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**CBEA Comments on the Joint Agency Report Charting a Path to a
100 Percent Clean Energy Future**

Additional submitted attachment is included below.



September 15, 2020

California Energy Commission
Docket Unit, MS-4
Docket No. 19-SB-100
1516 Ninth Street
Sacramento, CA 95814-5512

Re: Comments of the California Biomass Energy Alliance on the Joint Agency Report: Charting a Path to a 100 Percent Clean Energy Future

The California Biomass Energy Alliance (CBEA) is pleased to submit the following comments on the September 2, 2020, SB 100 Joint Agency Workshop presenting the SB 100 preliminary modeling results. CBEA supported SB 100 and supports the process of moving the state to a zero-carbon future. CBEA wants to emphasize that while the IOUs are easily meeting their 2020 renewable mandates, getting to the 2045 targets will take a considerably more concerted effort, both with regards to other segments of the electricity market, and other sectors of the economy, including transportation and buildings.

The California Biomass Energy Alliance is the trade organization of California's biomass energy industry. CBEA was created more than 20 years ago with a charter to promote biomass energy as a means to reach the environmental and economic goals of California. On behalf of its members, we have worked diligently as the leading advocate of the solid fuel biomass power industry through California's energy crisis, the introduction and implementation of renewable portfolio standards and waste reduction mandates, through to today's carbon-constrained world governed by AB 32's and SB 100's greenhouse-gas emissions-reduction requirements.

California is currently in the midst of a climate-change-fueled disaster, with wildfires burning across the state and the heart of the fire season still ahead of us. The CBEA joins Governor Newsom in his call Friday to do everything possible to achieve a greenhouse-gas-free energy system for the state as quickly as possible. Biomass generators provide schedulable and highly reliable renewable baseload power that can be used to back fossil-fired generators out of the system without the need for additional storage and/or reliability resources. Biomass also serves to backup intermittent wind and solar resources and can be used to charge storage systems when there is surplus renewable power on the grid.

In addition to representing a source of reliable baseload renewable power, biomass has an additional enormous benefit that is unique among clean energy resources in that it contributes to the reduction of wildfire risk in the state, and thus reduces the massive amount of

greenhouse-gas emissions that wildfires produce in addition to their other highly negative impacts. Thinning and prescribed burns limit both the amount of fire ignitions, and the extent of fire damage when ignitions do occur. Diverting thinning residues from burning in the forest to use as fuel in biomass power plants greatly reduces the air pollution associated with burn piles and prescribed fires, and in addition reduces the risk of pile burns and prescribed burns inadvertently sparking offsite uncontrolled wildfires.

Cost of Biomass in the Resolve Model

One of the critical weaknesses of the Resolve model is that it lacks proper supply curves for the candidate resources in the model's database. Instead, each candidate resource is characterized by a singular cost figure that applies to all procurement of the resource until a physical constraint is reached. This is not how the marketplace works. In the real world each candidate resource has a supply curve in which the more units of a particular resource are procured, the greater the cost of the next unit is. This is basic economics. The problem from a modeling standpoint is that with a linear programming model like Resolve that lacks supply curves, the model will choose only one candidate resource from a given category, like baseload renewables, even if an alternative resource is available at only slightly greater cost in the model's database. Supply curves can be modeled in a linear programming platform, but that has not been done in the Resolve model.

The Resolve model's database has a cost for new biomass generating capacity of slightly greater than 12 cents per kwh. Although there has not been any new biomass development in California for some time, it is the opinion of our membership, which comprises most of the biomass generating capacity in the state, that this cost is on the high side. There are certainly opportunities to develop new biomass generating facilities in the state for less than this. Indeed, the first group of biomass facilities that would be likely to be developed, should new biomass development happen at all, would be the refurbishment and restarting of a group of approximately ten shuttered facilities in the state. The cost of putting these shuttered facilities into service will be considerably lower than the cost of greenfield development, which is the singular cost of biomass in the model's database. The result is that many potentially attractive opportunities for biomass are overlooked.

