



February 20, 2024

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Jordan Ramalingam, Policy Manager, Low Carbon Fuel Standard
California Air Resources Board
1001 I Street
Sacramento, CA 95814

Via Electronic Submittal

RE: Earthjustice Comments on the Low Carbon Fuel Standard Staff Report: Initial Statement of Reasons

Dear Mr. Botill and Mr. Ramalingam,

Thank you for considering Earthjustice's comments on the California Air Resources Board (CARB) Staff Proposal for amending the Low Carbon Fuel Standard (LCFS) Regulation as set forth in the December 2023 Initial Statement of Reasons (Staff Proposal or ISOR). Our core recommendations include the following:

1. Set a cap on all lipid-based biofuels;
2. End avoided methane crediting for new pathways;
3. End the practice of allowing compressed natural gas ("CNG") companies to greenwash fossil methane through the purchase of unbundled biomethane credits;
4. Eliminate flawed carbon accounting practices that lead to lavish subsidies for dirty hydrogen and undermine green hydrogen production; and
5. Enhance credit generation potential for zero-emissions transit and charging Infrastructure.

We provide discussion in support of these recommendations below and in Appendix A to these comments, which contains a presentation with related graphics and analysis. We further note that we have not received public records responsive to Earthjustice's January 30, 2024 Public Records Act Request for certain data supporting Staff's analysis. Our request is included as Appendix B to these comments. Once we receive these comments, we will likely provide supplemental comments as we believe they are necessary to fully comment on Staff's proposal.

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APPENDIX A: Earthjustice Presentation on LCFS Reforms

APPENDIX B: Earthjustice Request for Public Records

INTRODUCTION

Earthjustice appreciates the opportunity to provide comments on the Staff Proposal for amendments to the LCFS. California—and CARB in particular—have helped catalyze a new global consensus that cleaning up the transportation system can only be accomplished through a rapid and equitable transition to zero-emissions. In this rulemaking, a critical window is open for CARB to reform the LCFS in a way that leverages its billions in annual funding to support achievement of California’s zero emissions goals (including CARB’s own ZEV regulations) and federal air quality requirements. These billions are insulated from the current cuts to the State budget and should not be squandered on combustion fuels.

We are therefore alarmed that, unless major modifications are made, the Staff Proposal would further entrench LCFS subsidies for combustion fuel pathways that exacerbate climate and environmental injustices. The Proposal’s combustion focus is a significant aberration from CARB’s clear and full-throated mission to achieve health-based air quality standards by accelerating the transition from combustion to zero-emissions—a mission that the California Energy Commission (CEC), the California Public Utilities Commission (CPUC), the California Legislature, and Governor Newsom have joined.¹ We are not aware of any environmental or environmental justice organization that endorses continued LCFS subsidies for combustion fuels, paid for by California drivers. Instead, combustion fuel subsidies are most prominently championed by out-of-state combustion fuel producers, multi-national agribusiness corporations, commodities traders and financiers, and even oil and gas companies.

Fortunately, as Earthjustice, our partners, and multiple academic experts have explained, reigning in subsidies to outdated, combustion pathways is not only necessary and workable, but can also stabilize LCFS credit prices to support an equitable ZEV transition and protect against runaway increases in gas prices.

We urge CARB to modernize this program now. Major changes are needed in this rulemaking to ensure the LCFS supports rather than thwarts attainment of California’s climate, air quality, and equity goals. Delaying the necessary and implementable changes that we summarize above and detail below would cast doubt on CARB’s commitment to these core goals and its role as a global climate and environmental justice leader.

