September 22, 2021

Ms. Rajinder Sahota, Deputy Director
California Air Resources Board
1001 I Street
Sacramento, CA 95814

Re: Comments on Short-Lived Climate Pollutants in the 2022 Climate Change Scoping Plan

Dear Ms. Sahota:

The Bioenergy Association of California (BAC) submits these comments on the Short-Lived Climate Pollutant presentations on September 8. BAC strongly supports the focus on SLCP reductions as the biggest opportunity to bend the warming curve right away. As CARB staff noted during the workshop, however, we are not doing enough to reduce SLCP emissions in California and need to accelerate our efforts to reduce SLCPs. To do so, BAC urges CARB to:

- Increase the focus on SLCP reductions across all sectors, including transportation, electricity, and Natural and Working Lands;
- Prioritize diesel reductions to reduce black carbon emissions from transportation and electricity;
- Include human caused fires in the assessment of anthropogenic black carbon;
- Identify strategies to reduce black carbon emissions from forest, agricultural, and urban biomass waste; and
- Consider whether the state's renewable power (RPS) and other climate mitigation programs should be carbon intensity rather than volume based.

BAC represents more than 80 local governments, public agencies, private companies, and non-profits that are working to convert organic waste to energy. BAC's public sector members include environmental, air quality, waste and wastewater agencies, research institutions, publicly owned utilities, community and environmental groups. BAC's private sector members include energy and technology companies, developers, waste industry, agriculture and food processing, investor-owned utilities, investors, and others.

BAC's specific comments on the September 8 presentations on SLCPs are below.

1. **SLCP Reductions Should be the Highest Priority Across All Sectors in the 2022 Scoping Plan.**

Governor Newsom has called on the state to step up its climate actions and to do more to make a difference right away. As the Governor stated recently, "We are in a climate damn emergency. . . across the entire spectrum, our climate goals are inadequate. We have to step up our game. As we lead the nation in low carbon green growth, we'll have to fast track our efforts."[1]

Climate experts around the state echoed this urgency in a recent paper that states that "decarbonization measures, while essential, will take two to three decades to have an impact on the steeply warming curve. The need for speed is great and it is a race against time."[2] Climate experts call for "drastic" reductions in SLCP emissions, which can benefit the climate right away, including eliminating the use of diesel and reductions in methane and black carbon from organic waste.[3] They also call explicitly for accelerating the timeline for meeting the requirements of SB 1383, which requires a 40 percent reduction in methane and a 50 percent reduction in anthropogenic black carbon by 2030.[4]

Climate science is clear that the only measures that reduce warming right away and can do so at large scale are the measures to reduce SLCP emissions.[5] Those measures also have enormous co-benefits for public health and safety by reducing methane, black carbon, smoke, wildfire, toxic air contaminants, water pollution, and other impacts of organic waste disposal and fires, both wild and controlled.[6]

BAC urges CARB, therefore, to prioritize SLCP reductions in the scenarios planning and all other parts of the 2022 Climate Change Scoping Plan. To focus more on SLCP reductions – as the last lever we have left to avoid catastrophic climate change[7] – CARB should make SLCP Reductions the first and highest focus of the 2022 Climate Change Scoping Plan.

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[1] https://calmatters.org/environment/2020/09/california-governor-climate-emergency/.

[2] Kammen, Ramanthan, Matlock, et al, *"Accelerating the Timeline for Climate Action in California,"* submitted to Environmental Research Letters, 2021. Available at: https://arxiv.org/abs/2103.07801 [arxiv.org].

[3] Id. at page 4.

[4] Id. at page 4.

[5] Presentation of Dr. V. Ramanathan, UC San Diego and Scripps Institute, Presentation June 24, 2021 at MoveLA Symposium on Short-Lived Climate Pollutant Reductions.

[6] Lawrence Livermore National Lab, *Getting to Neutral – Options for Negative Carbon Emissions,"* January 2020, at page 2.

[7] Id. See, also, Kammen, Ramanthan, Matlock, et al, footnote 2 above.

2. Prioritize Diesel Reductions to Reduce SLCP Emissions, NOx, and Toxic Air Contaminants.

Climate scientists call for eliminating diesel right away since it is a major source of black carbon emissions (as well as toxic air contaminants and smog-forming pollution).[8] The single biggest opportunity to reduce SLCP emissions in the transportation sector is to replace diesel with carbon negative biomethane from organic waste. This not only reduces black carbon from diesel combustion, but also reduces methane and/or black carbon emissions from the organic waste that is converted to RNG. Given the urgency of reducing SLCP emissions, this should be the highest focus in the transportation sector. Eliminating diesel use should be a near-term goal in and of itself. Increasing use of biomethane to reduce SLCP emissions should be another explicit goal of the transportation.

The Scoping Plan should also recommend strategies to reduce diesel use in the electricity sector, where diesel backup generators are being deployed more and more often to ensure energy reliability. Since diesel is a source of anthropogenic black carbon emissions, the electricity sector strategy in the 2022 Scoping Plan should recommend measures to reduce and replace the use of diesel in backup generators and other uses. Renewable gas, including biogas and hydrogen from organic waste, can provide the same reliability services with far lower – and often carbon negative – emissions.

