September 28, 2023

Liane Randolph, Chair
Members of the Board
California Air Resources Board
1001 I Street
Sacramento, CA 95814

Dear Chair Randolph and Members of the Board,

I am a retired staff member at the California Air Resources Board (CARB). During my 13-year career at CARB, I worked almost exclusively on the Low Carbon Fuel Standard (LCFS), including over a year as Branch Chief overseeing the program.[1] I helped develop and enthusiastically support the LCFS. A strong LCFS is critical to helping California achieve its zero emission goals.

In general, I support many of the recommendations put forth by the Environmental NGO and Environmental Justice Communities. In this comment letter, I am focusing on several recommendations related to CCS and direct air capture (DAC).

<u>Remove Enhanced Oil Recovery (EOR) as an Eligible Sequestration Method:</u> California SB 1314 prohibits the use of EOR as a sequestration method for CCS projects in California. Section 1 of SB 1314 reads "The Legislature finds and declares that the purpose of carbon capture technologies, and carbon capture and sequestration is to facilitate the transition to a carbon-neutral society and not to facilitate continued dependence upon fossil fuel production." Out of consistency, I highly encourage the LCFS team to remove EOR as an eligible sequestration method under the LCFS for out-of-state CCS projects. CO_2 EOR is a tertiary oil production method that is only used when oil field production has declined significantly using less costly production methods. As such, use of EOR results in the recovery of oil that otherwise would not be produced. The LCFS program should not be providing additional incentive to enable continued production of oil from these fields. Let's leave this oil in the ground!

<u>Prohibit Double Counting of Emission Reductions where "Stacking" is not Explicitly Allowed in the LCFS Regulation:</u> The LCFS program has traditionally allowed stacking of credit value with value from other programs such as the federal Renewable Fuel Standard, the Biodiesel Blenders Tax Credit and the California Cap and Trade program. Allowable stacking of value should be explicitly called out in the regulation, and if not specified should not be allowed. For example, developers of direct air capture (DAC) projects should not be allowed to generate LCFS credits for emission reductions that they have or intend to sell to companies in the voluntary market.[2] Similarly, developers

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[1] I am writing this comment letter on my own behalf as a private citizen.

[2] See 1PointFive announces agreement with Airbus for the purchase of 400,000 tonnes of carbon removal credits (oxy.com) and Amazon makes first investment in direct air capture climate technology | Reuters

of fuel pathways or DAC projects using EOR sequestration should not be allowed to generate LCFS credits if they also intend to market the crude oil produced using EOR as “low carbon or carbon neutral”.[3] These are two obvious instances of potential double counting of emission reductions that should be prohibited. If CARB believes that double-counting or stacking should be allowed in certain circumstances (such as stacking of value with the Renewable Fuel Standard or with the Section 45Q tax credit for CCS), then this allowance should be discussed through the public rulemaking process and explicitly called out in the regulation.

<u>Address the Elephant in the Room – Potentially Excessive Credit Generation by DAC and BECCS Hydrogen Projects:</u> The recently approved Scoping Plan relies upon significant quantities of carbon dioxide removal from DAC and BECCS hydrogen projects to achieve carbon neutrality. Modeling results released publicly for the Scoping Plan show 31, 57, and 73 million MT of CO_2 removal using DAC and BECCS in years 2035, 2040, and 2045 respectively.[4] Since the LCFS program allows DAC and BECCS hydrogen projects to generate credit, one should expect these projects to generate similar quantities of LCFS credits. Therefore, based on data provided in the SRIA[5], DAC and BECCS hydrogen projects could generate over 60% of credits necessary to achieve LCFS compliance in 2035 and well over 100% of credits necessary for compliance in 2040 and 2045. Proliferation of these projects would result in the proposed auto-acceleration mechanism to be triggered repeatedly leading to extremely high pass-through costs to remaining consumers of gasoline and diesel, which are likely to be increasingly low-income community members. Therefore, I highly suggest that CARB place a cap on credit generation for DAC projects under the LCFS.

I especially encourage CARB to rethink LCFS support of credit generating opportunities that result in value leaving the state, do not help California achieve its AB32 emission reduction goals, and provide little or no benefit to low-income and disadvantaged communities in the state. A prime example of such a credit generating opportunity is out-of-state direct air capture (DAC) projects. Based on press releases, each of the DAC projects is expected to be massive, resulting in credit generation of approximately one million MT annually. At a credit value of $200, a single out-of-state project may result in approximately $200 million leaving the California economy annually, while providing no jobs for Californians, displacing no fossil fuels in California, resulting in no air pollution benefits to California communities, and not even counting toward California’s AB32 emission reduction goals. Therefore, not only will Californians be paying for a large out-of-state project that provides no immediate benefit to the state, but they will also have to pay again for separate emission reductions that do count toward the state’s goals. In effect, these DAC projects would act as “LCFS offsets”, allowing oil companies to comply with the LCFS without affecting their fossil

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[3] See Oxy Low Carbon Ventures, together with Macquarie, Deliver World’s First Shipment of Carbon-Neutral Oil
[4] See https://ww2.arb.ca.gov/sites/default/files/2022-11/2022-sp-PATHWAYS-data-E3_0.xlsx
[5] See Low Carbon Fuel Standard 2023 Amendments

fuel sales. Credit generation for out-of-state DAC projects should either be eliminated or tightly capped as is done in the Cap-and-Trade program for offsets.

Sincerely,

James Duffy