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**CBEA Comments on SB 100 Joint Agency Report 12042020 Draft
Report Workshop**

Additional submitted attachment is included below.



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California Energy Commission
Docket Office
1516 Ninth Street
Sacramento, CA 95814

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Docket #: 19-SB 100
Re: California Biomass Energy Alliance Comments on SB 100 Joint Agency Report
12/04/2020 Draft Report Workshop

Dear Commissioners and Board Members:

The California Biomass Energy Alliance would like to offer the following comments on the draft SB 100 Report. We are still working on understanding the modeling and may have additional comments although most likely past the 12/18 comment deadline. Our comments at this time are focused on our continued concern for including a no-combustion study scenario that includes renewable biomass.

The draft report correctly notes that SB 100 does not preclude combustion resources from the resource portfolio and CBEA does not oppose studying pathways in which combustion resources are expressly retired. However, lumping renewable biomass in the same category, as we have noted in previous comments, is illogical and dangerous. You have responded to these comments by noting that further analysis “could identify public health benefits, particularly in disadvantaged communities where a disproportionate amount of combustion resources are currently located.” However, the following sentence to this statement should note that study after study has already demonstrated bioenergy **reduces** emissions over the alternate fates for the waste material all bioenergy plants use as fuel. Open burning and decaying in landfills are the least preferable alternatives and most harmful to public health.

Although bioenergy facilities release emissions that impact air quality, the facilities are dramatic improvements over the emissions produced by open burning and wildfires. Further, wildfires tend to occur in late Summer when air quality is already degraded. Bioenergy produces much lower rates of emissions over the course of an entire year. Some examples of studies that evaluate the air quality improvements associated with bioenergy production include:

- The Stockholm Environmental Institute compared the GHG and air pollutant emissions for 15 different fates for forest biomass across six categories: solid waste disposal, soil amendment, residential energy (e.g., stoves), industrial energy, industrial feedstock, and liquid fuel (Lee et al. 2010) and their findings included:
 - Emissions from pre-processing of residues, including the gathering, chipping, and transporting residues make up less than 4% of overall emissions from all operations.

- Air pollutant emissions from burning biomass at industrial facilities (with emissions controls) result in CO and PM2.5 emissions that are much lower than emissions from uncontrolled burning on-site.
- Carbon dioxide, methane, and particulate emissions from biomass-combustion boilers were 60%, 3%, and 41% less, respectively, than the rate from pile burning in a recent study in Montana (Jones et al. 2010).

In addition to the adverse impacts of pile burning on air quality, the smoke from wildfires often mixes with atmospheric conditions downwind to create surface ozone (Pfister et al. 2008). During and after fires throughout California in 2007, the ozone produced exceeded public health standards over the course of 100 days (Pfister et al. 2008). Particulate matter also exceeded the background level by four times downwind of fires in California (Wu et al. 2006). Removing forest biomass to promote forest health can help reduce the emissions from wildfires.

