

ALDER FUELS

December 19, 2022

Submitted Electronically

Dr. 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 November 9, 2022, Public Workshop on Potential Changes to the LCFS

Dear Dr. Laskowski:

Alder Fuels (Alder) appreciates the opportunity to comment on various of the issues raised by the California Air Resources Board (CARB) during its latest (i.e., November 9, 2022) public workshop to discuss potential changes to the Low Carbon Fuel Standard (LCFS).

Alder, which commented on the previous LCFS public workshops,¹ expresses once again its strong support for CARB's efforts to continue to strengthen the LCFS program. As discussed more fully in Part II below, we support an increase of the carbon intensity (CI) reduction target from the current level of 20% by (and after) 2030 to at least 25% and ideally 35% by 2030 and 90% by 2045. While CARB referred to it in the November 9 slide presentation as a "potential future topic," Alder also supports a "self-adjusting CI target mechanism," or what some referred to during the workshop as a self-executing ratchet mechanism that would automatically tighten the program's stringency when circumstances warrant.² Finally, we take this opportunity to reiterate again our call for CARB to account for the full carbon savings attendant to the use of woody waste residuals for low-carbon transportation fuels, including sustainable aviation fuel (SAF), and to better prioritize woody waste pathways under the LCFS. It is well worth CARB investing the staff time necessary to address this essential issue given that beneficial fuel use of woody waste residuals in California presents a unique opportunity for CARB to reduce carbon intensity, improve air quality, protect citizens from wildfires, drive economic growth, and create rural jobs.

I. Background on Alder Fuels

As described in our prior comment letters, Alder is a clean tech developer and green biocrude producer. Our proprietary technology converts natural, sustainable biomass, including forestry residues, agricultural wastes, and regenerative grasses like miscanthus, elephant grass, and switchgrass, into low-carbon to carbon-negative biocrude oil (what we call Alder Greencrude) that can then be turned into SAF, renewable diesel, and other finished fuels and chemicals at biorefineries and petroleum refineries using existing equipment and infrastructure. The Alder team has a proven record of developing and commercially deploying novel technology, including

¹ Our September 16 and August 8, 2022, comment letters on the August 18 and July 7, 2022, LCFS public workshops that CARB held are posted at <https://www.arb.ca.gov/lists/com-attach/12-lcfs-wkshp-aug18-ws-VDUGbFM2V2FRJQVa.pdf> and <https://www.arb.ca.gov/lists/com-attach/38-lcfs-wkshp-jul22-ws-UTBdN1I3BzFSJgZZ.pdf>.

² Slide 37 of <https://ww2.arb.ca.gov/sites/default/files/2022-11/LCFSPresentation.pdf>.

having founded AltAir Fuels, which refurbished a former asphalt facility in Paramount, California into the world's first refinery capable of producing SAF as well as renewable diesel and military-grade transportation fuels. The Paramount refinery has maintained continuous production since 2016. After the successful transfer of operations of the Paramount refinery to World Energy, LLC, the AltAir leadership team founded Alder.

II. Alder Comments on the November 9, 2022, Public Workshop

With respect to the California Transportation Supply (CATS) Model that CARB is using to conduct its LCFS modeling, Alder observes that neither forestry residues nor agricultural wastes (e.g., corn stover) are included as feedstock inputs.³ Yet, based on the Final Scoping Plan and multiple assessments of biomass availability within the State of California, both of these are abundant, sustainable feedstock sources that Alder and other technology companies and biofuel producers are poised to use. We respect CARB's acknowledgements that "CATS scenarios do not capture the California fuel markets perfectly" and key pieces of information are needed to include "additional" feedstocks as inputs to the model.⁴ As there now are multiple sources of information on the availability of forest residues and agricultural wastes to serve as biofuel feedstocks and on the pathways for converting them into low-carbon fuels (Alder's technology pathway being one of them),⁵ we urge CARB to take steps to add these feedstocks to the model.

Alder supports the preliminary scenario design options that CARB staff described, which are depicted on slides 24-26 of the November 9 slide presentation. All three options (i.e., Alternatives A, B, and C) have a 2045 CI reduction target of 90% but different 2030 targets – 25%, 30%, or 35% – and different CI reduction trajectories. Alder would prefer to see a 35% reduction target by 2030, as that would be the most beneficial in terms of supporting low-carbon fuels and emerging technologies such as Alder's, but a 30% or even a 25% CI reduction target would represent an improvement over the current 20% by 2030 level.⁶ Increasing the 2030 reduction target would further incentivize the production and deployment of low-carbon transportation fuels and in so doing, accelerate the displacement of petroleum in California. This, of course, would necessarily translate into additional, much-needed greenhouse gas (and other pollutant) emissions reductions. Importantly, increasing the 2030 CI reduction target from the current 20% level would also have the desirable effect of stabilizing and eventually raising

³ *Id.* at slide 16.

⁴ *Id.* at slides 13, 19.

⁵ See, e.g., *Turning Wildfire Tinder into Low Carbon Fuels: A White Paper for Policymakers*, available at <https://static1.squarespace.com/static/586eba3b15d5db8b6432c77d/t/6266e5d2c2744b357a4aaa72/1650910726895/Turning+Wildfire+Tinder+Into+Low+Carbon+Fuels+White+paper+for+Policymakers.pdf>; B. Cabiyo, et al., "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>; S.E. Baker, et al., *Getting to Neutral: Options for Negative Carbon Emissions in California* (Aug. 2020), available at https://gs.llnl.gov/sites/gf/files/2021-08/getting_to_neutral.pdf.

