



August 27, 2024

The Honorable Liane Randolph, Chair
California Air Resources Board
1001 I Street
Sacramento, CA 95814

Re: Comments on Proposed Changes to the Low Carbon Fuel Standard

Dear Chair Randolph:

I am writing on behalf of the Bioenergy Association of California to comment on several of the proposed amendments to the LCFS. BAC strongly supports the proposal to adopt more stringent carbon reduction targets, including a more aggressive target in 2025. At the same time, however, we strongly oppose proposed changes that:

- Define eligible forest biomass in a way that effectively excludes forest waste from California's wildfire reduction, forest restoration, and public safety efforts;
- Exclude the use of biochar for carbon sequestration or other purposes in the calculation of a fuel's carbon intensity;
- Define "food scraps" in a way that is not practically achievable for most diverted organic waste projects;
- Exclude biomethane used in natural gas vehicles after 2040; and
- Eliminate credit for avoided methane emissions after 2040 even when those avoided emissions are not required by law.

BAC represents about 100 members that are converting organic waste to energy to meet the state's clean energy, climate change, wildfire reduction, landfill reduction, and clean economy goals. BAC's public sector members include cities and counties, Tribes, air quality and environmental agencies, waste and wastewater agencies, public research institutions, environmental and community groups, and a publicly owned utility. BAC's private sector members include energy and technology companies, waste haulers, agriculture and food processing companies, investors and consulting firms, and an investor-owned utility.

Many BAC members operate or are developing projects to produce low carbon fuels from organic waste. The fuels that they produce are among the lowest carbon fuels in existence and are helping to meet the requirements of SB 1383 (SLCP reductions), SB 32 (overall carbon reductions), AB 1279 (carbon neutrality), and other important state

policies such as the state's wildfire mitigation plans, plans to eliminate open burning of agricultural waste, and more.

BAC submits these comments on the *Proposed 15-Day Changes to the Low Carbon Fuel Standard Regulation*, released in August 2024, Appendix A-1.

I. The More Stringent Carbon Intensity Reductions are Warranted to Meet California's Climate Laws.

BAC strongly supports the more stringent carbon intensity reductions in the proposed 15-day language, including the 9 percent reduction required in 2025.¹ These proposed changes will better align the LCFS program with the requirements of SB 32 and SB 1383, which require 40 percent reductions in California's overall greenhouse gas emissions and methane emissions, as well as a 50 percent reduction in anthropogenic black carbon emissions, by 2030. The proposed changes will also better align with the target of AB 1279 to achieve carbon neutrality by 2045.

II. The Proposed Changes Would Exclude Most Forest and Agricultural Waste Biomass.

BAC strongly supports the inclusion of meaningful sustainability requirements in the LCFS, including requirements to ensure that the use of forest and agricultural waste are environmentally beneficial. The proposed changes in the 15-day language, however, would effectively exclude forest waste that is collected from wildfire mitigation, forest restoration and public safety projects. In addition, the sustainability criteria for both forest and agricultural waste – which were developed to address concerns about purpose grown crops – would also eliminate many beneficial projects that use forest waste biomass and agricultural residues.

A. Definition of “forest biomass waste” on page 14 of Attachment A-1.

BAC understands the desire to avoid cutting down healthy trees for the primary purpose of fuels production, but the definition of “forest biomass waste” on page 14 would also exclude many or even most wildfire mitigation and forest restoration projects in California. That is because wildfire mitigation, forest restoration, and fuel removal to address bark beetle or other forest health issues generally includes some amount of merchantable residues. In addition, all forest biomass waste can be converted to wood pellets or biochar, which are “wood products,” so the exclusion of biomass that can be converted into other wood products effectively excludes all forest biomass waste.

To ensure that LCFS eligible forest biomass waste is environmentally sustainable and protects forest health, BAC recommends the following edits to the definition:

¹ Proposed Changes to the Low Carbon Fuel Standard Regulation, August 2024, Attachment A-1, Tables 1, 2 and 3.

