



August 27, 2024

Submitted electronically at <https://ww2.arb.ca.gov/lispub/comm/bclist.php>

Clerk's Office  
California Air Resources Board  
1001 I Street  
Sacramento, CA 95814

Re: Twelve Benefit Corporation Comments on CARB's 15-Day Notice on the Proposed  
Low Carbon Fuel Standard Amendments

---

Dear Sir/Madam:

Twelve Benefit Corporation (Twelve), which submitted written comments earlier this year on the California Air Resources Board's (CARB) Low Carbon Fuel Standard (LCFS) 45-day rulemaking package as well as on the April 10, 2024, LCFS workshop that CARB convened, appreciates the opportunity to provide the following comments on the 15-Day Notice and accompanying 15-Day Changes that CARB issued on August 12, 2024.<sup>1</sup> (Please note that Twelve is also a signatory of the comment letter submitted today on behalf of various entities with an interest in Power-to-Liquid (PtL) fuels.)

We write today concerning the proposed 15-Day revision to the LCFS Program's definition of "alternative jet fuel," which would add to the definition an explicit reference to "captured CO<sub>2</sub>." This modification, shown on page 5 of Attachments A-1 and A-1.1, would appropriately recognize that alternative jet fuel (AJF) may be produced via the PtL pathway, which, as we detailed in our earlier comment letters, combines captured CO<sub>2</sub> with clean hydrogen derived from the electrolysis of water using renewable/low-carbon intensity (low-CI) electricity (e.g., solar, wind, hydropower). CARB, of course, has acknowledged in this rulemaking that "there is a growing interest in producing synthetic fuels by combining hydrogen with captured CO<sub>2</sub>."<sup>2</sup> We emphasize in this regard that we expect to begin regularly producing our E-Jet<sup>®</sup> fuel (as well as E-Naphtha<sup>™</sup>) at our AirPlant<sup>™</sup> in Moses Lake, Washington by mid-2025. As previously explained, we project that our E-Jet will reduce lifecycle greenhouse gas (GHG) emissions by up to 90 percent in comparison to fossil jet fuel.

---

<sup>1</sup> Posted at <https://ww2.arb.ca.gov/rulemaking/2024/lcfs2024>. Our February 20, 2024, comment letter is available at [https://www.arb.ca.gov/lispub/comm/iframe\\_bccomdisp.php?listname=lcfs2024&comment\\_num=6888&virt\\_num=224](https://www.arb.ca.gov/lispub/comm/iframe_bccomdisp.php?listname=lcfs2024&comment_num=6888&virt_num=224), a joint letter that we submitted with several other companies can be found at <https://www.arb.ca.gov/lists/com-attach/7030-lcfs2024-VD4AaQRsU25SIABf.pdf>, and our May 10, 2024, feedback on the LCFS workshop is posted at [https://ww2.arb.ca.gov/system/files/webform/public\\_comments/11106/Twelve%20Feedback%20on%20April%2010%20LCFS%20Workshop.pdf](https://ww2.arb.ca.gov/system/files/webform/public_comments/11106/Twelve%20Feedback%20on%20April%2010%20LCFS%20Workshop.pdf).

<sup>2</sup> See Appendix E: Purpose and Rationale of Proposed Amendments for the Low Carbon Fuel Standard Requirements, at 59 (Jan. 2, 2024).

While we fully support the proposed modification to the AJF definition, we cannot help but observe that it likely will be inconsequential and amount to a definitional change without any real significance or impact. That is because, based on the full contents of the 15-Day Notice and accompanying materials, it is apparent that CARB has opted not to put in place regulatory provisions that would promote rather than inhibit the production and in-state uptake of ultra-low carbon intensity PtL sustainable aviation fuel (SAF) such as Twelve's E-Jet (and potentially other PtL transportation fuels). More to the point, to our dismay, CARB has not included in the 15-Day Changes proposed language that would allow fuel producers like Twelve to use indirect accounting mechanisms (e.g., Renewable Energy Certificates) to account for the low-CI electricity that is crucial to the PtL fuel production process. What is more, while CARB has seen fit in the 15-Day materials to undo some aspects of what it had initially proposed in the 45-Day package, it has not seen fit to reverse course and at least retain the language in section 95488.8(i) that enables fuel producers to use book-and-claim accounting for low-CI electricity when the electricity is used to make hydrogen that is then used in the production of another transportation fuel (e.g., PtL SAF).

