EARTHJUSTICE
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Submitted electronically via Ecology Public Comment Form portal

Re: Earthjustice Comments on GREET 4.0

Dear Ms. Sanner,

Thank you for this opportunity to submit informal comments as the Department of Ecology ("Ecology") prepares to update the WA-GREET model. Earthjustice urges Ecology to use this rulemaking to correct flawed assumptions in the WA-GREET 3.0 model that hinder the Clean Fuel Standard's ("CFS") ability to appropriately reward fuel suppliers for their contributions to a transforming Washington's transportation sector and remove inaccurate or outdated assumptions that incorrectly prop up practices with questionable climate benefits. Specifically, Ecology should revisit WA-GREET's assumptions for the climate value of livestock biomethane. In addition, Ecology should ensure that outdated assumptions about the indirect land-use change ("ILUC") impacts of biofuel production do not undermine its efforts to incorporate up-to-date lifecycle analysis in the CFS. Finally, Ecology should release the draft WA-GREET 4.0 model and any calculators with a period for public comment.

WA-GREET should eliminate or sharply reduce avoided methane crediting.

Avoided methane crediting can substantially overstate the climate benefits of manure-derived methane when the assumed baseline emissions do not reflect an accurate counterfactual. Although Ecology's 2025 amendments established additional eligibility requirements, these safeguards do not eliminate the need to accurately account for counterfactual information. Currently, WA-GREET incorporates the false assumption that all biomethane captured from animal manure would have otherwise entered the atmosphere. However, a 2024 analysis from the Energy Institute at Haas (UC Berkeley) shows that avoided methane crediting overpays digesters relative to their actual climate value and can create unjustified windfalls.[1] Indeed, avoided methane crediting is even more difficult to justify in states with a colder climate than California—the state that invented the practice of avoided methane crediting. This is because manure lagoons will not produce much methane in the absence of heat, and dairies in cold

[1] Aaron Smith, *How Much Should Dairy Farms Get Paid for Trapping Methane*, Energy Institute at Haas (Oct. 13, 2024), https://energyathaas.wordpress.com/2024/10/14/how-much-should-dairy-farms-get-paid-for-trapping-methane/.

climates may intentionally warm their lagoons to create a steady supply of biomethane. One dairy operator explained this practice in stark terms:

> If I don't keep the digester between 90-100 degrees, we're not going to produce gas. So, we are being paid to create methane gas and destroy it. Now wrap your head around that one. If we just did what we normally did it would not produce methane … the absurdity of this idea, it makes no sense and you talk to the carbon offset people and they will admit this won't prevent global warming or climate change. This is a joke. They won't say that on record but in private. They may even say yea it's a joke … Farmers aren't gonna tell you this because they don't care. But I find it so amusing that people don't understand how it works.[2]

The federal government recently invested significant analytical resources in addressing the precise problem of identifying a reasonable counterfactual assumption for biomethane used as an energy resource. From this effort, the U.S. Department of Energy developed values for the 45VH2-GREET model that are meant to reflect the average avoided emissions associated with different sources of biomethane.[3] These values reflect the most generous level of avoided methane crediting that Ecology could reasonably allow, given the analysis that is available today.

Ultimately, avoided methane crediting undermines the transformation of the transportation sector toward zero-emission fuels because it allows the industry to continue business-as-usual remain dependent on fossil fuels, while essentially purchasing unverified offsets from the agricultural sector to cover their CFS obligations.[4] Subsequently, gasoline and diesel producers pass along the cost of these credits along to consumers. Avoided methane crediting can have a shockingly strong distortionary impact on a program's credit market, especially given the low popularity of methane-burning trucks.[5]

> *Ecology should ensure biogas-to-electricity does not generate credits disproportionate to climate benefits.*

If Ecology allows biogas-to-electricity pathways without reining in biogas credit generation, these pathways could generate credits that are not commensurate with their contribution to decarbonizing the transportation sector and that destabilize the market. Ecology should act now to address this risk. Under the approach described at the October 14, 2026, workshop, avoided methane and diverted carbon dioxide benefits would be adjusted based on electricity-generation

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[2] M. Hanna Pierce & Aaron L. Strong, *An Evaluation of New York State Livestock Carbon Offset Projects in California's Cap and Trade Program*, 14 Carbon Management 1, 9 (May 2023), https://www.tandfonline.com/doi/full/10.1080/17583004.2023.2211946.

[3] U.S. Dep't of Energy, *Clean Hydrogen Production Tax Credit (45V) Resources* (Jan. 3, 2025), https://www.energy.gov/articles/clean-hydrogen-production-tax-credit-45v-resources.

[4] Jeremy Martin, *Something Stinks: California Must End Manure Biomethane Accounting Gimmicks in its Low Carbon Fuel Standard*, Union of Concerned Scientists (Feb. 15, 2024), https://blog.ucs.org/jeremy-martin/something-stinks-california-must-end-manure-biomethane-accounting-gimmicks-in-its-low-carbon-fuel-standard/.

