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THE INTERNATIONAL COUNCIL ON CLEAN TRANSPORTATION

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December 12, 2024

RE: International Council on Clean Transportation comments on the Clean Fuel Standard Draft Rule

These comments are submitted by the International Council on Clean Transportation (ICCT). The ICCT is an independent nonprofit organization founded to provide unbiased research and technical analysis to environmental regulators. Our mission is to improve the environmental performance and energy efficiency of road, marine, and air transportation, in order to benefit public health and mitigate climate change. We promote best practices and comprehensive solutions to increase vehicle efficiency, increase the sustainability of alternative fuels, reduce pollution from the in-use fleet, and curtail emissions of local air pollutants and greenhouse gases (GHG) from international goods movement.

The ICCT welcomes the opportunity to provide comments on the Washington State Department of Ecology's (ECY) proposed changes to the Clean Fuel Standard (CFS) Rule. We commend the agency for its technical analysis and interest in continuing to improve the effectiveness of its climate programs. The comments below offer a number of technical observations and recommendations for ECY to consider in maintaining the environmental integrity of the program.

We would be glad to clarify or elaborate on any points made in the below comments. If there are any questions, ECY staff can feel free to contact Nik Pavlenko (n.pavlenko@theicct.org) and Dr. Stephanie Searle (stephanie@theicct.org).

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Implement earlier and more stringent deliverability requirements for biomethane and biomethane-derived fuel pathways

The proposed rule includes significant updates to Part 6- Obtaining Carbon Intensity Values for Fuel Pathways. First, a new subsection on book-and-claim accounting of electricity and biomethane is added along with deliverability requirements.

The book-and-claim system allows for indirect accounting of renewable natural gas (RNG) as long as it is injected into the North American natural gas grid. As a result, a fuel producer can purchase environmental attributes from an out-of-state RNG producer, even when there is no direct, exclusive pipeline connection between the two facilities. Although deliverability requirements are proposed for RNG, they would go into effect in 2032 for biomethane used directly as transportation fuel, and in 2037 for biomethane used as feedstock for hydrogen, SAF, RD or for producing electricity for EV charging. No deliverability requirements will be in effect for the projects that begin operations before December 31, 2029.

The proposed geographical deliverability requirements are aimed to incentivize renewable investments to be delivered to Washington. However, an earlier phase-in of these requirements would help to align the GHG reductions credited in the CFS with the transport sector and better ensure that they are attributable to the policy. Until deliverability requirements start to apply, out-of-state RNG production facilities can benefit from these incentives with a more tenuous impact on Washington's emissions. The effect of book-and-claim crediting would be particularly severe for biomethane-derived fuel pathways, as these pathways are fully excluded from deliverability requirements until 2037.

We previously presented our findings on the impact of book-and-claim regarding dairy manure-derived pathways in California and why deliverability is important.¹ We found that, in many cases, RNG projects credited under the LCFS are located outside of California that have no direct impact on California's greenhouse gas (GHG) emissions or on the types of in-state agriculture projects intended to benefit from LCFS incentives as part of California's methane reduction goals. Following the same example, natural gas suppliers may gain revenue from CFS credits for a unit of fossil gas consumed in Washington with an equivalent unit of RNG produced across the country and injected into the national natural gas transmission grid.

To assess the potential supply and deliverability risk from out-of-state farms, we draw upon data from the Census of Agriculture to identify the number of large-scale centralized farms that could be eligible to participate in the CFS program.² In a previous assessment of cost-

¹ Gonca Seber, Nikita Pavlenko, and Chelsea Baldino, "Evaluating the Policy Value of Dairy Biomethane-Derived Hydrogen in California's Low Carbon Fuel Standard" (Washington, D.C.: International Council on Clean Transportation, September 17, 2024), <https://theicct.org/publication/evaluating-the-policy-value-of-dairy-biomethane-derived-hydrogen-in-californias-lcfs-sept24/>.