¹ These state actions include but are not limited to the following: CARB’s regulatory actions on mobile sources are focused on eliminating air pollution and advancing the transition to zero emissions, including Advanced Clean Cars (ACC) II, Advanced Clean Fleets, and Advanced Clean Trucks; CARB’s Mobile Source Strategy, which identifies even faster electrification needed to meet attainment; CPUC’s denial of utilities’ requests to purchase natural gas trucks, recognizing that “California’s express policy is to meet [the State’s GHG reduction] goal through widespread transportation electrification;” CPUC’s eliminating gas line subsidies for methane refueling stations; CEC’s 2022-2023 Investment Plan Update for the Clean Transportation Program allocating 95% of its investment toward ZEVs; The State Legislature’s clear intent in Senate Bill (“SB”) 350 has been to achieve rapid decarbonization through widespread transportation electrification, and; Executive Order N-79-20 calls for an end to the sale of internal combustion engine vehicles by 2035, and that by 2045, all vehicles on the road are zero-emission everywhere feasible.

DISCUSSION AND RECOMMENDATIONS

1. Set a Cap on All Lipid-Based Fuel Pathways.

Lipid-Based Biofuels

Summary of Problem: An unconstrained subsidy on combustion-based fuels increasingly sourced from food crops is driving both record-levels of unsustainable consumption and the glut of credits, depressing the credit price. Staff’s previous efforts to constrain fuels that increase pressure on global deforestation are no longer effective.

Earthjustice Recommendation: Cap the generation of credits from all lipid-based fuel pathways to no higher than 2022 levels.

Why Staff Proposal Is Inadequate:

Staff does not propose any limits on lipid-based fuels, including virgin crop oils.

The two newly proposed measures will not solve the problem. Staff’s chain of custody certification proposal does nothing to stave off the glut of lipids in the program. Staff’s proposed exclusion of palm-oil-derived fuels is also unhelpful because these oils have never generated credits under the LCFS.

a. Crop-Based Fuels are Surging in the LCFS, Despite LUC Factors.

Staff state that crop-based and high-risk feedstocks are disincentivized and that the LCFS has “historically come from waste feedstocks.”² Staff point to the Regulation’s Land Use Change (LUC) factor for this outcome. However, the LUC factor was based on analyses conducted over a decade ago and under volumes significantly lower than are seen even today, let alone the volumes expected in the near future. For example, the analyses underlying the LUC values assumed as input values of roughly 0.8 billion gallons of soy biodiesel.³ But biomass-based diesel volumes (i.e. renewable diesel (RD) and biodiesel (BD)) are already well over 1 billion gallons as of the end of 2022.⁴

In fact, crop-based feedstocks have surged since 2020. As shown in Figure 1, CARB’s February 2023 workshop presentation acknowledged the unprecedented use of crop-based oils in the program, primarily driven by soy, suggesting financial or other barriers have been overcome that make using these feedstocks viable, even under increasingly stringent carbon intensity (CI) benchmarks.⁵ Since then, the rate of increase has only grown. In the second quarter of 2023, RD

² CARB, ISOR at 32, <https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2024/lcfs2024/isor.pdf>.

³ CARB, Detailed Analysis for Indirect Land Use Change (2015) at I-8, https://ww2.arb.ca.gov/sites/default/files/classic/fuels/lcfs/iluc_assessment/iluc_analysis.pdf.

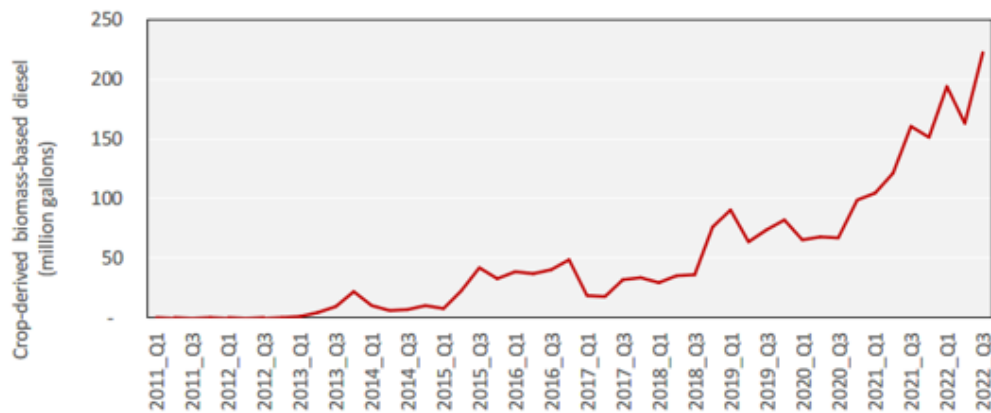
⁴ CARB, LCFS Data Dashboard (Accessed Feb. 20, 2024) <https://ww2.arb.ca.gov/resources/documents/lcfs-data-dashboard>.