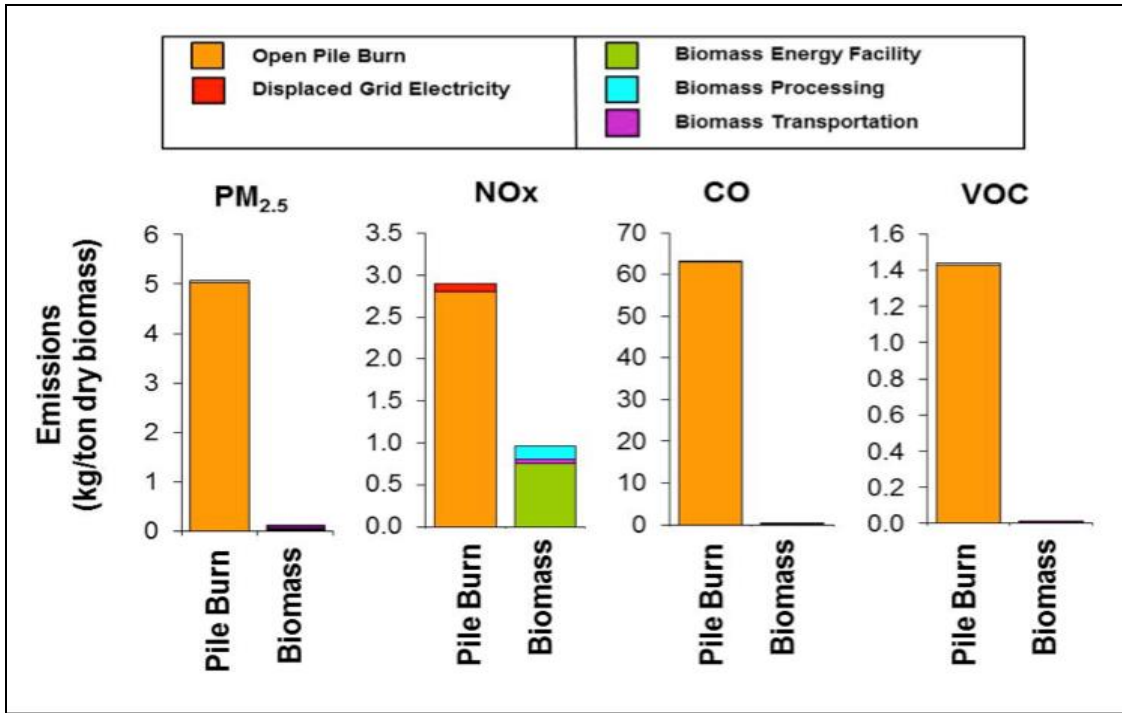
Consider the following table, which compares the air pollution from a large biomass power plant with the pollution that would be produced if the agricultural waste biomass were instead disposed of by open-burning.

Pollutant	Open-Burn Emissions, Tons/Year	Total Power Generation Emissions, Tons/Year
NO _x	583	177
CO	5,139	45
SO ₂	28	5
PM10	825	28
THC	876	6

Ref (1). Power generation emissions include all emissions associated with collection and transportation of the biomass materials, and all handling machinery emissions at the power plant, plus the boiler emissions. Also see references (3) and (4).

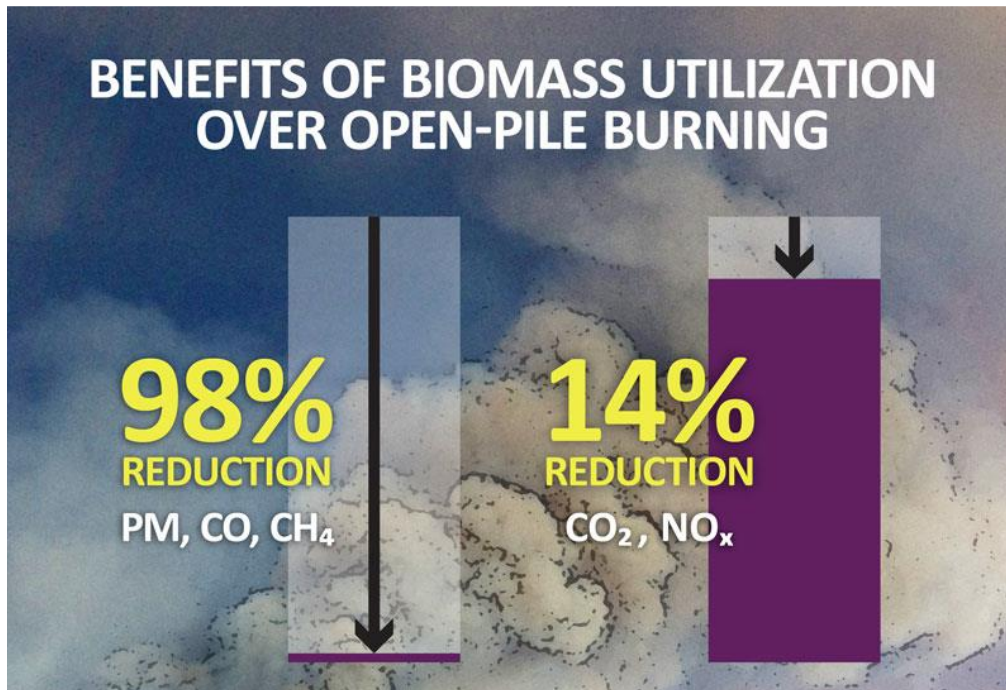
From the table, it is evident that open burning of biomass, such as is done to dispose of crop residues and forest thinnings, produces 3 to 100 times more emissions of conventional air pollutants than controlled combustion in a biomass power plant.