² U.S. Department of Agriculture, "Census of Agriculture, 2022 Census Volume 1, Chapter 1: State Level," 2024, https://www.nass.usda.gov/Publications/AgCensus/2022/Full_Report/Volume_1,_Chapter_1_State_Level/.

viable RNG production potential, we performed a discounted cash flow analysis and estimated the size of dairy projects that would result in breakeven project cost.³ Accordingly, a farm should have at least 2,300 dairy cattle to be economically feasible. As the Census data only provides data on certain ranges, we use 2,500 dairy cattle as cut-off. Figure 1 displays the distribution of farms with corresponding dairy cattle numbers indicating the risk for potential out-of-state farms making use of the CFS crediting system. While Washington is home to 24 of breakeven farms, there is a substantial pool of at least 810 out-of-state farms that could qualify for CFS credits throughout the U.S. Based on the book-and-claim requirements proposed, we can anticipate there could be significantly more out-of-state farms taking advantage of the CFS credits in the coming years, with minimal impact on Washington’s transport sector emission targets or on its livestock sector.

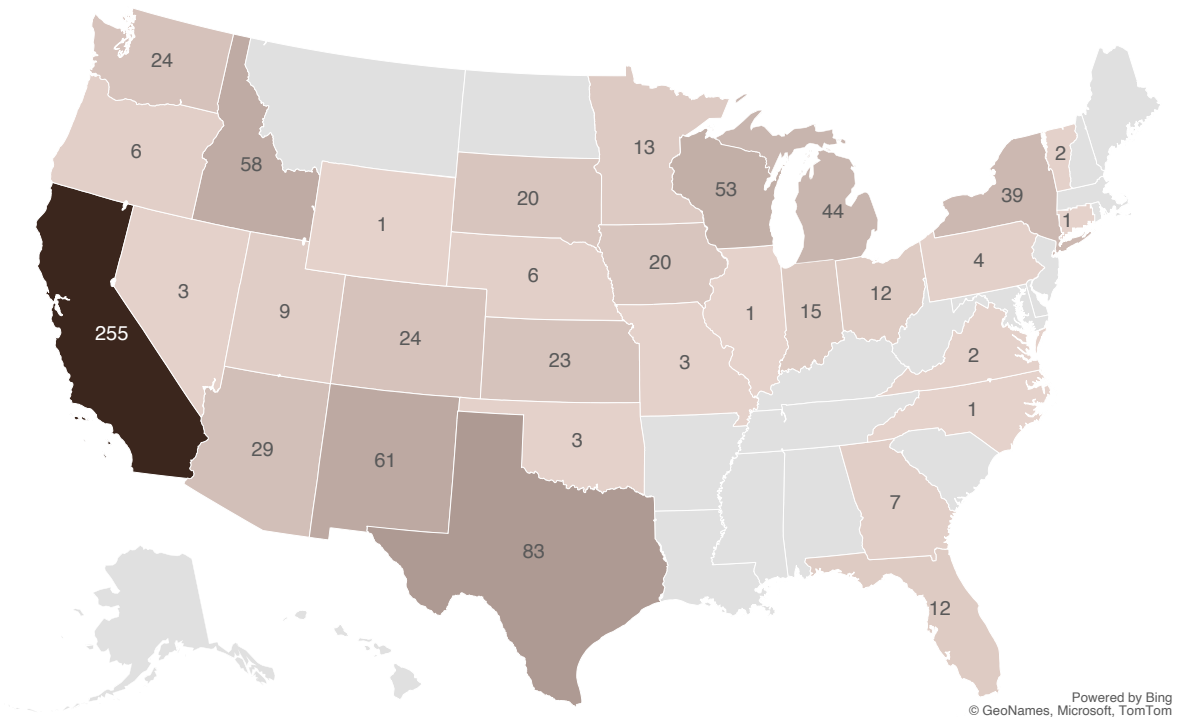


Figure 1. Distribution of dairy farms per state with 2,500 and more dairy cattle. Grayed-out states have zero farms with at least 2,500 dairy cattle.

The potential of out-of-state farms capturing biogas and taking advantage of the CFS crediting is particularly remarkable for the swine industry, which is largely concentrated outside of Washington. We illustrate this in Figure 2, where we considered farms with greater than 5,000 heads as cut-off since methane generation potential is lower for swine, and this is the highest range of data available from the Census of Agriculture. Accordingly, there is a total of 3,540 swine farms of this size, and only 1 of them is in Washington. In this

³ Jane O’Malley, Nikita Pavlenko, and Yi Hyun Kim, “2030 California Renewable Natural Gas Outlook: Resource Assessment, Market Opportunities, and Environmental Performance” (Washington, D.C.: International Council on Clean Transportation, May 22, 2023), <https://theicct.org/publication/california-rng-outlook-2030-may23/>.

case, the lack of geographical deliverability requirements for biomethane and its derivatives could lead to an abundance of out-of-state credits generated by an industry without a sizeable in-state counterpart. In other words, there is a risk that the CFS could be subsidizing the decarbonization of an unrelated, out-of-state economic sector.