“Forest Biomass Waste” means **residues that are 1) removed for wildfire mitigation, forest restoration projects, or the protection of public safety, or 2) small-diameter, non-merchantable residues, limited to forest understory vegetation, ladder fuels, limbs, branches, and logs that do not meet regional minimum marketable standards for processing into wood products.**”

These changes will also make the definition of forest biomass waste consistent with the requirements of Section 95488.8(g)(1)(A)(3) which references wildfire mitigation, the need for defensible space (which often requires clearcutting), forest restoration, and threats to public safety or infrastructure.

B. Requirements for Agricultural and Forest Biomass – Section 95488.9(g)

BAC is also concerned that section 95488.9(g), which was originally written to ensure the sustainability of crop-based fuels, has been expanded to cover all waste biomass. The requirements in this section are entirely appropriate for purpose grown crops, but most are not appropriate for agricultural or forest residues where the feedstock is a waste product and the fuels producer has no control over the crop growing practices. For example, a fuels producer that uses almond shells or orchard prunings to produce fuels or electricity has no control over the pesticides or erosion control methods used by the farmer who is growing the crop or orchard. Applying the same standards to agricultural or forest residues as to purpose grown crops does not make sense and will effectively close the door to fuels that could be produced from agricultural and forest residues.

BAC recommends the following corrections to Section 95488.9(g):

(g) Sustainability Requirements for **Biomass Purpose Grown Crops**.

(A) **Biomass Purpose Grown Crops** used in fuel pathways must only be sourced on land that was cleared or cultivated prior to January 1, 2008 and actively managed or fallow, and non-forested since January 1, 2008. **Biomass Purpose Grown Crops** may not be sourced from land that is covered under international or national law or by the relevant competent authority for nature protection purposes.

(B) **Biomass Purpose Grown Crops** must be produced according to best environmental management practices that reduce GHG emissions or increase GHG sequestration, including but not limited to:

III. The Proposed Changes Exclude the Use of Biochar for Carbon Sequestration or other Purposes.

BAC supports the use of Carbon Capture and Sequestration or Use (CCSU) to drive down carbon intensities and generate carbon negative emissions where possible. The proposed definition of eligible CCSU in Section 95490(a) and in the definition of CCS on

page 8 would, however, limit sequestration to geologic storage and limit the use of captured carbon to fuels production. These restrictions exclude the use of biochar, which can be a co-product of hydrogen, electricity or biofuels production from waste biomass. Biochar can be used for carbon sequestration in soil or to reduce emissions from cows, livestock manure and compost. As the Climate Action Reserve has found, biochar is “capable of locking up carbon and keeping it from re-entering the atmosphere for centuries.”² Biochar can also be used in the production of concrete, pavement, tires, ink and other products. And biochar can replace charcoal for water filtration and purification. These are all beneficial uses that either sequester carbon or displace fossil fuel and higher emitting alternatives. Excluding the use of biochar will harm the economics and viability of forest waste and agricultural waste to fuel projects and contradicts the recommendations in the 2022 Climate Change Scoping Plan to increase the use of bioenergy with CCS (BECCS).

BAC urges CARB to revise the definition of CCS in section 95490(a) as follows:

(a)(1) Alternative fuel producers, petroleum refineries, and oil producers that capture CO₂ on-site, including at the location of the production of hydrogen used as an intermediate input, and **geologically**-sequester CO₂ **geologically or in the form of biochar**, either on-site or off-site.

BAC urges CARB to revise the definition of CCS on page 8 as follows:

“Carbon capture and sequestration (CCS) project” means **either 1)** a project that captures CO₂ by an eligible entity specified in section 95490(a) of this subarticle, transports the captured CO₂ to an injection site, and injects and permanently sequesters the captured CO₂ pursuant to the Carbon Capture and Sequestration Protocol and as specified by section 95490 of this subarticle, **or 2) a project that captures carbon in the form of biochar during the conversion of waste biomass to fuels and that biochar is used in a manner that sequesters the carbon.**

These changes will allow for the use of biochar to sequester or use carbon that is captured during gasification or pyrolysis of waste biomass.