⁶ As CARB staff no doubt realizes, come January 1, 2023, California's neighbor to the north, Oregon, will have a CI reduction target of 20% by 2030 and 37% by 2035. See <https://www.oregon.gov/deq/rulemaking/Pages/cfp2022.aspx>.

the LCFS credit price, which has dropped sharply over the last year and hampered the clean fuels industry from an investment and financing standpoint.

In addition to supporting a strengthening of the 2030 CI reduction target, Alder supports the development of what CARB terms a “self-adjusting CI target mechanism.” From our perspective, such an acceleration mechanism would automatically ratchet (i.e., tighten for a designated period, without the need for CARB rulemaking) the program stringency by increasing the requisite CI reduction in the event of sustained LCFS “overperformance.”⁷ In this regard, we have co-signed the industry comment letter that seeks the creation of such an acceleration mechanism. Alder stands ready to work with CARB staff and other interested stakeholders to develop and add this type of mechanism to the LCFS regulation via the forthcoming LCFS amendments package.

During the November 9 workshop, CARB staff indicated that additional LCFS public workshops would be held in early 2023 on various potential topics. Alder takes this opportunity to reemphasize that a public workshop should be convened as soon as practicable on the appropriate treatment of woody wastes and residues under the LCFS and the supporting CA-GREET3.0 model.⁸ In fact, we are pleased to see that the “Biomass Residues and Potential Carbon Benefits” section of the Natural and Working Lands Technical Support Document for the Final Scoping Plan released on November 16, 2022, and approved by the Board on December 15, 2022, shows in Tables 36 and 38 that for the Scoping Plan Scenario (i.e., Scenario 3), 14.5 million bone dry tons (BDT) of biomass residue are technically mobilizable each year in California, with over 8.3 million BDT of this quantity being deemed “socially beneficial” for mobilization.⁹ CARB goes on to explicitly state in this section of the document as follows:

Recognizing the potential carbon benefits of a wide variety of end uses [of biomass residue], additional policies are needed to support market growth for innovative bioenergy and nonenergy uses for forest residues and other types of biomass waste. As discussed in the recent interagency sustainable woody biomass industry development framework [70], the State has convened a collaborative process to advance new market development strategies to mobilize residues into utilization options that contribute to climate, air quality, and wildfire mitigation goals.¹⁰

⁷ The term “overperformance,” here referring to a situation where the LCFS has supported the production of a greater quantity of low-carbon fuels during a certain time period than originally projected, is a bit of a misnomer. In actuality, given the State’s aggressive carbon emissions reduction and climate goals and the challenges associated with meeting them, the situation might better be referred to as underperformance of the CI targets and implementing mechanisms. An acceleration mechanism would address this.

⁸ See pp. 2-4 of Alder’s September 16, 2022, comment letter.

⁹ CARB, *Appendix I – Natural and Working Lands Technical Support Document*, at 113-17 (November 2022), available at <https://ww2.arb.ca.gov/sites/default/files/2022-11/2022-sp-appendix-i-nwl-modeling.pdf>. The over 8.3 million BDT figure compares to the 5.6 million BDT figure included in Table 33 of the May 2022 version of Appendix I.

¹⁰ *Id.* at 116.

The LCFS program, of course, is already in place and a well-established state policy. For all of the reasons Alder has previously expressed, CARB merely needs to make adjustments so that the LCFS and the CA-GREET3.0 model reflect the emissions savings attendant to using woody biomass residues as feedstocks for low-carbon transportation fuels. Many state biomass experts have agreed that utilizing the state's forest thinnings to produce fuel, and SAF in particular, is an economically and environmentally preferable alternative.¹¹ However, absent an updated accounting system for avoided emissions, these thinnings are more likely to remain in the status quo – where they are burned or decay on site, sometimes contributing to wildfire. Alder firmly believes that by fully accounting for the emissions benefits – including the avoided carbon dioxide and other emissions from wildfires and the avoided methane emissions from biomass decaying on forest floors – associated with the utilization of woody biomass as feedstocks for SAF and other low-carbon fuels, CARB can further solidify California's indisputable position as the global leader in biofuels production and deployment, thereby supporting California businesses and jobs while advancing California's climate and wildfire prevention goals.

Lastly, and specifically with respect to avoided methane emissions, to the extent CARB is considering a potential future phase-down of the avoided methane crediting that is expressly allowed under section 95488.9(f) of the LCFS regulation, we do not believe that a phase-down would be scientifically sound if the objective is simply to minimize credit generation, and therefore would recommend against this approach. More important, we note that woody biomass pathways, for which we adamantly maintain avoided emissions should likewise be reflected in a fuel pathway's CI score, have not yet generated any credits under the LCFS program and so are entirely distinguishable from existing, deeply carbon-negative biomethane pathways.¹² One of the key aspects that make the LCFS a good tool for de-fossilizing our transportation fuels sector is its technology-neutral performance standard, which relies on the best carbon accounting processes and science, and we recommend that CARB continue to follow this path.

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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

¹¹ See "Why Biofuels" (April 2022), available at https://bof.fire.ca.gov/media/ljhhtzmv/4-25-22_why-biofuels-final_ada.pdf, and "The Benefits of Different Biofuels" (April 2022), available at https://bof.fire.ca.gov/media/sxadkizm/4-25-22-benefits-of-different-biofuels-final_ada.pdf.

¹² See "LCFS Quarterly Data Spreadsheet," available at https://ww2.arb.ca.gov/sites/default/files/2022-10/quarterlysummary_103122_1.xlsx.