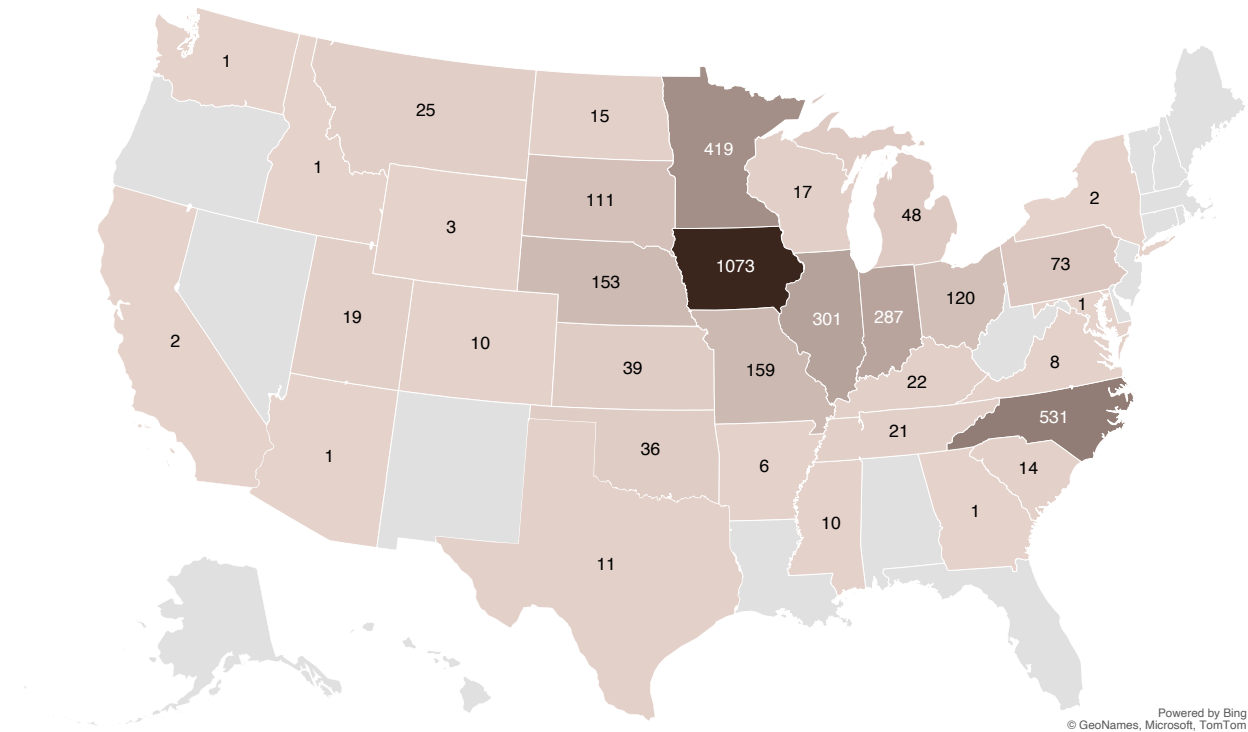


Figure 2. Distribution of swine operations per state with 5,000 or more swine. Grayed-out states have zero farms with at least 5,000 swine.

Thus, there is a possibility that further, long-term loose book-and-claim requirements would largely facilitate the deployment of digesters at out-of-state farms with little impact on Washington’s own methane goals or its transport sector emissions. There are hundreds of out-of-state dairy and thousands of swine farms that could take advantage of these incentives. These could generate a substantial amount of credits for a relatively small amount of agriculture sector activity without a meaningful transport-sector footprint in Washington State. In addition, deliverability risks are greater for biomethane due to its highly negative CI value, which would likely generate higher credits per unit of fuel than renewable electricity; yet, the proposed deliverability requirements are much less stringent than for electricity. Therefore, we recommend that deliverability requirements for biomethane and biomethane-derived fuels are more closely aligned with those for electricity book-and-claim provisions, to prevent this issue from diluting the impact of the CFS on its transport sector goals.