IV. The Proposed Changes Would Codify a Definition of “food scraps” that is Overly Restrictive and Impractical.

BAC urges CARB to revise the definition of “food scraps” to include all potential sources and forms that could otherwise end up in a landfill. As written, the definition is overly restrictive and would exclude many sources and forms of food scraps. The proposed definition could also be interpreted to exclude food scraps that are combined with other organic wastes in a liquid slurry.

² <https://www.climateactionreserve.org/how/protocols/ncs/biochar/dev/>.

BAC urges CARB to revise the definition of “food scraps” as follows:

“Food Scraps” is the portion of municipal solid waste (MSW) that consists of inedible or post-consumer food collected from residences, hospitality facilities, institutions, commercial establishments, distribution centers, manufacturing facilities, and grocery stores. All food scraps are assumed to follow the state-wide average landfill disposal rate of [97.5%]. This definition excludes fats, oils, or greases (FOG).

Alternatively, BAC recommends that CARB adopt a much simpler definition of “food scraps” that simply states:

“Food Scraps” are the portion of municipal solid waste that consist of inedible, post-consumer or production food wastes that would otherwise be landfilled.

V. The Proposed Changes Should Not Eliminate Credit for Biomethane Used in Natural Gas Vehicles.

BAC supports the transition to zero-emission vehicles, but believes that it is far too soon to set an end date for the use of biomethane in natural gas vehicles as an eligible fuel under the LCFS. Section 95482(g) of the proposed regulation provides that, for any project that breaks ground after 2029, the biomethane it produces would not be eligible to generate LCFS credits if it is used in a natural gas vehicle. There are several reasons why this section could undermine the state’s decarbonization and SLCP reduction efforts.

First, the state is years behind schedule in meeting the requirements of SB 1383, particularly the requirement to diverted 75 percent of organic waste from landfills by 2025. That means that new projects will still be breaking ground after 2029 and should still be eligible to sell their biomethane to remaining natural gas vehicles for as long as those vehicles are on the road.

Second, the transition to ZEVs is slowing down and may not happen on the schedule that CARB is hoping, so setting an end date now for the use of biomethane in natural gas vehicles is premature at this point. And, even if the transition to ZEV’s happens at the pace that CARB hopes, there will still be legacy natural gas vehicles on the road for years after 2040.

In addition, some fleets may have combinations of natural gas and hydrogen or electric vehicles and may seek to procure biomethane for a combination of fuels and vehicle types. It does not make sense to allow the use of biomethane for electricity or hydrogen generation, but not in natural gas vehicles if those vehicles are still on the road. The LCFS is a carbon reduction program adopted pursuant to AB 32, so the carbon reductions provided by biomethane under the program should be eligible regardless of

the vehicle type that uses the fuel (and assuming that the different vehicle type will affect the carbon intensity of the fuel).

Finally, the perverse result of this regulation is likely to be that some natural gas vehicles on the road after 2040 will have to revert to using fossil fuel gas, which would totally undermine the goal of the LCFS program.

BAC urges CARB, therefore, to remove section 95482(g) from the proposed regulation and to allow the use of biomethane in natural gas vehicles as long as those vehicles are legally on the road.

VI. The Proposed Regulation Should Not Eliminate Credit for Avoided Emissions that are Not Required by Law.

As BAC noted in its comments in February, the LCFS should not exclude credit for avoided methane emissions that are not required by law. This includes avoided methane emissions from livestock manure, which is not currently regulated, as well as avoided emissions from diverted organic waste projects where bioenergy can provide far greater carbon reductions than alternative products procured pursuant to CalRecycle's SB 1383 regulations. Establishing end dates for avoided methane crediting, when the methane reductions are not required by law, is not appropriate and will slow the development of methane reduction projects.