⁵ CARB, LCFS – Public Workshop: Potential Regulation Amendment Concepts (Feb 22, 2023) at 38, https://ww2.arb.ca.gov/sites/default/files/classic/fuels/lcfs/lcfs_meetings/LCFSpresentation_02222023.pdf.

volumes grew an alarming 18.9% in a single quarter.⁶ In the third quarter, volumes climbed another 10.5%.⁷ Clearly, what LCFS aimed to achieve solely through the LUC factors is no longer working.

Figure 1: Staff February 2023 Workshop Slide Showing Crop-Based Oil Surge

Increase in Crop-based Oils Used in California Over Time



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Land use change is an inherently dynamic phenomenon that cannot be adequately captured by a fixed value. While LUC adders may have helped deter virgin feedstocks in the past, the booming volumes require a more direct intervention. Numerous global pressures, like population growth, governance regimes, debt or trade pressures on exporting countries, and climate- or pest-driven crop failures, can all increase the risks of land conversion.⁸ These static emissions factors do not reflect the reality that “costing” in ILUC factors will not necessarily affect the carbon stock of the land that is or is not spared, and studies have found that bioenergy consumption taxes (analogous to how the ILUC adder attempts to make crop fuels less desirable

⁶ Stillwater Associates, Flash Report: 2Q2023 LCFS Data Show More than 1.5 Million MT Net Credit (Nov. 3 2023), <https://stillwaterassociates.com/flash-report-2q2023-lcfs-data-show-more-than-1-5-million-mt-net-credit/>.

⁷ Stillwater Associates, Flash Report: 3Q2023 LCFS Data Show More than 2.2 Million MT Net Credits, <https://stillwaterassociates.com/flash-report-board-meeting-carb-staff-update-on-2023-lcfs-amendment-process-2/>.

⁸ See, e.g., Dynamis of Land use, Land Cover Change Trend and Its Drivers in Jimma Geneti District, Western Ethiopia (Dec. 2020), <https://www.sciencedirect.com/science/article/abs/pii/S0264837719317971>; Ilan Stavi et al., Food Security Among Dryland Pastoralists and Agropastoralists: The Climate, Land-use change, and Population Dynamics Nexus (Apr. 2021) <https://journals.sagepub.com/doi/abs/10.1177/20530196211007512>;

in the LCFS than waste fuels) “fails to steer [land use change] decisions towards low-[emission factor] areas and cannot prevent the conversion of higher-carbon land.” The study authors conclude that “this finding implies climate policy sequencing: first, global [land use] regulation needs to be in place, and only then should large-scale bioenergy be considered.”⁹ There is no such global land use regulation that safeguards against land conversion. On the contrary, most recent satellite data shows a clear trend of increasing deforestation and land conversion alongside rising soybean consumption in the biofuel sector.¹⁰

b. Unconstrained Biofuels Subsidies Pose Severe Social and Ecological Harms that Do Not Align with California’s Vision for Clean Transportation.

We appreciate that Staff’s acknowledgement that a “rapid increase in oil crop demand for biofuel production could potentially add pressure to convert forested land or other land types into biofuel crop production.”¹¹ Based on the research we have cited throughout the rulemaking process, the risks of harm from biofuels – both social and ecological – is already evident.¹² Most of the land suitable for agriculture is already in use for food production. Diverting crops from food to fuel instead increases the crop prices, resulting in some combination of these detrimental ecosystem, climate, and public health outcomes:

1. New land is diverted from forest or other native vegetation to agriculture;
2. Practices on existing cropland must intensify to increase yield (i.e., through additional use of petroleum-based fertilizer, pesticides, and diesel-fueled equipment); and/or
3. Demand for the crop must be reduced.