These benefits have been conclusively demonstrated in numerous other comprehensive lifecycle assessments (Springsteen et al. 2015, Springsteen et al. 2011, Lee et al. 2010, Jones et al. 2010, Moyer and Pont 1997). Reductions result from a combination of: (1) utilization of wastes in power plants with efficient emissions control technology; (2) negligible emissions and energy requirements from well controlled and efficient processing and transport equipment and engines; and (3) production of renewable energy from wastes that are the product of harvesting that is unrelated to any potential biomass value and that replace nonrenewable fossil fuel-generated energy.



Source: CAPCOA Biomass Policy Statement and Placer County Air District

And, again, the California’s Forest Carbon Plan



Source: California Forest Carbon Plan, Figure 19, page 135

In addition to these overall emissions reductions, California’s biomass fleet of facilities use the same general operation methodologies and employ various technologies to reduce individual plant emissions from the processing of biomass fuel. For example, NO_x emissions are controlled by combustion modifications and add-on controls such as selective catalytic and non-catalytic

reduction. Typically, these control systems are successful in simultaneously attaining low NOx and CO emission levels. Particulate matter control technologies include electrostatic precipitators, fabric filter/baghouses, wet scrubbers, and mechanical separators. No matter the specific emissions control technology, each biomass facility is operating using Best Available Control Technology (BACT).

Oversight of biomass plant emissions is covered by the local air pollution control districts who are also the issuing authority for plant operating permits (Title V). The Title V Permit requires the installation of Continuous Emissions Monitor (CEMs) for O2, CO, NOx and Opacity. Continuously monitoring these critical parameters ensures consistent and efficient combustion in the boilers. Also included are fuel quality requirements, notifications requirements, regular quality assurance and emissions monitoring reports to the local air district, annual certification of compliance and regular inspections by the local air district. In addition to local air district permits, most biomass facilities are covered by all of the following programs:

• New Source Performance Standards (NSPS (40 CFR 60))
• Prevention of Significant Deterioration (PSD) / New Source Review (NSR)
• Boiler Maximum Achievable Control Technology (MACT) (40 CFR 63, Subpart DDDDD)
• Risk Management Plan (RMP) (triggered for anhydrous ammonia)
• California Accidental Release Prevention (CalARP) (anhydrous ammonia)
• AB 32 (GHG Reporting)
• AB 2588 (Toxic Hot Spots (Hazardous Air Pollutants))

Both the local air district and the US EPA have permitting authority over significant changes in equipment or methods of operation.

The environmental regulatory oversight for biomass power plants is extensive and impacts all aspects of facility operations. Air emissions are no exception.

Your no-combustion point is weakened when you lump biomass in with fossil combustion without referencing these studies and the co-benefits of bioenergy that are already well known by California in other California State Agencies. This could be remedied in the Draft Report by 1) citing the work that has already been done and suggesting where additional research may be needed, if any, or 2) limit this study scenario to fossil combustion only where the true health impacts lie.

Sincerely,
California Biomass Energy Alliance



Julee Malinowski Ball, Executive Director