SB 1383 requires a 40 percent reduction in methane by 2030, but it does not include requirements for dairy methane reductions. On the contrary, the law requires a number of findings before the state can regulate dairy methane emissions³ and until those findings are made, the State cannot regulate dairy methane emissions. Therefore, dairy biogas producers should receive full credit for avoided methane emissions from dairy manure that is used to produce biofuels participating in the LCFS program.

Diverted organic waste is a more complex category since SB 1383 requires 75 percent of organic landfill waste to be diverted from landfills by 2025. But, neither SB 1383 nor CalRecycle's regulations require that diverted organic waste be converted to bioenergy. CalRecycle's SB 1383 regulations explicitly allow alternatives to bioenergy that emit far more carbon. Those alternatives include compost production and mulch, which are less expensive to produce than bioenergy, but also have greater carbon emissions.

CalRecycle affirmed this recently when it determined that a diverted organic waste to hydrogen project will have lower emissions than if that same waste were converted to compost (the finding required under Article 2 of CalRecycle's SB 1383 regulations). As long as CalRecycle's SB 1383 regulations allow higher emission alternatives to biofuels (biomethane, hydrogen or electricity generated from that waste), then the LCFS should continue to provide credit for the difference between bioenergy and other, higher emitting compliance products.

³ Health and Safety Code section 39730.7(b)(4).

For all these reasons, BAC urges the Air Board to go back to its earlier proposal to allow credit for avoided methane emissions for three consecutive 10-year periods for projects that break ground before 2030, especially since those are the early adopters that have taken on more financial and regulatory risk to get projects built. BAC recommends allowing at least three 10-year periods of avoided methane crediting for projects that break ground before 2030 and two consecutive periods for projects that break ground after 2030. This will help to accelerate additional methane reductions before the 2030 compliance date in SB 1383 and will continue to stimulate new projects after 2030.

VII. CHANGES NEEDED FOR DAIRY BIOMETHANE AND HYDROGEN

BAC supports two additional changes to facilitate the highest and best use of dairy biomethane as a low carbon transportation fuel, establishing a temporary CI for dairy biomethane that is converted to electricity or hydrogen and allowing the use of book and claim for RPS eligible dairy biomethane or hydrogen that is used to generate electricity for vehicle charging. Both of these changes will accelerate the production and use of dairy biomethane, which is essential to meet the requirement of SB 1383 to reduce California's methane emissions 40 percent by 2030.

The temporary CI for dairy biomethane to electricity is important for producers to obtain the full value of biomethane to electricity production and will further the Air Board's goal of moving to electricity and hydrogen for use in zero emission vehicles. Ironically, there is a temporary CI for biomethane that is used as RNG in natural gas vehicles, but the Air Board has made clear that it wants biomethane to transition to other uses or to be converted to electricity and hydrogen. Adopting a temporary CI for dairy biomethane to electricity or hydrogen will encourage this transition by giving full value to biomethane producers. In the absence of that temporary CI, producers would lose money by choosing to produce the cleanest and lowest carbon fuels – electricity or hydrogen – from biomethane. That is a perverse incentive that doesn't make sense given the Air Board's focus on transitioning to electricity and hydrogen in the transportation sector.

The Air Board can also help accelerate the transition to electricity for vehicle charging by authorizing the use of book-and-claim for RPS eligible biomethane or hydrogen that is converted to electricity. This would be consistent with the authorization to use book-and-claim for low CI electricity, which must also be RPS eligible, and it would help to lower the CI of eligible electricity by enabling additional electricity generation from carbon negative dairy biomethane. Book-and-claim for biomethane or hydrogen to electricity should, however, be limited to RPS eligible biomethane or hydrogen to ensure that the electricity itself is also RPS eligible, as required by the current LCFS regulations.

Both of these changes will accelerate progress in reducing dairy methane emissions and transitioning to electricity and hydrogen powered vehicles.

Thank you for your consideration of these comments.

Sincerely,

A handwritten signature in cursive script, reading "Julia A. Levin". The signature is written in a dark ink and is positioned above the printed name.

Julia A. Levin
Executive Director