.0028
40	$0.0056	$0.0069	$0.0019	$0.0006	$0.0057	$0.0044	$0.0113	$0.0113

Forcing CHP to absorb an economic penalty because of Cap and Trade sends the wrong market signal to existing CHP adopters who expected a positive benefit from AB 32 and to prospective CHP adopters who will question the "green" in CHP and face uncertain economic consequences as the future price for allowances are unknown. CCDC views this as an inadvertent yet fundamental flaw in the treatment of CHP in California's Cap and Trade Program. Many prospective CHP projects are now stalled in the development pipeline due to this dilemma. If this problem is not corrected, we are concerned that ARB's reliance on CHP as a GHG reduction measure, including estimates for future CHP, will be seriously compromised. In addition, CHP provides additional environmental, efficiency, reliability, economic and jobs benefits that will be lost if CHP adopters risk penalties for their investment. These benefits are reason enough to ensure CHP investment is encouraged.

The State needs to true-up the effective carbon price adder paid for on-site CHP natural gas to mirror CHP's CO_2 benefit relative to CARB's electric benchmark. Possible solutions to this important issue could include the following:

- Payments to CHP owners from Cap and Trade Auction proceeds or the Natural Gas Allowance Revenue Fund
- Issuance of Allowances for CHP fuel

CCDC urges CARB and, as appropriate the CPUC, to fix this inequity as soon as possible so that CHP can live up to its GHG mitigation potential.

Sincerely,

James Halloran
Chairman CCDC

CCDC
California Clean DG Coalition

August 1, 2013

Honorable Mary D. Nichols, Chair

Steven Cliff, Ph.D
Chief, Climate Change Program Evaluation Branch

California Air Resources Board
1001 I Street
Sacramento, CA 95814

Re: Comments on July 18 Workshop Regarding Proposed Changes to the California Greenhouse Gas Cap-and-Trade Regulation

Dear Chair Nichols and Dr. Cliff:

The California Clean DG Coalition ("CCDC") appreciates the opportunity to provide these comments regarding the California Air Resources Board's ("ARB") Staff Workshop on July 18, 2013 regarding the "discussion draft" of proposed changes to the Cap-and-Trade Regulation. CCDC is an ad hoc group interested in promoting the ability of distributed generation ("DG") system manufacturers, distributors, marketers and investors, and electric customers, to deploy DG. Its members represent a variety of DG technologies including combined heat and power ("CHP"), renewables, gas turbines, microturbines, reciprocating engines, and storage. CCDC is currently comprised of Capstone Turbine Corporation, Caterpillar, Inc., Cummins Inc., DE Solutions, Inc., GE Energy, Holt of California, NRG Thermal, Penn Power Systems, Peterson Power Systems, Recycled Energy Development, Solar Turbines, Inc., and Tecogen, Inc.

CCDC sees value in some of the revisions relating to CHP, however, CCDC remains concerned that unless important benchmark issues are addressed, CHP will be forced to bear an economic penalty, which is contrary to longstanding policy supporting CHP, and diminishes the value of CHP as a GHG emissions reduction energy efficiency measure, as defined by ARB in the AB 32 Scoping Plan. CCDC urges ARB to modify the draft revisions to the Cap-and-Trade Regulation as proposed herein to maximize CHP's GHG emissions reduction potential for California.[1] All references to CHP in these comments include CHP that is owned by the customer or by a third party.

Resolution 12-33

ARB Resolution 12-33 called for revisions to the Cap-and-Trade program to recognize the GHG emission reduction value and other benefits of CHP. Resolution 12-33 specifically provides:

> WHEREAS, the Cap-and-Trade Program should **reward existing and incentivize new** efficient distributed electricity generation technologies, such as [CHP]; ...

(Emphasis added.)

Among other things, Resolution 12-33 called for an allocation of allowances to universities and a transitional exemption from the Cap-and-Trade Program for "but for" CHP. The discussion draft revisions to the Cap-and-Trade Regulation include the transition relief for Universities. As proposed by staff, that relief has appropriately been expanded to also include public service facilities. The discussion draft revisions also purport to address "but for" facilities. The assumptions about the lack of a need for further relief after the first compliance are erroneous, which already is having a chilling effect on CHP investment planning.

The important direction provided in Resolution 12-33 to reward existing and incentivize new efficient CHP should overlay any and all CHP-related revisions to the Cap-and-Trade Regulation. It clearly supports the revisions proposed herein.

Allowances for Universities and Public Service Facilities

Staff proposes transitional assistance for Universities and public service facilities subject to the Cap-and-Trade Program, many of which have operational systems, through allowances equal to their three-year historical fuel use baseline (excluding electricity exports), beginning in 2013 and declining in proportion to the cap through 2020. CCDC supports this action, including the expansion to include public service facilities. CCDC continues to recommend that eligibility for this transitional assistance be broadened to include other institutional and private entities, whether serving public or private buildings, who have demonstrated similar early action and leadership behavior.

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1 Additional detail is provided in the CCDC Comments Regarding May 1 ARB Staff Workshop in CHP and Cap-and-Trade. That letter is incorporated herein by reference.

The CHP "But For" Exemption

ARB staff proposes a limited exemption for CHP during the first compliance period so long as neither the emissions associated with the production of Qualified Thermal Output nor the remaining facility emissions exceed 25,000 $MTCO_2e$ (new Section 95852(j).) A facility must apply, under penalty of perjury, to ARB for the exemption.

CCDC is concerned that the requirement to apply for the exemption under penalty of perjury adds an undue administrative burden, without a corresponding benefit. CCDC suggests that a more efficient approach would be for ARB to notify eligible facilities, which could then provide necessary documentation of emissions levels, without having to go through a formal application process.

Cap-and-Trade Does Not Create a Level Playing Field for CHP

ARB has indicated that beginning with the second compliance period, all CHP facilities, whether as covered entities or through a carbon adder in the price of natural gas, will be on the same economic playing field and that Cap-and-Trade will actually provide an incentive for efficient CHP. CCDC continues to disagree with this concept, for the detailed reasons provided in its comments on the May 1 Workshop. CCDC reiterates its recommendation the State true-up the effective carbon price adder paid for on-site CHP natural gas to mirror CHP's CO_2 benefit relative to CARB's electric benchmark. Possible solutions to this critical issue could include the following:

- Payments to CHP owners from Cap-and-Trade Auction proceeds or the Natural Gas Allowance Revenue Fund
- A discount to the carbon price in natural gas to CHP owners and allowances to CHP owners in Cap-and-Trade

Conclusion

CCDC appreciates ARB's consideration of these critical issues for CHP. We look forward to working with ARB as this process moves forward.

Sincerely,

James P. Halloran

James Halloran
Chair

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