

December 21, 2022

Cheryl Laskowski  
Branch Chief, Transportation Fuels  
California Air Resources Board  
P.O. Box 2815  
Sacramento, CA 95812

[submitted electronically]

**RE: Comments in Response to November 9, 2022 Public Workshop to Discuss Potential Changes to the Low Carbon Fuel Standard**

Dear Ms. Laskowski:

We are writing to express our support for the California Air Resources Board's (CARB) proposal to increase stringency of the Low Carbon Fuel Standard (LCFS), and to encourage CARB to consider additional pathways to achieve compliance, including **expressly including pathways for innovative carbon dioxide removal (CDR) technologies to contribute to the reduction of atmospheric greenhouse gasses under the program.**

This letter's signatories represent different parts of the emerging carbon removal ecosystem, including leading buyers of carbon removal and technology developers. Together, our companies represent billions of dollars of investment in California and are fully committed to addressing climate change. California is taking strong steps toward emissions reductions through promotion of clean energy and clean fuels, critical climate change mitigation strategies. But achieving carbon neutrality by 2045 will require both radical emissions reductions and the permanent removal of significant amounts of carbon from the atmosphere every year. As California considers updates to foundational policies like the LCFS to mitigate emissions in the transportation sector, it is well-positioned to align its policy with emerging opportunities to permanently remove carbon, accelerating the development of these innovative solutions and strengthening the state's ability to meet its ambitious goals - including improving opportunities for compliance both in the medium- and long-term as the rule becomes more stringent.

**Enabling High-Quality Carbon Removal**

We strongly encourage CARB to consider opening additional pathways for credit generation through carbon removal. The pathway for direct air capture as a CDR technology is a critical component of the current LCFS program. CARB has broad latitude to develop programs that reduce emissions and can develop new pathways for technologies that are validated, verified, and prove their efficacy - CARB has most recently done this for direct air capture technologies. California's commitment to climate and technological innovation is widely recognized, and the development of a broader carbon removal pathway would directly align with state goals.

Rather than limit carbon removal technologies able to create CDR credits under the LCFS program, we encourage CARB to open the door to pathway development across carbon removal technologies, and specifically to consider enabling CDR credit generation for any carbon removal that is:

1. **Durable:** Removes carbon from the environment for at least 1,000 years. A carbon emission is functionally permanent, and, therefore, any removal effort must similarly be permanent.
2. **Additional:** Demonstrably results in net new carbon being removed, rather than taking credit for removal that would have occurred otherwise.
3. **Verifiable:** Uses scientifically rigorous and transparent methods for measurement, monitoring and verification, and calculates net removal using a cradle-to-grave LCA.
4. **Safe:** Legally compliant and actively engaging with the public to determine and mitigate possible risks, negative externalities, and environmental justice concerns.
5. **Goal Aligned:** Approved carbon removal for the LCFS should be defined to include only those removals that support California's long-term climate and environmental justice goals.

### **Justification for Carbon Removal**

California policy sets ambitious climate goals, and policy has recently highlighted the critical importance of carbon removal in achieving these goals. Executive Order B-55-18, which established key goals of 40% carbon emissions reduction by 2030 and carbon neutrality by 2045, also requires California to “achieve and maintain net negative emissions thereafter”.

Carbon dioxide removal is vital to achieving net-negative emissions, backed by [IPCC's 2022 reports](#) which emphasize that rapid and deep decarbonization across all sectors is critical to limit warming to 1.5°C, with CDR as the mechanism to remove the toughest residual emissions once other strategies have been applied. [SB 905](#), passed in September, will create the Carbon Capture, Removal, Utilization, and Storage Program by 2025 with structures for permitting, public information access, and financial responsibility regulation. However, there is still an existing investment gap: this is where the LCFS can provide a proactive mechanism for driving innovation and scale.

Enabling a broad range of carbon removal projects to participate - in line with the pathway already approved for direct air capture credit creation - would address California's goals of overall emissions reductions and promoting cleaner transportation fuels by encouraging the development of technologies and projects that are not designed solely to enable fossil fuel production to continue.

Taking a technology-neutral approach that opens the door to new pathway development across carbon removal technologies avoids any unintentional preclusion of viable carbon removal projects and greatly increases the likelihood of California meeting its goal of carbon neutrality by 2045.

## Conclusion

CDR represents a major opportunity for California to continue to play a global climate leadership role while also supporting state-based investments in clean technologies, creating jobs and delivering a host of other environmental and community-based benefits, including improving air quality, forest fuels reduction, ocean de-acidification and natural and working lands resilience. To capture the critical benefits of permanent CDR, California needs a clear strategy to achieve the significant volume of carbon removal that Governor Newsom has called for to be incorporated into the *2022 Scoping Plan* that the Board recently adopted. CARB can take an important step toward that comprehensive strategy by supporting CDR growth through the LCFS and the Carbon Capture, Removal, Utilization, and Storage Program.

We appreciate the opportunity to submit comments, and look forward to collaborating with CARB and other stakeholders.

Sincerely,

Jane Flegal, Market Development & Policy Lead, Stripe Climate

Peter Reinhardt, Co-Founder and CEO, Charm Industrial

Mike Kelland, CEO and Co-Founder, Planetary Technologies

Nicholas Chadwick, CEO and Co-Founder, Mission Zero Technologies

Drew Felker, CEO, Carboniferous

Rahul Shendure, CEO, CarbonBuilt

Laura Lammers, CEO, Travertine Technologies

Gaurav N. Sant, UCLA's Institute for Carbon Management

Edward Muller, President, SeaChange Inc. and x/44 Inc.

Ethan Cohen-Cole, CEO and Co-Founder, Capture6

Jim Mann, CEO, UNDO

Ben Tarbell, CEO, Ebb Carbon

Andrew Fishbein, Senior Climate Policy Manager, Climeworks

Karan Khimji, Co-Founder and CCO, 44.01

Tom Green, CEO, Vesta

Adam Wolf, CEO, Eion Corp