

# ALDER FUELS

September 16, 2022

*Submitted Electronically*

Ms. Cheryl Laskowski, Branch Chief  
Transportation Fuels Branch  
California Air Resources Board  
1001 I St.  
Sacramento, CA 95814

**RE: Alder Fuels Comments in Response to the August 18, 2022, Public Workshop to Discuss Potential Changes to the LCFS**

Dear Ms. Laskowski,

Alder Fuels appreciates the opportunity to provide comments on issues raised by the California Air Resources Board (CARB) during its August 18, 2022, Public Workshop to discuss potential changes to the Low Carbon Fuel Standard (LCFS). Alder, which provided comments on the July 7, 2022, Public Workshop,<sup>1</sup> reiterates its support for CARB's efforts to continue to strengthen the LCFS. In particular, we support CARB's work in assessing the carbon intensity (CI) target and more action focused on scaling up sustainable aviation fuel (SAF), referred to as alternative jet fuel under the LCFS.<sup>2</sup> As indicated in our August 8, 2022, comment letter, we urge CARB to take steps to more fully reflect the carbon savings attendant to the use of woody waste residuals for low-carbon transportation fuels, including SAF, and to better prioritize woody waste pathways. Doing so will not only bring significant carbon emissions savings but will also help address California's wildfire crisis by increasing the utilization of residuals and waste derived from sustainable forest management treatments that would otherwise decompose or burn.

## **Background on Alder Fuels**

By way of background, Alder Fuels converts natural, sustainable biomass, including forest residuals, agricultural residues, and regenerative grasses, into a low-carbon to carbon-negative "green" biocrude oil (hereinafter "greencrude") that can be used to produce drop-in sustainable SAF, renewable diesel, and renewable naphtha at existing refineries using their current equipment and infrastructure. Our team has a proven record for development and commercial deployment of novel technology, including having founded AltAir Fuels, which developed the world's first refinery designed to produce SAF and military-grade fuels. That facility, located in Paramount, California, has maintained continuous production since 2016. In 2021, after the successful transfer of operations of the Paramount facility to World Energy, the AltAir leadership team founded Alder Fuels.

Currently, we are engaging with various California State agencies and departments to realize synergies between the State's forest management and wildfire prevention activities and the use of woody waste biomass for low-carbon transportation fuels, including SAF. SAF can meaningfully reduce aviation sector emissions today and help California achieve its climate

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<sup>1</sup> Our August 8, 2022, comment letter can be found at <https://www.arb.ca.gov/lists/com-attach/38-lcfs-wkshp-jul22-ws-UTBdN1I3BzFSJgZZ.pdf>.

<sup>2</sup> For purposes of these comments, Alder Fuels uses the terms SAF and alternative jet fuel synonymously.

goals. SAF reduces greenhouse gas (GHG) emissions by up to 80 percent, and Alder Fuels is working on processes to make our greencrude carbon negative, enabling extremely low-carbon and carbon-negative SAF. SAF also greatly reduces emissions that impact local air quality, reducing sulfur oxides from jet fuel combustion by nearly 100 percent and particulate matter (PM) by approximately 50 percent, reductions that are especially impactful in communities around airports.

### **Aligning with Sustainable Aviation Fuel Goals**

As indicated in our prior comment letter, besides supporting CARB's plan to consider increasing the 2030 CI target to 25 or 30 percent, Alder Fuels supports CARB's consideration of additional ways in which the LCFS could support SAF production and deployment. In recognition that SAF is relatively new to the market and faces higher production hurdles than ground-based alternative fuels, especially renewable diesel, one approach would be for CARB to keep the CI baseline for conventional jet fuel at its current static level of 89.37 gCO<sub>2</sub>e/MJ for several more years (rather than have it adjust in lockstep, beginning in 2023, with the benchmark for diesel and diesel substitutes), thereby providing greater incentives for low-carbon and carbon-negative SAF production. This should also include consideration of ways to incentivize the utilization of forest residuals tied to forest health and wildfire prevention, or other residuals whose utilization can help solve for other priorities of the State. As explained in our August 8 submission, scale up of SAF is critical to a meaningful reduction of aviation sector emissions to help California achieve its climate goals. Further, providing enhanced crediting for SAF would be consistent with Governor Newsom's directive for the State to adopt policies to further accelerate alternative aviation fuels deployment.<sup>3</sup>

### **Use of Forest Residues for SAF and Other Low-Carbon Transportation Fuels**

A critical way in which CARB could meet its goal to better align the LCFS' climate objectives with other State priorities would be for CARB to better reflect in the LCFS and the supporting CA-GREET3.0 model the emissions savings attendant to using woody biomass residues as feedstocks for low-carbon transportation fuels. Further, we urge CARB to take steps to support and incentivize the inclusion of woody waste pathways under the LCFS.

The recent White Paper, "Turning Wildfire Tinder into Low Carbon Fuels,"<sup>4</sup> issued by key members of the Low Carbon Fuels Coalition working on forest residuals utilization, details the tremendous wildfire prevention and climate benefits that can be achieved through use of forest residuals to produce SAF and other low-carbon liquid transportation fuels. The White Paper, which was based on the California Joint Institute for Wood Products Innovation's 50-member working group assessment on "Advancing Collaborative Action on Forest Biofuels in California," explains that "the production of transportation fuels is the highest and best use of woody biomass because this feedstock is abundant and reliable, advanced technologies drastically

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<sup>3</sup> See Letter from Governor Newsom to Liane Randolph, Chair of CARB (July 22, 2022).