[5] *Id.* ("Vehicles powered by biomethane consume about one percent of California's transportation fuel, but in the first three quarters of 2023, biomethane used to fuel these vehicles accounted for 17 percent of LCFS credit generation.").

efficiency relative to a 50% benchmark.

Although adjusting these benefits for generation efficiency is a reasonable starting point, it does not resolve concerns about the accuracy of the underlying avoided methane assumptions. A facility with relatively low electricity-generation efficiency could still receive substantial avoided-emissions benefits if its baseline assumptions are overstated.

Ecology should evaluate whether the proposed adjustment meaningfully prevents excessive credit generation. It should explain the basis for the 50% efficiency benchmark, and assess the resulting carbon intensity values and CFS credits under realistic operational scenarios. This assessment should consider the interaction between avoided methane accounting and the energy economy ratios used for transportation electricity.

Ecology should revisit policies for accounting for land-use change on the same cadence as its GREET updates.

The October 14, 2026, workshop demonstrated that Ecology is taking care to ensure that the carbon intensity values for crude oil and electricity fuel pathways reflect current information. Ecology should be just as attentive to regular updates that ensure reasonably accurate carbon accounting for liquid biofuels. Accurate carbon accounting for liquid biofuels is essential for the integrity of the program because these fuels generate a significant share of the total CFS credits.[6] Washington's program currently relies on ILUC values that the California Air Resources Board adopted in 2015. These values are outdated because biofuel production trends and the state of the science have evolved dramatically over the last decade.[7] We urge Ecology to address ILUC impacts in this rulemaking so that reliance on outdated data does not lead to over-generation of credits for biofuels and a commensurate depression in credit prices that prevents the CFS from offering appropriate incentives for zero-emission fuels.

Even before it adopted the first CFS rule, Ecology's own experts cautioned against long-term reliance on California's 2015 ILUC values. A 2022 peer review prepared for Ecology by the International Council on Clean Transportation identified significant uncertainties and methodological limits in the current approach. Since that time, many empirical data have shown greater land use change impacts.

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[6] *See, e.g.*, Ecology, Clean Fuel Standard: Quarter 1 2026 Data Summary at 2, fig. 2, https://apps.ecology.wa.gov/publications/documents/2614082.pdf.

[7] *See, e.g.*, Tyler J. Lark et al., Environmental Outcomes of the US Renewable Fuel Standard, 119(9) Proc. of the Nat'l Acad. of Scis. 1–8 (2022), https://www.jstor.org/stable/27150759 (finding that domestic land use change emissions alone make corn ethanol at least 24% more carbon-intensive than gasoline, and the authors explicitly describe this as a lower bound, since international land use effects would be additional); EPA, Model Comparison Exercise Technical Document, EPA-420-R-23-017, Table 7.7-1 (June 2023), https://nepis.epa.gov/Exe/ZyPURL.cgi?Dockey=P1017P9B.TXT (demonstrating ILUC estimates vary widely across modeling frameworks, but that more biofuel demand leads to more land use change—potentially an order of magnitude greater than currently assigned in the CFS); Tzu-Hui J. Chen, Richard. J. Sexton & Aaron Smith, Using Vegetable Oils for Biofuel Accelerates Tropical Deforestation and Increases Carbon Emissions at 12–13, https://www.aaronsmithagecon.com/research (finding that global biomass-based diesel demand has significantly driven vegetable oil price increases and large-scale tropical deforestation and estimating ILUC emissions at 83 gCO2e/MJ as a "lower bound on the land use change effects of BBD use", far exceeding the current regulatory values).

Ecology should release the draft WA-GREET 4.0 model and any calculators with a period for public comment.

The WA-GREET model is the foundation for the CFS program's lifecycle analysis for fuels supplied in Washington. Updates to the model may materially impact a fuel's potential to generate CFS credits and, consequently, the strength of the program's incentive to supply it. Due to the high stakes and the complexity of this endeavor, we respectfully request a meaningful opportunity to comment on the draft WA-GREET 4.0 model and any accompanying calculators. The release should contain supporting documentation, including a description of changes from WA-GREET3.0 with a representative comparison of resulting pathway carbon intensities and credit generation.

The process for assigning ILUC values to new feedstocks should be transparent and scientifically robust.

Ecology should also ensure that any process for assigning ILUC values to feedstocks not listed in the current regulation is subject to rigorous scientific review and public scrutiny, with full transparency and consideration of global market effects. In particular, feedstocks, including so-called "novel" feedstocks, should not receive preferential treatment through methodologies that rely solely on localized land-use data or that fail to capture indirect impacts elsewhere in global agricultural markets. While determining ILUC values may require significant effort, given their impact on the carbon intensity score and potential for land use change impacts, that effort is warranted and should not circumvent the modeling or public process. The complexity or cost of conducting this analysis should not serve as a justification for bypassing established modeling requirements. If such analyses cannot be performed, Ecology should limit or bar the use of such feedstocks, or apply a conservative value such as the highest ILUC value used in the program.

Earthjustice thanks Ecology for considering these comments and would welcome any requests for further information.

Sincerely,

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