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April 21, 2025

VIA ELECTRONIC FILING
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The Honorable Liane M. Randolph, Chair
California Air Resources Board
1001 I Street
Sacramento, CA 95814

RE: Gevo, Inc.'s Comments on the Third 15-Day Notice of Changes to the Proposed Low Carbon Fuel Standard Amendments

Dear Chair Randolph:

Gevo, Inc. ("Gevo") appreciates this opportunity to comment on the California Air Resources Board ("CARB") Third 15-Day Notice of Changes to the Proposed Low Carbon Fuel Standard ("LCFS") Amendments, issued on April 4, 2025 (hereinafter "Third 15-Day Notice") in response to the California Office of Administrative Law's "Decision of Disapproval of Regulatory Action"[1] ("OAL Decision"). Gevo submitted comments on CARB's proposed LCFS amendments on February 20, 2024, on the content of the CARB Workshop held on April 10, 2024, on the first 15-Day notice on August 27, 2024, and on the second 15-Day notice on October 15, 2024, and we incorporate each of those comments here by reference.[2] Although we continue to urge CARB's consideration of all of the comments we previously submitted, the comments here relate to areas elaborated in the Third 15-Day Notice in response to the OAL Decision, as specified by CARB in that notice.[3]

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[1] State of California, Office of Administrative Law, "Decision of Disapproval of Regulatory Action," (February 25, 2025).

[2] *See* Gevo, Inc.'s "Comments on Proposed Amendments to the Low Carbon Fuel Standard" (February 20, 2024) (available as Comment #196 in CARB's Public Comments Received portal); Gevo, Inc.'s "Comments on the Low Carbon Fuel Standard Workshop, April 10, 2024" (May 10, 2024) (available in CARB's LCFS Meetings and Workshops portal); Gevo, Inc's "Comments on 15-Day Notice of Changes to the Proposed Low Carbon Fuel Standard Amendments" (August 27, 2024); and Gevo, Inc's "Comments on the Second 15-Day Notice of Changes to the Proposed Low Carbon Fuel Standard Amendments" (October 15, 2024).

[3] Third 15-Day Notice, at 3 (April 4, 2025) (noting that "staff will only address comments received during this 15-day comment period that are responsive to this notice, documents added to the record, or the changes detailed" in attachments to the notice).

As a refresher, Gevo's mission is to produce low-carbon, renewable energy-dense liquid hydrocarbons for drop-in transportation fuels such as gasoline, jet fuel, and diesel. Gevo currently is participating in the LCFS through our production of renewable natural gas ("RNG") from three dairies, for which we installed dairy-manure biomethane capture and upgrading equipment, thereby producing pipeline quality RNG rather than allowing the methane from the manure to continue to be released from the dairy lots. In addition, Gevo also has plans to participate in the LCFS with low-carbon products from our alcohol-to-hydrocarbons production process, which uses a combination of decarbonization technologies and sustainably farmed feedstock to produce fuels with substantially reduced carbon intensity ("CI") compared to fossil fuel equivalents.

We broke ground on our first alternative jet fuel ("AJF")/sustainable aviation fuel ("SAF")[4] production facility, "Gevo ATJ-60" ("ATJ-60"), which was previously known as Net-Zero 1, in Lake Preston, South Dakota, in September 2022. This facility will use a three-part strategy to produce low-CI SAF: 1) use locally-sourced corn feedstock from farmers engaged in sustainable agriculture to both reduce on-farm greenhouse gas ("GHG") emissions and sequester carbon dioxide ("CO_2") in the soil; 2) decarbonize the fuel production process by replacing conventional fossil fuel inputs with wind energy, renewable natural gas, and green hydrogen; and 3) use carbon capture and sequestration ("CCS") technology to reduce emissions from the production process further. The Gevo approach is aimed at decarbonizing every step in our SAF's life cycle, which we track all the way from the farm field through to the aircraft using our Verity Tracking platform. Upon completion of our ATJ-60 production facility, we intend to submit a Tier 2 LCFS Provisional Pathway application for the SAF, renewable diesel, and renewable naphtha fuels that will be produced at the ATJ-60 facility, utilizing our field corn starch feedstock and alcohol-to-jet ("ATJ")/alcohol-to-hydrocarbons production process.

Also, Gevo has purchased an ethanol plant in North Dakota that has a Class VI CCS well, which has a pathway application pending at CARB. While this facility will continue to operate as an ethanol facility for some time, Gevo has announced our intention to add SAF production capability to the facility in the future.

[4] Gevo typically uses the term "sustainable aviation fuel" or "SAF" to refer to our fuel. This fuel meets the definition of "alternative jet fuel" (AJF) as set forth in the LCFS regulations. Accordingly, our references to SAF in this comment letter should be deemed synonymous with AJF.

I. Gevo Urges CARB to Move Forward in Finalizing the LCFS Revision Package with the Proposed Strengthening of the Compliance Curve, Stepdown, and Automatic Acceleration Mechanism

Gevo urges CARB to move forward to promptly finalize the LCFS revision package. As Gevo has noted in our previous comments, key elements of that package, including the near-term CI stringency increase (i.e., "stepdown"), the strengthening of the overall compliance curve, and the adoption of an Automatic Acceleration Mechanism ("AAM") are needed to help meet the State's climate objectives.