<sup>4</sup> Turning Wildfire Tinder into Low Carbon Fuels:  
<https://static1.squarespace.com/static/586eba3b15d5db8b6432c77d/t/6266e5d2c2744b357a4aaa72/1650910726895/Turning+Wildfire+Tinder+Into+Low+Carbon+Fuels+White+paper+for+Policymakers.pdf>.

reduce criteria pollutants and [GHG] emissions relative to fossil fuel refining, and transportation is the hardest economic sector to decarbonize.”<sup>5</sup>

While California leads the nation in decarbonizing its transportation fuels, the State’s success has been achieved primarily through the importation of liquid fuels from other states and countries, with California currently importing over 90% of its low-carbon liquid fuels.<sup>6</sup> In dramatic contrast to other feedstocks suitable for producing low-carbon liquid fuels, California currently possesses an overabundance of forest woody biomass. Indeed, California’s forest health management and forest fire fuels reductions are projected to produce close to 24 million bone dry tons of biomass waste per year as the California State and Federal governments reach their goal of treating one million acres annually. Without significant commercial alternative uses for that waste, the State would be forced to leave tons of the material in piles that will eventually burn or decay, posing other risks and releasing carbon and PM emissions into the air.

To address this, and as recommended in the aforementioned California Joint Institute for Wood Products Innovation report,<sup>7</sup> Alder Fuels urges CARB to adopt a simplified forest biomass feedstock calculator for CA-GREET3.0 to estimate lifecycle emission savings from mobilizing woody wastes and residues relative to their counterfactual fate. Moreover, CARB should expedite the review of fuel pathways using woody biomass as feedstock to produce SAF and other low-carbon transportation fuels. These actions would increase SAF production and support California’s climate and carbon neutrality goals. As the California Energy Commission recently recognized in its Pre-Solicitation Workshop on Zero- and Near-Zero Carbon Fuel Production and Supply Funding Concepts, “unlock[ing] waste-based woody biomass” would provide “one of the largest sustainable feedstocks for fuels and energy,” while also creating jobs and positive economic impact, particularly in disadvantaged communities.<sup>8</sup> In addition, provision of the appropriate regulatory foundation for the use of woody waste residues for SAF and other low-carbon and carbon-negative transportation fuels would provide a revenue stream that would help to defray the high costs of forest treatments and support the State’s ambition for treating a million or more acres of forestland in the State per year.<sup>9</sup>

### **Expert and Cross-Agency Collaboration on Forest Residuals Utilization**

Alder Fuels believes that advancing forest residuals utilization in support of California’s climate and wildfire prevention goals can be best accomplished by augmenting CARB’s expertise through nimble, yet thorough collaboration with other key California departments and agencies

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<sup>5</sup> *Id.* at 1.

<sup>6</sup> California Air Resources Board, LCFS Data Dashboard, Figure 10, at <https://ww2.arb.ca.gov/resources/documents/lcfs-data-dashboard>.

<sup>7</sup> Available at [https://bof.fire.ca.gov/media/mn5gzmxv/joint-institute-forest-biofuels\\_final\\_2022\\_ada.pdf](https://bof.fire.ca.gov/media/mn5gzmxv/joint-institute-forest-biofuels_final_2022_ada.pdf).

<sup>8</sup> California Energy Commission, “Zero- and Near-Zero Carbon Fuel Production and Supply Funding Concepts – Docket Number 22-TRAN-01, TN # 244056, Pre-Solicitation Workshop Presentation, Slides 17-18 (July 14, 2022), available at <https://efiling.energy.ca.gov/GetDocument.aspx?tn=244056>.

<sup>9</sup> See B. Cabiyo, J. Fried, B. Collins, W. Stewart, J. Wong, and D. Sanchez, “Innovative Wood Use Can Enable Carbon-Beneficial Forest Management in California,” PNAS (2021), available at <https://www.pnas.org/doi/epdf/10.1073/pnas.2019073118>.

Ms. Cheryl Laskowski, Branch Chief

September 16, 2022

Page 4

with distinct roles in this space, including the California Natural Resources Agency, Department of Forestry and Fire Protection, the Board of Forestry, the California Energy Commission, GoBiz, and the Governor's Office of Planning and Research. In addition, outside experts in lifecycle GHG emissions analysis have considerable insights to share, as do those of us who work with the technologies to convert woody wastes into low-carbon transportation fuels. To leverage the expertise of other California State departments and agencies and outside experts, we recommend that CARB consider a focused conversation in which CARB staff, staff from other relevant agencies (including relevant federal partners), and primary stakeholders such as the companies that contributed to the "Turning Wildfire Tinder into Low Carbon Fuels" White Paper can discuss forest residuals utilization in the context of the LCFS. Accordingly, Alder Fuels once again strongly urges CARB staff to convene an LCFS workshop focused on woody biomass as soon as practicable. Alder Fuels reiterates that it stands ready to assist in whatever way it can in organizing and facilitating such a workshop.

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Thank you for your consideration of these comments. Please do not hesitate to contact us if you have any questions.

Sincerely yours,



Nancy N. Young  
Chief Sustainability Officer



Ira Dassa  
Sr. Director, Sustainability & Environmental Affairs