

February 20, 2024

California Air Resources Board
P.O. Box 2815
Sacramento, CA 95812
[submitted electronically]

RE: Comments On Proposed Low Carbon Fuel Standard Amendments

Remora values the chance to share input on the Staff Proposed Amendments to the California Air Resources Board's (CARB) Low Carbon Fuel Standard (LCFS). Our commitment extends to collaborating with CARB, its State agency partners, and all stakeholders to contribute innovative climate solutions with broad-reaching benefits in California and beyond.

About Remora & Mobile Carbon Capture Technology

[Remora](#) designs and manufactures an **innovative engine exhaust technology that captures carbon dioxide (CO₂) directly from heavy, hard-to-decarbonize mobile sources**, including Class 8 heavy-duty vehicles (semi-trucks). Using Remora's mobile carbon capture and storage (MCCS) technology, semi-truck exhaust is diverted to a carbon capture unit, which aims to capture approximately 80% of CO₂ emissions generated by the semi-truck (as well as approximately 75% of nitrous oxide emissions), before the exhaust is released into the atmosphere. The captured CO₂ is compressed, stored onboard, and then offloaded at designated sites that are co-located at refueling or cargo-loading infrastructure sites. All captured CO₂ can be safely and permanently disposed of via underground sequestration or utilized within other products and industries.

Semi-trucks are essential to our economy, delivering over 70% of goods that Americans use. Unfortunately, semi-trucks are also extremely high greenhouse gas (GHG) emitters and difficult to decarbonize. The approximately two million semi-trucks in operation today emit approximately 340 million metric tons of CO₂ per year. In addition, these high-emitting semi-trucks will be on the roads for decades to come, given the investments made by companies to purchase these vehicles and the need for these vehicles to support supply chain needs across the United States. Remora's MCCS technology has the power to decarbonize existing trucks and, if coupled with the use of biofuels, can result in semi-truck operations with a negative carbon intensity score.

To date, Remora has partnered with numerous nationally significant companies, including three in the Fortune 10 and numerous in the Fortune 500, to install its carbon capture equipment on their semi-trucks. Market demand for Remora's technology is extremely high as companies seek to reduce their CO₂ emissions. Remora's MCCS technology, and that developed by other MCCS companies, is uniquely poised to offer major decarbonization benefits while also supporting the growth of small businesses, helping to remedy environmental justice injustices and inequalities, advancing further innovations in CCS technology, and more, as described further below:

- Air Quality Benefits: Remora's MCCS technology acts as a filter on engine exhaust. Along with capturing CO₂, it demonstrates the potential to drastically improve air quality by reducing toxic air pollutants like nitrogen oxides by approximately 75%. These benefits could immediately serve low-income and disadvantaged communities that are most affected by vehicle emissions due to their proximity, in many cases, to highways and other major roadways.
- Scalable Impact: The decarbonizing impact of Remora's technology has the potential to rapidly scale. Each Remora MCCS unit is equivalent to removing approximately 30 passenger vehicles from the road per year. Remora's carbon capture units can capture and store 1,000,000 metric tons of CO₂ annually just by installing MCCS units on about 7,500 semi-trucks. With millions of semi-trucks in the United States, the opportunity for MCCS is enormous and increases further when utilized for other mobile sources of CO₂ emissions.

Remora's device and other mobile carbon capture technologies can quickly address the most difficult sectors to decarbonize, including heavy-duty trucking, vessel shipping, and rail. Remora has signed on to group comments with the Mobile Carbon Capture Coalition, which shows the breadth of the industry and the additional work being done across the world.

Remora Supports a Strong LCFS

California's transportation sector is the State's largest source of both greenhouse gas emissions and air pollution, accounting for more than half of statewide GHG emissions.¹ Rapidly driving down these emissions is a critical element of California's strategy to achieve carbon neutrality. As described in the 2022 Scoping Plan Update, the transition to zero-emission technology will take time as internal combustion vehicles will remain on the roads in California for decades to

¹ See Draft 2022 Scoping Plan Update, pg. 147.

come. The modeling for the Scoping Plan indicates that even in 2045, significant volumes of liquid fuels, including fossil fuels, are likely to remain in California’s transportation fuel mix.² Solutions that can significantly reduce—and even fully eliminate—greenhouse gas emissions from California’s transportation sector will be key.

Remora supports CARB’s accelerated carbon intensity (CI) reduction target of 30% by 2030 as proposed by Staff in these LCFS amendments. Remora encourages CARB to consider even more ambitious CI targets to drive California towards its climate goals. For this reason, Remora also supports the inclusion of an auto-acceleration mechanism that will increase the stringency of LCFS if the program over-performs. This mechanism will help to ensure that California will continue to achieve emissions reductions and will provide additional incentives for investment in clean transportation fuels and technologies.

LCFS should be positioned to incorporate Mobile Carbon Capture Technologies

Given the scale and scope of the challenge to meet California’s GHG reduction targets, the State cannot afford to limit any approaches that can contribute to this effort. As CARB works to refine LCFS, **Remora urges CARB to ensure that it optimally positions California to reap the benefits that innovative and proven technologies like MCCS can provide.**

Incorporating additional technologies into the existing CCS Protocol within the LCFS Regulation, which recognizes the role CCS can play in decarbonizing the production of transportation fuels, will be key.

By incorporating MCCS into the LCFS, California can work towards even more ambitious transportation decarbonization targets, which will provide climate, air quality, and public health benefits to Californians.

Remora appreciates the opportunity to submit comments, and we look forward to continuing to work with you and all stakeholders in California on this critically important effort.

Sincerely,



Alexandra Frumar
Chief Legal & Policy Officer

² See Draft 2022 Scoping Plan Update, pg. 153.