⁹ Leon Merfort et al., Bioenergy-induced Land-Use-Change Emissions with Sectorally Fragmented Policies (June 2023), <https://www.nature.com/articles/s41558-023-01697-2>.

¹⁰ See Yu Feng et al., Doubling of annual forest carbon loss over the tropics during the early twenty-first century (Feb. 2022), <https://www.nature.com/articles/s41893-022-00854-3>, and Xiao-Peng Song et al., Massive soybean expansion in South America since 2000 and implications for conservation, <https://www.nature.com/articles/s41893-021-00729-z>.

¹¹ ISOR Staff Report, page 32, <https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2024/lcfs2024/isor.pdf>.

¹² See, e.g., Tyler J. Lark et al., Environmental Outcomes of the US Renewable Fuel Standard (Feb. 14, 2022), <https://doi.org/10.1073/pnas.2101084119>; Horst Fehrenback et al., Carbon Opportunity Costs of Biofuels in Germany – An Extended Perspective on the Greenhouse Gas Balance Including Foregone Carbon Storage (Oct. 2022), <https://doi.org/10.3389/fclim.2022.941386>; Samuel G. Evans et al., Greenhouse Gas Mitigation on Marginal Land: A Quantitative Review of the Relative Benefits of Forest Recovery versus Biofuel Production (Jan. 12, 2015), <https://doi.org/10.1021/es502374f>; Yu Feng et al., Doubling of Annual Forest Carbon Loss Over the Tropics During the Early Twenty-First Century (May 2022) <https://doi.org/10.1038/s41893-022-00854-3>; Sophie Jane Tudge et al., The Impacts of Biofuel Crops on Local Biodiversity: A Global Synthesis (Jan. 19, 2021), <https://doi.org/10.1007/s10531-021-02232-5>; Transport Environment, Fueling our Crises – How Soy Biofuels are Pushing the Amazon Closer to the Tipping Point (Nov. 4, 2022), <https://www.transportenvironment.org/discover/how-soy-biofuels-are-pushing-the-amazon-closer-to-the-tipping-point/>.

The first two possibilities significantly increase greenhouse gas (GHG) emissions, destroy surrounding habitats, imperil biodiversity, and pollute the air and water.¹³ The land use change model in the LCFS assumes instead that the higher prices will lead to the third option – reduced demand.¹⁴ **Reduced demand due to higher crop prices means the poorest people would eat less and be pushed into hunger.** To examine the emissions effects of theoretically foreclosing this grim outcome, researchers fixed consumption in the GTAP model to control against any increase in food insecurity. They found that the impact on deforestation doubled, and land use change emissions increased by 41 percent, or an additional 10 gCO₂e/MJ to the ILUC value for ethanol not currently accounted for by CARB.¹⁵

The unacceptable and potentially irreversible harms posed by increasing biofuel consumption to fragile forest ecosystems, the climate, biodiversity, and indigenous communities far outweigh the marginal emissions benefits that these fuels may theoretically offer over fossil fuels, even if one assumed those incremental reductions could be assured.

In addition to dramatically increasing pressure on land conversion, agricultural intensification, and global food prices, the surge of soybean oil has been self-defeating for all the intended beneficiaries of the LCFS. Record-high crop fuel volumes translate to record-low LCFS credit prices. As a recent article in Argus Media (a trade press tracking biofuel commodities) notes: “Prices have groaned under the weight of new credits generated in excess of obligations that have doubled since the workshops began, to more than 18mn t — nearly enough to satisfy all the deficits generated in the 2021 compliance year. These credits do not expire.”¹⁶

