To CARB Staff

From Robert Mason

Date: June 10, 2022

Re: Draft 2022 Scoping Plan Update 5/10/2022, Proposed Strategies for Carbon Removal and Sequestration

P. 66, para. 1: *There are numerous other carbon removal options under research, development, and pilot deployment. As those mature and new types emerge, those would be considered for future scoping plan updates.*

A new type of Carbon Capture and Storage (CCS) has emerged, *mobile CCS* (MCCS), and is presently in small scale production. The producing company has targeted semi-trailer trucks for its initial production. The MCCS unit is mounted to the back of the cab and is currently capable of collecting 80% of the CO_2 emissions from the truck's diesel engine using a zeolite absorber and 7 standard gas cylinders (Remora, 2022). The CO_2 is offloaded when the cylinders become full. The potential of this new device to capture CO_2 at a tailpipe concentration of around 13% rather than a free-air concentration of around 400 ppm or 0.04% could make it vastly more efficient (325x) and cost effective than any free-air CCS system. See the company's vision page for more a broader discussion https://remoracarbon.com/vision/.

Although the company presently sells the gas product to cement factories and other operations, large scale deployment would require sequestration in geologic formations such as the San Joaquin valley. This is where a CARB program using its 2018 CCS Protocol (p. 67, para 1) would be useful to support a large scale MCCS deployment.

Given CARB's success in the past with catalytic converters, diesel particulate matter filters, and the development of low and ultra-low emissions engines, CARB could drive a large-scale deployment to the point where MCCS could be required for all internal combustion engine Class 7 and Class 8 trucks as first priorities, followed by other classes as equipment kits become available. This is a far better outcome than the 40% electrification of those classes proposed by CARB's Advanced Clean Trucks (ACT) program for these classes in the year 2035 (CARB, 2022, p. 9).

Disclaimer: I am not affiliated with Remora in any way. I did send them an email note to alert them of the 2022 CARB Scoping Process. I am a graduate student of Urban and Regional Planning at San Jose State University. This note is an extracurricular activity.

Robert Mason
robert.mason@sjsu.edu

References

CARB. (2022, May 4). *Advanced Clean Fleets Staff Presentation, May 4, 2022.* Retrieved Jun 7, 2022, from Advanced Clean Fleets: https://ww2.arb.ca.gov/sites/default/files/2022-05/220504acfpres_ADA.pdf

Remora. (2022). *Remora*. Retrieved from Remora Carbon: https://remoracarbon.com/