Given the urgency of reducing SLCP emissions and toxic air contaminants, CARB should prioritize the phase-out of diesel in both the transportation and electricity sectors.

3. Include Human Caused Fires in Assessment of Anthropogenic Black Carbon Emissions.

SB 1383 requires California to reduce anthropogenic black carbon 50 percent by 2030. While the law does not define “anthropogenic,” the plain meaning of the term is “caused by humans.” While some emissions may be difficult to quantify precisely, the question of whether or not they are caused by human beings is not a difficult question in most cases. In fact, CalFire determines the cause of every large fire in California. According to CalFire, more than 90 percent of large fires in California are caused by human activities and infrastructure.

CARB must accurately define and assess anthropogenic black carbon emissions to comply with SB 1383. Ignoring emissions that are clearly caused by human activities or infrastructure – as determined by CalFire or a court of law – is to ignore the critical requirement of SB 1383 to reduce anthropogenic black carbon emissions. Ignoring the single largest source of anthropogenic black carbon is arbitrary and capricious in the

[8] Presentation of Dr. V. Ramanathan, UC San Diego and Scripps Institute, Presentation June 24, 2021 at MoveLA Symposium on Short-Lived Climate Pollutant Reductions. Dr. Ramanathan calls for eliminating “soot” and eliminating diesel powered vehicles.

legal sense and also undermines California's progress and leadership on climate change by ignoring the largest and most damaging source of SLCP emissions.

CARB should also include emissions from prescribed fire (also known as controlled burns) and from pile and burn of both forest and agricultural waste. Prescribed fires must be permitted by local air districts and they are planned and carried out by human beings. Both piling and burning biomass waste are also carried out entirely by human beings and equipment. There is no scientific or legal basis for ignoring these clearly "anthropogenic" sources of black carbon emissions.

Failing to include large fires, planned or unplanned, skews the state's assessment of progress toward meeting its climate goals generally and its requirements under SB 1383 in particular. Ignoring these major sources of anthropogenic black carbon also skews the economics of potential projects to convert biomass waste to useful end products like energy, biochar, and other wood products. Failing to account for black carbon emissions makes continued emissions much less expensive than using waste biomass. As we've seen with other pollution control programs, the first step is accurately measuring and tracking the pollution, then assigning responsibility for it (the "polluter pays" principle) so that pollution reductions or compliance with the law makes sense economically.

In order to comply with the black carbon requirement of SB 1383, CARB must accurately assess anthropogenic black carbon emissions – including the emissions from human caused fires – and propose strategies to reduce those emissions 50 percent by 2030.

4. Identify Strategies to Reduce SLCP Emissions from Waste Biomass.

California is making great strides to reduce emissions from dairies and from the digestible part of organic landfill waste. California is far behind, however, in addressing its biomass waste – including urban wood waste and other cellulosic waste going to landfills, agricultural, and forest waste. California's biomass waste makes up more than 80 percent of its organic waste. Meeting the state's SLCP reduction requirements is impossible unless the state quickly steps up efforts to address its biomass waste.

At the SLCP workshop, CARB staff asked what the highest and use of biomass waste is. That question was considered and answered in Lawrence Livermore National Lab's report on carbon neutrality.[9] The LLNL study found that the highest and best use of biomass waste is converting it to Bioenergy with Carbon Capture and Storage (BECCS), which provides the greatest carbon reductions from forest biomass (and other biomass waste). In fact, LLNL's assessment found that BECCS can provide more than two-thirds of all the carbon negative emissions needed to reach carbon neutrality.[10]

[9] Lawrence Livermore National Lab, *Getting to Neutral – Options for Negative Carbon Emissions in California*, January 2020.
[10] Id. at page 2.

LLNL found that the most beneficial alternatives for biomass waste are converting it to hydrogen to use in place of diesel in heavy duty trucks or converting it to electricity. In both cases, the byproduct is biochar, which provides permanent carbon sequestration.[11]

Increasing the use of biomass waste - rather than landfilling, burning, or piling and leave to decay – is critical to reduce SLCP emissions. To accelerate the beneficial use of waste biomass, BAC recommends adopting specific recommendations for each biomass sector as follows:

a. Strategies and funding to reduce biomass waste going to landfills.

SB 1383 requires that 75 percent of all organic landfill waste be diverted by 2025. According to both UC Davis and Lawrence Livermore National Lab, non-digestible organics make up more than half – about 85 percent - of all organic waste going to landfills. It is mathematically not possible to divert 75 percent of all organic landfill waste without diverting a large portion of the non-digestible waste, meaning that California must focus much more on the biomass waste currently being landfilled.