Accelerate the phaseout of avoided methane crediting

The proposed rule includes a new subsection listing criteria regarding the avoided methane credits from biomethane production. ECY aims to send a strong, long-term market signal and increase the number of new methane capture projects while ensuring highest credit opportunities go to projects with the greatest environmental benefits.

To prevent some of the well-documented problems on the additionality of biomethane pathways, ECY proposed provisions to distinguish between new and existing projects. Accordingly, the crediting period for a facility that breaks ground after January 1, 2023 is limited to a maximum of 15 years consisting of two separate 7.5-year periods. While for the projects that began operations before that date, the avoided methane credits would gradually decrease by one year per each year dating back from 2023. Facilities that started operations before 2009 would not be eligible for avoided methane crediting. On the other hand, incremental biomethane production from existing facilities would also be eligible for avoided methane crediting if they can show evidence on their baseline and additional biomethane production capacities. The safeguards proposed are a welcomed improvement in the right direction over California's LCFS. Nevertheless, we provide further recommendations to strengthen these measures.

Avoided methane credits could cause highly negative CIs from dairy and swine manure-based biomethane due to counterfactual assumptions based on perceived common practices at dairies.⁴ It is often assumed that biogas from the decomposition of manure would be released into the atmosphere as the counterfactual scenario if biomethane is not produced from it. However, this might not always be the case, as evidenced by approved fuel pathway examples from California LCFS.⁵ As shown in public comments submitted to CARB, we found that numerous digester projects certified in California that upgrade biogas to RNG were not additional, new facilities, but they were already capturing methane independently of the LCFS program. Though the California LCFS prohibits projects from using their RNG certificates to count towards multiple policies ("double claiming"), it does not have any safeguards in place to ensure that these projects are indeed new or occurring because of the LCFS program ("additionality"). These producers received avoided methane credits for simply diverting biogas feedstock from existing applications to the transport sector rather than capturing methane that would otherwise been vented to the atmosphere. Thus, there is a risk that RNG from facilities with similar practices is used via book-and-claim in Washington.

In particular, pathways reliant on nascent technologies, such as electrolytic hydrogen, could be adversely affected by extremely low CI values assigned to biomethane pathways. A hydrogen producer might employ traditional steam methane reforming technology while

⁴ Seber, Pavlenko, and Baldino, "Evaluating the Policy Value of Dairy Biomethane-Derived Hydrogen in California's Low Carbon Fuel Standard."

⁵ International Council on Clean Transportation, "International Council on Clean Transportation Comments on LCFS Application No. B0430," June 2, 2023, <https://www.arb.ca.gov/lists/com-attach/980-tier2lcfspathways-ws-Vj8GY1c1ACcLUlc0.pdf>.

simultaneously purchasing environmental attributes of out-of-state RNG, effectively using those as offsets. Approved hydrogen pathways via electrolysis using renewable electricity have a CI score of 6.49 gCO₂e/MJ at CFS. However, with the introduction of avoided methane emissions credits, the CI value for biomethane-derived hydrogen would likely become below zero, as evidenced in California LCFS. This could result in the favoring of hydrogen production from conventional technologies (e.g., steam methane reforming) instead of supporting nascent technologies such as electrolysis.

Though ECY has proposed several strong provisions to limit the contributions of non-additional methane reductions towards the CFS program, further changes to the proposal could help avoid additionality issues regarding the biomethane pathways. Given the high credit value and lack of explicit additionality criteria, we recommend more stringent additionality requirements to ensure that pathways claiming avoided methane emissions are indeed new and attributable to the CFS program. Alternately, the CFS could include a phase-out of avoided methane emissions crediting. For example, ECY could consider phasing out avoided methane credits for new pathway applications after a certain date (e.g., after 2027) and for existing, certified pathways by the end of their 10-year crediting cycle. Biomethane capture in digesters will remain an effective method to reduce methane emissions from dairy operations; however, there are other methods to reduce emissions from this sector. Changes to manure management practices and livestock diets can help reduce methane reduction at the source.⁶

⁶ U.S. Environmental Protection Agency, “Practices to Reduce Methane Emissions from Livestock Manure Management,” December 11, 2024, <https://www.epa.gov/agstar/practices-reduce-methane-emissions-livestock-manure-management>.