These omissions from the 15-Day package make it quite clear that Twelve or any other PtL fuel producer keen on participating in the LCFS Program effectively has no choice but to co-locate its PtL fuel production facilities with, or otherwise ensure the facilities have a direct, behind-the-meter connection to, a renewable power source, an arrangement that is often impractical and infeasible (and in the case of hydropower, difficult or physically impossible to accomplish). As we have conveyed to our potential customers and others, the upshot of this almost certainly will be no E-Jet (or any other company's PtL SAF) flowing into California for uplift at airports there.

In short, if the 15-Day Changes (along with the initial 45-Day amendments) are finalized as proposed, PtL SAF technically would be encompassed within the Program's AJF definition, but fuel producers' inability to procure low-CI electricity via indirect accounting mechanisms would effectively mean the exclusion of PtL SAF (and other PtL transportation fuels) from the LCFS Program. This result would be in contradiction to CARB's assertion in its Initial Statement of Reasons that "the proposed amendments, and the LCFS more broadly, are structured to encourage . . . investment in . . . carbon capture [and] utilization . . . approaches."<sup>3</sup> Rather than providing encouragement for the production and in-state use of PtL SAF (and other PtL transportation fuels, all of which constitute a prime example of carbon capture and utilization<sup>4</sup>), CARB would be hampering it.

In its comprehensive report earlier this year on the role of PtL fuels in decarbonizing transport, the International Energy Agency (IEA) stressed that "[g]overnments need to take bolder action

---

<sup>3</sup> See Staff Report: Initial Statement of Reasons, at 80 (Dec. 19, 2023).

<sup>4</sup> See, e.g., National Academies of Science, Engineering, and Medicine, *Carbon Utilization Infrastructure, Markets, and Research and Development: A Final Report* (2024), available at <https://nap.nationalacademies.org/catalog/27732/carbon-utilization-infrastructure-markets-and-research-and-development-a-final>; U.S. Department of Energy, "Clean Fuels & Products Shot™: Alternative Sources for Carbon-based Products," available at <https://www.energy.gov/eere/clean-fuels-products-shottm-alternative-sources-carbon-based-products>; European Commission, "Questions and Answers on the EU Industrial Carbon Management Strategy" (Feb. 6, 2024), available at [https://ec.europa.eu/commission/presscorner/detail/en/qanda\\_24\\_586](https://ec.europa.eu/commission/presscorner/detail/en/qanda_24_586).

to stimulate demand for low-emission e-fuels.”<sup>5</sup> Twelve urges CARB to heed this advice and simultaneously make the proposed AJF definitional modification a meaningful one by incorporating into the LCFS amendments package language that would enable book-and-claim accounting for the low-CI electricity that is integral to the production of PtL SAF (and other PtL transportation fuels). *With the first barrels of E-Jet slated to be produced at our Moses Lake AirPlant by this time next year, and with other companies moving forward with their own PtL SAF production facilities, now is the time, not several years down the road, for CARB to put in place regulatory provisions that will foster the production and in-state uplift of this innovative, ultra-low carbon intensity jet fuel.* By virtue of its deep lifecycle GHG emissions reductions, PtL SAF is well positioned to contribute significantly to the decarbonization of California’s aviation sector and the overarching state goal, enshrined in the California Climate Crisis Act, of achieving an 85 percent reduction in anthropogenic GHG emissions (below 1990 levels) by 2045.<sup>6</sup> We respectfully request that CARB recognize this in the LCFS Program.

\* \* \*

Thank you for your consideration of our comments. 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,

*Andrew Stevenson*

Andy Stevenson  
Vice President of Commercial  
Twelve Benefit Corporation  
[andy.stevenson@twelve.co](mailto:andy.stevenson@twelve.co)

---

<sup>5</sup> IEA, *The Role of E-Fuels in Decarbonising Transport*, at 9 (Jan. 2024), available at <https://iea.blob.core.windows.net/assets/a24ed363-523f-421b-b34f-0df6a58b2e12/TheRoleofE-fuelsinDecarbonisingTransport.pdf>. More recently, the Alliance for Renewable Clean Hydrogen Energy Systems, a/k/a ARCHES, which the Governor’s Office of Business and Economic Development co-founded almost two years ago, has called for “incentivizing the use of low-carbon hydrogen as an input to liquid SAF production . . . .” See ARCHES, *White Paper Overview*, at 23 (Aug. 8, 2024), available at <https://archesh2.org/wp-content/uploads/2024/08/ARCHES-White-Papers-Overview-8.8.24.pdf>.

<sup>6</sup> See Health & Safety Code, section 38562.2(c).