BAC urges CARB and CalRecycle to include recommendations to address biomass waste going to landfills in the 2022 Scoping Plan. Waste diversion is a critical part of the state's SLCP requirements and cannot be achieved without address biomass waste in addition to digestible organics. In particular, BAC recommends:

- Expanding CalRecycle's SB 1383 regulations to allow biomass conversion to pipeline biogas, renewable hydrogen, transportation fuels, combined heat and power, and other end uses in addition to electricity and mulch (the only two alternatives allowed now);
- Including non-combustion biomass conversion as an eligible use of any incentive programs for organic waste diversion (Cap & Trade funding, Circular Economy, Climate Catalyst Fund, etc.);
- Recommending changes to statute and/or regulations to allow both gasification and pyrolysis of diverted biomass waste to count toward local jurisdictions' diversion requirements;
- Extending and expanding the BioMAT program to encourage the use of diverted biomass waste for small-scale bioenergy projects; and
- Increasing the biomethane procurement target proposed by the CPUC and explicitly including waste biomass in the goals and pilot projects.

b. Need to identify and incentivize the most beneficial alternatives to open burning of agricultural waste.

BAC supported CARB's plan to phase out the open burning of agricultural waste in the San Joaquin Valley since open burning is a significant source of black carbon emissions

[11] Id. at page 50.

and other climate and air pollutants. While CARB's plan identifies bioenergy as one of the preferred alternatives to open burning of agricultural waste, the funding provided for quitproduction, which is not suitable for many kinds of agricultural waste.

BAC urges CARB in the 2022 Scoping Plan to identify the relative SLCP reductions and other benefits of different alternatives to open burning of agricultural waste, and to identify the policies and incentives needed to encourage the most beneficial alternatives.

c. Need to identify and incentivize the most beneficial alternatives for forest waste.

BAC also urges CARB to identify preferred alternatives to open burning – prescribed fire and pile and burn – of forest waste. According to the *California Forest Carbon Plan,* adopted by CalEPA and CNRA, bioenergy cuts black carbon and methane emissions 98 percent compared to open burning of forest waste. Both the *Forest Carbon Plan* and the *Forest Biomass Utilization Plan,* adopted by the Board of Forestry in 2020, offer many suggestions for alternatives to open burning, including bioenergy and other wood products. BAC urges CARB to incorporate the biomass utilization recommendations from the Board of Forestry into the 2022 Scoping Plan to reduce black carbon and methane emissions from open burning of forest waste. This is especially important since SB 901 (Dodd, 2018) and the Forest Stewardship Agreement between California and US Forest Service require forest fuel removal on 1 million acres annually. This could lead to an enormous increase in SLCP emissions from prescribed fire, pile and burn, or pile and decay. It is critical, therefore, for the Scoping Plan to recommend policies and incentives to minimize SLCP emissions from forest thinning and forest waste.

BAC recommends, in particular, that the Scoping Plan:

- Include black carbon emissions from prescribed fire and pile and burn of forest biomass in the assessment of, and strategies to reduce, anthropogenic black carbon;
- Recommend additional incentives and policies to promote conversion of forest biomass to energy and biochar which, together, cut SLCP emissions and provide carbon negative emissions;
- Recommend expansion and extension of the forest BioMAT program (created by SB 1122*)* to increase small-scale bioenergy projects that convert forest waste to electricity;
- Recommend adoption of an LCFS pathway for forest waste to vehicle fuels;
- Increasing the number of pilot projects that convert forest waste to pipeline biomethane in the biomethane procurement proposal adopted pursuant to SB 1440 (Hueso, 2018); and
- Propose incentives for additional forest biomass to hydrogen projects to fully commercialize this important technology and application.

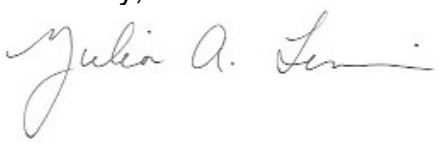
5. **Consider Whether California's Renewable Power and Pipeline Gas Programs Should be Carbon Intensity Based**.

At the SLCP workshop, Sam Wade from RNGC suggested that pipeline biogas and renewable electricity programs should be carbon intensity based like the Low Carbon Fuel Standard.[12] BAC has also recommended to the CPUC that a biomethane procurement program should be carbon intensity – rather than volume – based. BAC urges CARB to explore these options for the state's Renewables Portfolio Standard (RPS), pipeline biogas, and other clean energy programs. Re-focusing these programs on carbon intensity will help to incentivize the lowest carbon sources of energy across all sectors, not just in the transportation sector. It will also help to ensure that the state is incentivizing the most cost-effective carbon reductions and doing so consistently.

BAC urges CARB to coordinate with the CEC and CPUC to explore options for moving from volume to carbon intensity as the basis of California's renewable energy and pipeline biogas programs. While the transition may be complicated, the end result is likely to make the state's climate and clean energy programs more successful and more cost-effective, especially at reducing SLCP emissions since those reductions tend to provide the lowest carbon sources of energy and the only ones that are carbon negative.

Thank you for your consideration of these comments on SLCPs for the 2022 Scoping Plan.

Sincerely,



Julia A. Levin
Executive Director

[12] Presentation of Sam Wade, RNGC, at the September 2 workshop on SLCPs, at slide 12.