Recent analysis by the University of California Davis shows that there is no end in sight to the surge of lipid biofuels into the California market. Even in a period of low credit prices, renewable diesel has increased so rapidly in recent years that consumption of lipid biofuels already exceeds the maximum volumes projected by some experts and exceeded the volumes that other experts expected to see in the late 2020s.¹⁷ After evaluating recent trends, the University of California researchers found that “the upper bound on aggregate consumption [of lipid biofuels] may be the global supply of lipids, which is more than sufficient to fully displace all diesel and jet fuel consumption within the near term.”¹⁸ New information on the availability of renewable diesel suggests that the ISOR’s proposed CI targets and automatic acceleration

¹³ See, e.g., Tyler J. Lark et al., Environmental Outcomes of the US Renewable Fuel Standard (Feb. 14, 2022), <https://doi.org/10.1073/pnas.2101084119>.

¹⁴ CARB, Low Carbon Fuel Standard Public Workshop (July 7, 2022) at slide 34, https://ww2.arb.ca.gov/sites/default/files/2022-07/LCFSWorkshop_Presentation.pdf.

¹⁵ Thomas Hertel et al., Effects of US Maize Ethanol on Global Land Use and Greenhouse Gas Emissions: Estimating Market-Mediated Responses BioScience (Mar. 2010), <https://doi.org/10.1525/bio.2010.60.3.8>.

¹⁶ Argus Media, “California sets sights on tougher LCFS”(Dec. 20, 2023), <https://www.argusmedia.com/en/news/2520844-california-sets-sights-on-tougher-lcfs>.

¹⁷ Colin Murphy and Jin Wook Ro, Updated Fuel Portfolio Scenario Modeling to Inform 2024 Low Carbon Fuel Standard Rulemaking (Feb. 2024) (“Murphy and Ro”) at pdf p. 5, <https://escholarship.org/uc/item/5wf035p8>.

¹⁸ *Id.* at pdf p. 8.

mechanism are “unlikely to bring credit and supply demand into approximate balance before 2030” and meaningful upward pressure on LCFS credit prices is unlikely as long as there is a supply of inexpensive credits from renewable diesel.¹⁹ Ultimately, a “cap on fuels from crop or lipid feedstocks . . . offers the best option for quickly arresting the growth in RD [renewable diesel] markets” because other potentially effective solutions would require years to develop, “by which point significant environmental harm and damage to California’s progress toward climate goals will have been irrevocably done.”²⁰

c. Staff’s Proposed Biofuels Measures Would Be Ineffective and Administratively Unrealistic.

Staff’s proposal to require crop fuels to trace the chain of custody of their fuels and receive sustainability certifications appears to be in response to the Board’s direction to Staff at the September 2023 Board meeting. However, this ineffective solution does not address the fundamental problem of surging soybean oil into the program. It also presents a host of administrative challenges that are not addressed in the ISOR.

i. Neither Third-Party Certification Nor a Prohibition on Palm Oil Will Mitigate the Climate, Ecosystem, and Societal Harms of the Surge of Soy-Based Diesel in the LCFS.

The proposed feedstock sustainability certification fails to address the threats that surging demands for lipid biofuels pose to the climate, tropical forests, and food prices because oils that can meet the proposed requirements are fungible on the global market with oils from food crops grown on recently deforested land. As observed by researchers at the University of California Davis, feedstock sustainability certifications “are incapable of mitigating indirect risks like ILUC, which are driven by aggregate demand within a given market, which in the case of vegetable oils, is effectively global.”²¹ Nor would the proposed certification requirement succeed in stabilizing the credit price because “[t]here is ample potential supply of crop-based vegetable oil that would meet proposed sustainability criteria.”²² The proposed certification would merely direct that feedstock to biofuel production, forcing the current consumers of that oil to find other oil supplies, which have historically included unsustainable alternatives that require conversion of additional land into cultivated use.²³ As the author of the UC Davis study summarizes it: “[t]he problem isn’t the oil we use, the problem is what comes into the market to replace the oil we use.”²⁴

Moreover, neither CARB’s current indirect land use change (ILUC) factors nor the proposed certification standard account for the reality that waste- or residue-derived biofuels still pose significant risks of emissions increases through shuffling. CARB’s assumption that ILUC

¹⁹ *Id.* at pdf p. 12–13.