Up to now, the LCFS has been a successful program, exceeding its initially projected carbon reductions through what CARB has referred to as "overperformance." Although the LCFS has supported the production of a greater quantity of low-carbon fuels during a certain timeframe than originally projected, Gevo notes that labelling this phenomenon as "overperformance" is a bit of a misnomer. In actuality, given the State's aggressive carbon emissions reduction and climate goals, and the challenges associated with meeting them, the situation might better be referred to as underperformance of the CI targets and implementing mechanisms. As CARB has recognized, because the volume of low-carbon fuel has exceeded projections, the credit prices have been reduced and the credit bank is unduly large, thereby threatening continuing success. Implementing the proposed near-term CI stepdown and AAM alongside the compliance curve/benchmarks revisions is necessary to address this. Accordingly, we urge CARB to move forward in adopting the LCFS revision package including these provisions.

II. Gevo Supports CARB's Confirmation of Three Ten-Year Crediting Periods for Early Adopters of Avoided Methane Projects (Section 95488.9(f)(3)(A))

In its OAL Decision, the OAL objected to the provision in Section 95488.9(f)(3)(A) stating that the Executive Officer of CARB "may" renew crediting periods for already certified avoided methane emissions projects from dairy and swine manure and landfill-diverted organic waste disposal for three 10-year periods, as the OAL found that the conditions under which the Executive Officer "may" do so were unclear. (OAL Decision, at 9). Gevo always understood the provision to mean that the Executive Officer "shall" do so as long as the avoided methane emissions projects meet applicable LCFS compliance requirements. CARB's explicit use of the word "shall" in the proposed revision to Section 95488.9(f)(3)(A), coupled with the clarification that the "shall" is conditioned on the requirement that avoided emissions projects must "otherwise continue to meet applicable eligibility requirements," is a helpful clarification and fully responsive to the OAL's comment. Accordingly, while Gevo continues to believe, as we spelled out in our previous comments, that no time limits should be placed on crediting periods for avoided methane projects, we support CARB's clarification that the

Executive Officer "shall" at least renew crediting for already certified avoided methane emissions projects for three 10-year periods.

III. The Land Use Change Accounting Approach in Section 95488.3(d) Overstates Potential Impacts and Has Internal Inconsistencies

The method CARB cites in 95488.3(d)(1) for accounting for land use change ("LUC," which, in CARB's usage addresses the potential for indirect land use change, or "iLUC") employs the GTAP-BIO model, which uses economic modeling to estimate LUC rather than empirical land change data. This is a modeled, not observed, land-use effect. It assumes that using agricultural land for biofuel feedstocks in one area indirectly causes agricultural expansion into other areas. ILUC modeling is highly speculative and riddled with inconsistencies. A 2022 review from IEA Bioenergy found that past iLUC models of corn ethanol were poor predictors of future land use change and suggested that assumptions underlying iLUC predictions needed to be fundamentally revisited (IEA Bioenergy, 2022). Indeed, the U.S. Environmental Protection Agency's ("EPA") data from the National GHG Inventory suggest that total U.S. cropland is decreasing despite higher volumes of biofuel production, demonstrating that empirical data do not support the conclusions of most iLUC models. Accordingly, in 2024, the U.S. Department of Energy's Argonne National Laboratory ("ANL"), along with EPA and the U.S. Department of Agriculture ("USDA"), updated iLUC and indirect emission values for implementation of the Section 45Z Clean Fuel Production tax credit. While the LUC value asserted for U.S. corn ethanol in Section 95488.3(d) stands at ~19.8 g CO2e/MJ, the iLUC value ANL determined in 2024 for U.S. corn ethanol is ~5.75 g CO2e/MJ, a significant decrease. In light of the most recent data, CARB should revise its LUC factor.

Further, while Gevo appreciates the clarifications CARB has made regarding when a new LUC assessment will be made, the new revisions have further confused the method that will be used to do the assessment. While subsection 95488.3(d)(2) stipulates that a conservative LUC value will be calculated "based on the same modeling framework specified in subsection 95488.3(d)(1)", it goes on to say that the Executive Officer will use satellite-based, empirical estimates of land cover change for the calculation. These two statements are at odds with one another. The method cited in 95488.3(d)(1) refers to the GTAP-BIO model, which uses economic modeling to estimate LUC rather than empirical land change data. Economic modeling accounts for induced land use change effects outside the feedstock being analyzed, for example, among other crops and among non-biofuel sectors. Hence, the scope of LUC considered in an economic model is broader than if one simply looks at the land footprint of the feedstock in question using empirical data. Applying an economic modeling approach to some feedstocks and an empirical approach to others will mean that feedstocks are not being assessed fairly and consistently and could disadvantage existing feedstocks that have already been assessed through economic modeling.

Conclusion

Thank you for the opportunity to comment on the Third 15-Day Notice of additional changes to the Low Carbon Fuel Standard amendments proposal. Please let us know if you have any questions regarding our comments.

Respectfully,

Kent Hartwig
Director of State Government Affairs
Gevo, Inc.

Nancy N. Young
Chief Sustainability Officer
Gevo, Inc.