

REMORA

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Re: Chapter 173-424 WAC, Clean Fuels Program Rule

Remora appreciates the opportunity to provide comments on the April 13th version of the draft Clean Fuel Standard rule. Our comments concern mobile carbon capture in the transportation sector.

Background on Remora

Remora is a climate technology start-up based just outside of Detroit, Michigan. Remora designs and manufactures a **novel carbon capture system that captures carbon dioxide (CO₂) directly from the exhaust of heavy, hard-to-decarbonize mobile sources** (“mobile carbon capture”).

Currently, the technology is in development for Class 8 heavy-duty trucks (“semi-trucks”). The **device captures over 75% of the CO₂ that would otherwise be emitted from the semi-truck**, directly from its tailpipe. The captured CO₂ is compressed, stored onboard, and then offloaded by drivers at designated sites that coincide with refueling or cargo loading. **All CO₂ is then permanently disposed of** via underground sequestration or utilization (i.e., in products). Remora’s technology also significantly reduces tailpipe nitrogen oxide (NO_x) emissions.

Remora’s technology is **based on an existing, proven carbon capture method**. The technology retrofits onto existing trucks, is easy to install and operate, and weighs significantly less than earlier prototypes ensuring that trucks maintain a significant payload. Remora will launch multiple pilot projects later this year with national industry partners, including Pepsi, Proctor & Gamble, and Ryder. Remora is exploring pilot projects in Washington as well.

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. Carbon-free semi-trucks, vessel shipping, and rail are likely still decades away from full

deployment. Remora's technology is **a critical bridge for these sectors**. It offers the chance to **decarbonize combustion the mobile sources that are in operation now** and for the next decades until we reach 100% ZEV.

See Remora's [website](#), [white paper](#), or this [short video](#) for more information.

Mobile Carbon Capture Will Advance the Clean Fuels Standard Program

We believe the Washington State Legislature, when enacting the Clean Fuels Statute, intended the program to adopt a technology-neutral approach that would accommodate mobile carbon capture. While *mobile* carbon capture is not explicitly called out, in multiple sections the statute points to "carbon capture and sequestration" generally and uses the phrase "including but not limited to" to emphasize that multiple carbon capture technologies be included. *See e.g.*, RCW 70A.535.050 ("the rules...may allow the generation of credits ...from carbon capture and sequestration projects, including but not limited to...direct air capture").

Elsewhere, the statute directs Ecology to consider "any permanent greenhouse gas sequestration activities" when determining the greenhouse gas emissions of a particular fuel. *See* RCW 70A.535.030. **If Remora's device was attached to a refinery, it would clearly qualify for credits within the Tier 2 pathway. Instead, because it attaches to a semi-truck, it falls into a gray area in the draft rule. However, the climate does not differentiate between carbon capture at the refinery or the tailpipe, so neither should the rule.** Furthermore, the statute asks Ecology to craft the rule such that it does not select winners and losers, and instead will "spur economic development based on innovative transportation technologies." RCW 70A.535.005(3)(c). We appreciate the considerable work done to develop the draft rule and would like to offer three comments to ensure it accommodates innovative technology, including mobile carbon capture.

First, we support the inclusion of carbon sequestration in the Tier 2 pathway as drafted. While we understand that protocols and key details will be developed later, **the rule would benefit from acknowledging the key principles for carbon sequestration now. We suggest these principles be 1) permanence and 2) technology neutrality.** Even as Ecology develops the protocols later, these principles will signal to market participants what practices may qualify and provide initial guidance as to the later structure of the program.

Second, we believe the Legislature intended that innovative fueling infrastructure applicable to heavy trucks, beyond just hydrogen and electric charging, be granted an opportunity to generate credits. *See* RCW 70A.535.050(2)(b). Because Remora's technology applies to end-users (rather than fuel producers) it is more difficult to incorporate into the Tier 2 fuel pathway. Instead, Remora's capture and storage infrastructure will convert a fleet of traditional trucks into

a low-carbon fleet. We believe the rule would benefit from a technology-neutral pathway for heavy-truck fuel infrastructure to generate credits as allowed under RCW 70A.535.050(2)(b).

As this sector is among the furthest from full decarbonization, such a pathway is unlikely to detract from electric or hydrogen fueling credits. However, **the April 13th rule only accommodates low carbon fueling infrastructure that is hydrogen or electric or a Tier 2 pathway.** See proposed WAC 173-424-GCCZFI. **We believe this is a missed opportunity and will limit the rule's effectiveness by preventing novel and innovative fueling infrastructure technologies from participating in the program.**

Finally, we believe the rule would benefit from a pathway that recognizes carbon capture and sequestration as a standalone credit-generating pathway as authorized in RCW 70A.535.050(1)(a). This would also accommodate Remora and a host of other innovative sequestration technologies. If Ecology believes that mobile carbon capture infrastructure should be considered under the carbon sequestration provisions of the rule, instead of the fueling infrastructure provisions, then a technology-neutral standalone sequestration pathway should be crafted that accommodates mobile carbon capture.

Thank you for considering these comments. We look forward to continuing to engage with Ecology during the development of the Clean Fuel Standard program.

Sincerely,

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