²⁰ *Id.* at pdf p. 19.

²¹ *Id.* at pdf p. 16.

²² *Id.*

²³ *Id.*

²⁴ Colin Murphy, (Feb. 19, 2024), <https://x.com/scianalysis/status/1759673855847829880?s=20>.

factors for waste- and residue-derived fuels have zero or very small indirect emissions is outdated.²⁵ Used cooking oils and animal fats can divert these products from other non-human consumption ends like livestock feed or consumer products, which then end up needing additional oils to substitute.²⁶ Therefore, the LCFS must incorporate a cap on all lipid-based biofuels, and not just crop-based biofuels or virgin oils.

The exclusion of palm oil is also a diversion from real solutions. The program, per Staff, has not had palm oil reported in the program, likely owing to the current LUC factor of 71.4. The greater risk is that soy and palm are near-perfect substitutes. New studies have pointed this out, including one that shows that the United States' increased consumption of soy biofuels has indirectly increased demand for palm oil to substitute in cooking.²⁷ As long as demand for soy consumption continues to surge in California, this will almost certainly equate to greater consumption of palm oil elsewhere. Excluding palm oil in the program, therefore, does not address the real issue. Given the substitution effect, we question whether soy should be given such a favorable LUC factor, over 40 g CO₂e/MJ lower than palm oil.

ii. Third-Party Certification Is Costly, Burdensome, and Unlikely to Yield Results.

The ISOR does not provide sufficient detail on how certification will comply with the proposed amendments (including, e.g., which certification bodies would be eligible, what metrics they would be required to assess, and how CARB will verify the work of certifiers). Such a scheme cannot ensure that the risks outlined above and Board members' concerns would be addressed.

It is impossible to make confident determinations about the precise practices that generated a given feedstock based just on the properties of the final fuel delivered or even its place of origin. For a certification body to be confident that the feedstock was generated in a manner that did not pose direct or indirect land use impacts, it would effectively need to audit the entire supply chain for each fuel delivery, which would come at enormous cost given the global extent and remote reaches of the biofuel supply chain. Relying on auditors to inspect their clients is not a robust oversight framework and would ultimately require audits of the certification bodies themselves by Staff. Based on the information available in the ISOR, it does not appear that CARB has estimated or accounted for the potential costs and logistical challenges that conducting global supply chain audits would require, including any pass-through costs to Californians. Given that State employees require Governor's approval for non-California travel,

²⁵ CARB, ISOR – Proposed Re-Adoption of the LCFS (Dec. 2014) at II-12, <https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2015/lcfs2015/lcfs15isor.pdf>.

²⁶ Jane O'Malley, Stephanie Searle, and Nikita Pavlenko, "Indirect Emissions from Waste and Residue Feedstocks: 10 Case Studies from the United States" (Washington, D.C.: ICCT, 2021), <https://theicct.org/publication/indirect-emissions-from-waste-and-residue-feedstocks-10-case-studies-from-theunited-states/>.

²⁷ Fabio Gaetano Santeramo and Stephanie Searle, "Linking Soy Oil Demand from the US Renewable Fuel Standard to Palm Oil Expansion through an Analysis on Vegetable Oil Price Elasticities," Energy Policy 127 (April 1, 2019) at 19-23, <https://doi.org/10.1016/j.enpol.2018.11.054>.

and the costs to travel internationally, make this type of oversight unlikely to occur, or far less likely to be imposed on foreign-imported feedstocks than those sourced domestically.²⁸

In addition, the ISOR's proposed certification system would create a powerful incentive to pass off conventional biofuels as waste- and residue-based fuels. Skyrocketing global imports of used cooking oil (including recent pathways approved by the LCFS for California to import Used Cooking Oil from Southeast Asia and Oceania) have been beleaguered by widespread incidence of fraud. Several EU member states have launched national and criminal investigations into fraudulently labeled used cooking oil in their biofuel markets. Germany and Ireland launched such investigations in 2023, and the Netherlands' ongoing criminal investigation has identified that a third of the biodiesel reported as used cooking oil could be virgin oils.²⁹ Ironically, CARB has only proposed to add certification criteria to virgin crop oils and not to used cooking oil or other waste fuels, the one segment where certification could be a helpful transparency tool.

