

# Twelve Benefit Corporation

Please see the attached for Twelve's informal comments.



June 7, 2024

Submitted electronically at <https://ecology.commentinput.com/?id=7auJYTbfk>

Mr. Adam Saul  
Clean Fuel Standard Rule Lead  
Climate Pollution Reduction Program  
Washington State Department of Ecology  
P.O. Box 47600  
Olympia, WA 98504-7600

Re: Informal Comments on the May 2, 2024, Public Meeting on the Clean Fuel Standard (CFS) Rulemaking

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Dear Mr. Saul:

Twelve Benefit Corporation (Twelve) appreciates the opportunity to provide these informal comments on the Department of Ecology's (Ecology) forthcoming proposal to update the Clean Fuels Program (CFP) Rule (i.e., Chapter 173-424 of the Washington Administrative Code (WAC)), and in particular on the materials presented by Ecology staff during the May 2, 2024, public meeting on the rulemaking.

By way of background, Twelve is the carbon transformation™ company. Based in Berkeley, California, our proprietary electrochemical technology takes captured carbon dioxide (CO<sub>2</sub>) and, using only water and renewable electricity, transforms it into synthesis gas (syngas), a combination of carbon monoxide and hydrogen. Once formed, the syngas is routed through an integrated Fischer-Tropsch reactor and then upgraded, ultimately resulting in our E-Jet® fuel – Power-to-Liquid Sustainable Aviation Fuel (PtL SAF) that meets the specifications in Annex A1 of ASTM International's D7566 Standard (*Standard Specification for Aviation Turbine Fuel Containing Synthesized Hydrocarbons*) – as well as our E-Naphtha™.<sup>1</sup> We expect our E-Jet, which has been tested and validated under a grant from the U.S. Air Force,<sup>2</sup> to reduce lifecycle greenhouse gas emissions by up to 90% in comparison to conventional, petroleum-based jet fuel.

Last summer, we began constructing our first facility, a demonstration-scale plant, in Moses Lake, Washington. The Moses Lake AirPlant™, which will utilize locally sourced hydropower to transform CO<sub>2</sub> captured from a nearby ethanol facility, will have a water electrolyzer operating alongside our proprietary CO<sub>2</sub> electrolyzer. We are on schedule to begin regularly producing E-Jet (and E-Naphtha) at the plant by this time next year, and note that the E-Jet will qualify as

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<sup>1</sup> For more on Twelve and carbon transformation, please visit our website at <https://www.twelve.co/>. Further information on PtL SAF, including how it compares to other types of SAF, can be found in the *Know Your SAF* report posted at <https://www.twelve.co/post/know-your-saf>.

<sup>2</sup> See <https://www.af.mil/News/Article-Display/Article/2819999/the-air-force-partners-with-twelve-proves-its-possible-to-make-jet-fuel-out-of/>.

“alternative jet fuel” for purposes of the CFP (both under WAC 173-424-110(8) as it presently reads and as that language will be revised so as to align with the definition in RCW 70A.535.010(1), which stems from Senate Bill (SB) 5447).

As a preliminary matter, we support Ecology’s overarching rulemaking goal of “align[ing] the CFS with SB 5447 to further incentivize the production and use of low carbon intensity [SAF] in Washington.”<sup>3</sup> The Washington State Legislature made clear in that measure that SAF is “the most significant near and midterm opportunity for aviation to reduce its [GHG] emissions,” and that the Legislature wanted “to assist and accelerate” efforts to advance the use of SAF in Washington.<sup>4</sup> Updating the CFP Rule to further incentivize SAF production and use is entirely consistent with that legislative intent, especially considering that, per the statute, the various tax incentives established in Part II of SB 5447 will not be available to SAF producers and others until the 20 million gallon cumulative annual in-state production capacity level is reached.

Twelve strongly encourages Ecology, via the CFS rulemaking, to codify in the CFP Rule the Interpretive Statement that it issued this past January. Under the Interpretive Statement, a “utility-specific carbon intensity can be used for the total electricity consumed by electrolysis equipment in an integrated SAF production process, if the equipment co-produces other chemicals, in addition to electrolytic hydrogen, that are used as feedstock to produce SAF.”<sup>5</sup> This language should be transcribed into regulatory text and added to the CFP Rule.

In addition, Ecology should indeed enable zero-carbon intensity electricity (e.g., solar, wind, hydropower) that is used in the production of SAF or electrolytic hydrogen to be claimed through book-and-claim accounting. We agree that this would align with the Legislature’s goal, as expressed in SB 5447, “of increasing in-state SAF production.”<sup>6</sup> As indicated during the Q&A portion of the May 2, 2024, public meeting, this allowance would also ensure consistency with the federal government’s approach to renewable electricity sourcing for SAF production facilities as reflected in the 40BSAF-GREET 2024 Model.<sup>7</sup> Consistency between the federal and Ecology approaches to book-and-claim accounting in the hard-to-decarbonize aviation sector is, in our

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<sup>3</sup> Slide 6 of Ecology’s May 2024 Presentation.

<sup>4</sup> Sec. 1 of Chapter 232, Laws of 2023, available at <https://leg.wa.gov/CodeReviser/documents/sessionlaw/2023pam2.pdf>.

<sup>5</sup> Publication No. 24-14-013, at 4 (Jan. 4, 2024), available at <https://apps.ecology.wa.gov/publications/SummaryPages/2414013.html>.

<sup>6</sup> Slide 14 of Ecology’s May 2024 Presentation. Perhaps this adjustment could be made, for example, by revising the introductory sentence in WAC 173-424-630(5) so that it reads as follows: “In order to lower the carbon intensity of electricity used in the production of alternative jet fuel or electrolytic hydrogen or claimed as a vehicle fuel in the clean fuels program, . . . .”

<sup>7</sup> See U.S. Department of Energy, *Guidelines to Determine Life Cycle Greenhouse Gas Emissions of Sustainable Aviation Fuel Production Pathways using 40BSAF-GREET 2023*, at 13-14 (April 2024), available at [https://www.energy.gov/sites/default/files/2024-04/40bsaf-greet\\_user-manual.pdf](https://www.energy.gov/sites/default/files/2024-04/40bsaf-greet_user-manual.pdf). While the “specified source option” technically only applies to lifecycle GHG emissions calculations for so-called HEFA SAF and ATJ SAF, there is no reason to think the federal government’s approval of book-and-claim accounting for electricity will not also apply to other SAF production pathways (e.g., PtL SAF) under the Clean Fuel Production Credit in section 45Z of the federal tax code.

view, both warranted and necessary.

Thank you for your consideration of these comments. We look forward to the impending release by Ecology of draft CFP Rule language, and will continue to remain engaged in the rule development phase as well as the later, formal rule proposal stage of this important Ecology rulemaking.

Please do not hesitate to contact me or Ira Dassa ([ira.dassa@twelve.co](mailto:ira.dassa@twelve.co)) if you have any questions.

Sincerely yours,

*Andy Stevenson*

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