



October 26, 2022

Ms. Cheryl Laskowski  
Branch Chief  
Transportation Fuels Branch  
California Air Resources Board  
1001 I Street  
Sacramento, CA 95814  
Email: Cheryl.Laskowski@arb.ca.gov

**Re: Biogas Issues Related to the Upcoming LCFS Amendments**

Dear Ms. Laskowski:

I am writing on behalf of Air Liquide Advanced Technologies U.S. LLC (“Air Liquide”) with regard to CARB’s planned amendments to the Low Carbon Fuel Standard (“LCFS”) regulation. Air Liquide and its affiliated companies operate 128 facilities and employ over 2,000 people in California. Air Liquide’s parent and affiliated companies are the world’s leaders in industrial and medical gases. In California, Air Liquide is one of the largest producers of hydrogen for fuel-cell electric vehicles. Air Liquide is also a leading producer of biogas and renewable methane in the United States.

This letter is being submitted in anticipation of CARB’s publication of draft amendments to the LCFS regulation in 2023. It relates to the topics discussed at CARB’s August 18, 2022 workshop entitled “Public Workshop to Discuss Potential Changes to the Low Carbon Fuel Standard.”

Biogas is a critical component in meeting California’s current and future climate goals. In many cases, biogas has a negative carbon intensity; that is, the use of biogas for transportation may result in a net decrease in greenhouse gas emissions, on a carbon-dioxide-equivalent basis. We commend CARB for proposing a Scoping Plan Update that allows for the capture and use of biogas to reduce emissions of methane, a potent greenhouse gas. We also support CARB’s view, as stated in the Draft 2022 Scoping Plan Update, that biogas can displace other gaseous fuels in a wide range of sectors, and especially in transportation.

Air Liquide believes that the Low Carbon Fuel Standard should promote the use of biogas to help reduce emissions of methane. Methane has a global warming potential approximately 25 times higher than carbon dioxide and, according to CARB, is responsible for about 20 percent of global warming. Reducing methane emissions is an essential part of the State’s climate agenda.

**Expansion of credits for sources of biomethane.** The current LCFS regulation permits crediting for avoided methane emissions only from specific sources—dairy and swine manure operations and organic waste diverted from landfills. *See* California Code of Regulations, Title 17, Section 15488.9(f). Air Liquide proposes that the LCFS provide credits for any avoided methane emissions from any source, as long as a lifecycle assessment demonstrates a reduction in methane emissions below that required by law. Air Liquide supports an approach in which industry finances projects to capture methane from other sources, develop methane-capture protocols, and perform lifecycle assessments to validate the reductions in emissions, which would be subject to audit and verification. Such a regime would provide greater incentives than the current regulation to reduce methane emissions from multiple sources. It would also be more efficient than the current regulatory system, because it would allow all organic wastes within reasonable transportation distance to be treated at the same plant, thus reducing the distance waste needs to be transported and reducing emissions associated with transportation.

**Full credit for reduced emissions.** CARB should allow credits for carbon dioxide or other greenhouse gases that are captured and incorporated into useful products. The LCFS currently allows credits for carbon capture and underground storage, but does not explicitly allow credits for carbon dioxide that is incorporated into useful products. The federal tax credit under IRC 45Q already provides credits for such avoided emissions, and CARB should provide the same incentives to avoid damaging emissions under the LCFS.

**Certainty regarding captured biomethane.** Under SB 1383, CARB may promulgate regulations to limit methane emissions from dairy and livestock operations at any time after January 1, 2024. Once it does so, the carbon intensity of biomethane from those sources under the LCFS will be significantly increased because it will no longer include credit for avoiding emissions that will be required to be captured under those future regulations. Industry needs certainty regarding the future uses and value of biomethane. Investments in biomethane production require long-term planning—much longer than the current period of less than fifteen months until January 1, 2024, when CARB may alter the current business landscape. In order to maximize the capture of methane and promote CARB’s goals, CARB should provide a multi-year roadmap of its anticipated plans for future regulations regarding methane capture, and for crediting avoided emissions under the Low Carbon Fuel Standard.

**Reduce credit price volatility.** The strength of cap-and-trade systems such as the LCFS is that they impose a firm cap, but their weakness is that they permit substantial price volatility. CARB has already addressed the potential for rapid price escalation by capping LCFS credit prices, but it has not addressed the risk of rapid price decreases. The market for LCFS credits is currently declining precipitously. LCFS credit prices, which were above \$200 per credit in early 2020, have sold recently for as low as \$62 per credit. This substantial price volatility has a negative effect on investment in alternative and low carbon-intensity fuels. Air Liquide suggests

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the implementation of a gradually increasing price floor that narrows the band in which credit prices may vary and maintains predictable and steady pricing to encourage investment in the low carbon arena.

Air Liquide appreciates CARB's willingness to consider input from all stakeholders, and looks forward to working with CARB staff on the development of amendments to the LCFS regulation in 2023. We would also be happy to meet with CARB staff to discuss any of the above proposals and comments.

Very truly yours,



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