A cap covering all lipid-based fuels is the only way to ensure that waste fuels and used cooking oils do not become a backdoor for the land-use driving effects of crop fuels to persist.

d. The Staff Proposal Includes Overstated or Illusory GHG and Air Quality Benefits from Biofuels.

As noted above, CARB has not yet provided stakeholders with the spreadsheets underlying the modeling that supports their conclusions and Earthjustice has not yet received responsive documents to our Public Records Act request attached as Appendix B to these comments. But even without the underlying tables, there are seriously questionable assumptions that more biofuels will deliver significant GHG and PM/NO_x reductions that depart significantly from past LCFS analyses, are counter to how other regulations are evaluated, and dismiss CARB's own research.

i. Staff Ignores CARB's Own Research on the Air Quality Impacts of Biofuels.

Staff bases the estimated air quality impacts of biofuels on outdated data. In previous rulemakings, CARB asserted the following:

- BD has higher NO_x emissions than fossil diesel.
- RD has lower NO_x emissions than fossil diesel.
- RD NO_x reductions "offset" the BD NO_x increases at BD concentrations of 20% or less.
- BD and RD have lower PM emissions than fossil diesel.
- These findings were from older engines but assumed to apply to newer engines that now dominate the roadways (called New Technology Diesel Engines, or NTDE).

²⁸https://leginfo.legislature.ca.gov/faces/codes_displaySection.xhtml?sectionNum=11032.&lawCode=GOV.

²⁹ Transport & Environment, Biofuels: From Unsustainable Crops to Dubious Waste? (Dec. 2023) at 20-21, https://www.transportenvironment.org/wp-content/uploads/2023/12/202312_TE_biofuels_update_report_clean-1-1.pdf.

In 2021, CARB posted a study specifically looking at the impact of biofuels on NTDEs. That study found:

- BD NOx has higher emissions than fossil diesel.
- RD NOx has similar emissions to fossil diesel.
- RD cannot offset BD NOx impacts.
- BD and RD have similar PM emissions as fossil diesel.

However, Staff ignore their own 2021 findings in the 2023 LCFS ISOR, stating PM and NOx “emissions test data for renewable diesel in NTDEs were not available,” and “staff conservatively assumed use of renewable diesel in NTDEs results in no change in NOx emissions relative to conventional diesel.”³⁰ Neither of these statements is true. Data *are* available and a *conservative* approach would be to protect public health. It is inexplicable that CARB ignored its own, more recent research which measures precisely the question it claims to lack data for. CARB must amend this analysis to fix these egregious errors.

Additionally, the 2021 results were obtained even while using biofuels that do not meet ADF requirements for biofuels.³¹ **Using a compliant fuel would likely lead to even higher NOx emissions.** Indeed, Earthjustice strongly advises using a soy-based biofuel in future testing.

ii. Staff’s Proposal Double Counts Biofuel Benefits.

Staff’s analysis should evaluate the impacts of the specific regulation, separate from the benefits of federal mandates or other State regulations that would occur with or without implementation of the current proposal. Inclusion of these benefits improperly overstates the impacts of the proposal and should be avoided. Past LCFS analyses adhere to this construct. In 2018, for example, Staff included an adjustment to the GHG and air quality benefits to “eliminate double counting of emission reductions that are more appropriately attributed to other State and federal programs such as Advanced Clean Cars and Renewable Fuel Standard.”³² However, the ISOR attributes 100% of the PM/NOx and GHG reductions associated with renewable diesel to the LCFS, even though much of these reductions are driven by federal mandates. Staff clearly detailed the methodology for attributing the incremental benefits of the LCFS and those to other programs in Appendix F of the 2018 ISOR and do not provide an explanation for changing the approach in the most recent ISOR.³³ Correcting this apparent

³⁰ CARB, [Low Carbon Fuel Standard 2023 Amendments](#) – Appendix B (Sept. 8, 2023) at B-9.