Inherent limitations in the Resolve model, as highlighted by the simplistic treatment of the cost of new biomass development, make it virtually impossible for the results of a modeling exercise like the one currently being pursued in the SB 100 Joint Agency Study to include new biomass generating capacity in the optimal solution. This needs to be corrected.

No Combustion Scenario

At the November 18, 2019, interagency SB 100 workshop, CARB Staff gave a report on options for defining eligible carbon-free generating resources under SB 100. CARB announced that they would be considering two scenarios in their analysis of a carbon-free future. The first scenario was based on conventional definitions of carbon-free resources. The second scenario was entitled “no combustion,” and differed from the first scenario essentially by removing biomass and biogas from the list of eligible carbon-free resources.

CBEA, in our December 2, 2019, comments on the interagency workshop strongly objected to the inclusion of Resource Scenario 2 in the study plan. It runs counter to California statute, which defines biomass and biogas as RPS-eligible resources, and it lacks any legitimate basis in science or policy. Moreover, since a substantial fraction of the biomass fuel used in California would otherwise be open burned in the absence of beneficial use of the material as fuel, excluding biomass from the list of carbon-free fuels would not only **not** reduce the amount of combustion of biomass materials taking place in California, it would substitute dirty open burning of these materials for clean combustion in a controlled boiler. There is absolutely no scientific basis for excluding energy resources that utilize combustion. The question should be whether a given energy source is net carbon-free, not whether combustion has been used in the course of its generation. Combustion is a tool, like any other energy conversion process. There is no reason to vilify it.

In fact, the results presented at the September 2, 2020, workshop show that the study includes a No Combustion scenario, which is described as “no combustion candidate resources; retire combustion resources.” We strongly object. We would not object to including a fossil fuel phaseout scenario, because such a scenario has a scientific basis as well as a policy basis, the elimination of fossil carbon emissions. This is the ultimate objective behind SB 100, which is the ultimate reason for conducting this study. However, neither biomass nor biogas should be included in the scenario.

Biomass Treatment if Detailed Carbon Modeling is Included in the Study

The greenhouse-gas performance of biomass power generation is a complicated function. This is a result of the fact that the growth and disposition of biomass materials are a key component of the active global carbon cycle. The SB 100 Joint Agency study, as discussed at the September 2, 2020, workshop does not attempt to perform detailed lifecycle carbon modeling for biomass or biogas generators, but there are efforts in progress to perform such modeling, including in the RPS proceeding at the California PUC, and presumably at some point the results of such studies will appear.

In anticipation of such information becoming available, the CBEA makes the following proposal. Many of the analyses of the greenhouse-gas implications of biomass energy produced to date show that many of the possible trajectories of biomass energy use produce negative biogenic

carbon footprints. This is typically a result of two factors. First, many biomass energy trajectories promote improved forest management in California, for which an ancillary benefit is reducing the risks and extent of destructive forest fires in the state. In the long term this keeps more carbon on the ground than in current practice. California's wildfires, which are setting records as these comments are being prepared, produce more net carbon emissions than the state's use of fossil fuels. This translates into negative emissions in lifecycle carbon analyses.

Second, many biomass energy trajectories shift the mixture of carbon gases involved in the natural recycling of carbon to the atmosphere that is part of the active carbon cycle away from a mixture containing significant amounts of methane towards a mix that is nearly exclusively carbon dioxide. Methane is a much more potent greenhouse gas in the short term than carbon dioxide. Thus, biomass energy production reduces the carbon footprint of the recycling of biomass carbon compared to most of the conventional alternatives by eliminating emissions of the potent short-term greenhouse gas methane.

Our proposal is that if and when lifecycle carbon modeling of biomass energy trajectories becomes available, biomass generators that are producing a negative carbon footprint should be rewarded for this benefit in the form of greenhouse-gas credits that are tradeable in the state's Cap-and-Trade program. We assume that generators who are shown to have a positive carbon footprint will be required to procure sufficient carbon permits to offset their emissions. We are proposing that all generators be held to the same standards based on their lifecycle greenhouse-gas performance.

Thank you for your kind attention and consideration of these comments.

Sincerely,
California Biomass Energy Alliance



Julee Malinowski Ball, Executive Director