³¹ In particular, the cetane number of the fuel tested was much higher than allowed in the ADF regulation (see Table A.8 in the ADF Regulation). This is significant because higher cetane fuels generally have faster combustion and lower levels of NOx emissions.

³² CARB, LCFS Initial Statement of Reasons (Mar. 6, 2018) at IV-2 https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2018/lcfs18/isor.pdf?_ga=2.105822022.451461435.1708363833-1354554675.1652381457.

³³ That is, the RFS requires renewable diesel to have GHG lifecycle emissions at least 50% below the lifecycle emissions of fossil diesel, and CARB’s cost-benefit analysis for proposed LCFS amendments has previously taken credit only for emissions reductions from renewable diesel that go beyond the federal mandate.

oversite would significantly lower the purported benefits of relying on lipid biofuels. Other recently approved CARB regulations include methodologies detailing how Staff accounted for other initiatives in place.³⁴

iii. Upstream Benefits Should Not Be Attributed to the LCFS.

The ISOR attributes GHG and PM/NO_x reductions associated with reductions in upstream crude oil production in California to the LCFS. This is a significant departure from CARB's analysis in the 2018 amendment process that is not explained. The new assumption that the LCFS is responsible for declining oil production in California is vastly overreaching, as there is no evidence that the LCFS has a significant impact on production. A wide range of State policies are driving down oil consumption in California, and California's consumption and production are not even linearly connected because oil production is driven by global trends rather than State consumption alone. As shown in Figure 2, the 2022 Scoping Plan notes that crude production in California has been on the decline since 1986 – more than two decades prior to the start of the LCFS.³⁵ For these reasons, CARB appropriately excluded upstream GHG and PM/NO_x benefits from its cost-benefit analysis in the 2018 rulemaking.³⁶ The ISOR does not offer a clear discussion for why this change in approach is suddenly justified nor does it offer evidence for the LCFS's role in declining domestic production.

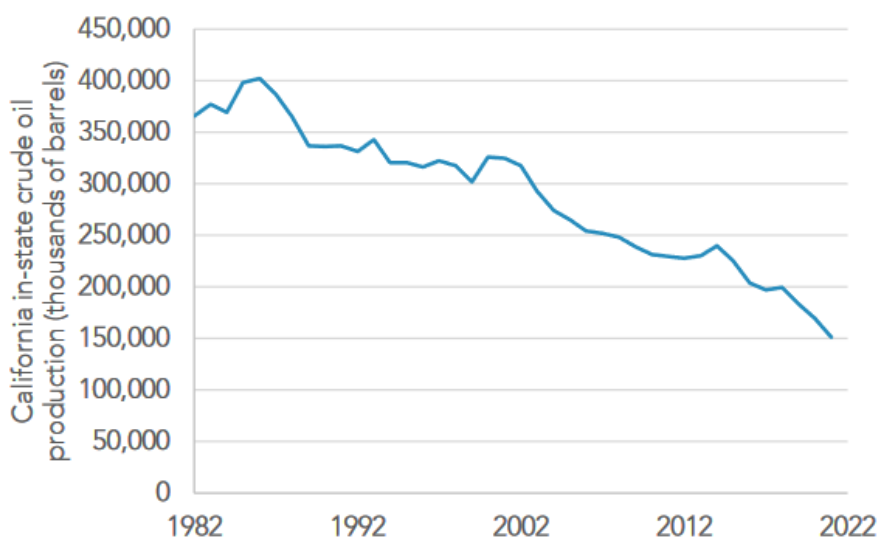
CARB, Attachment F – Updates to the Methodologies for Estimating Potential GHG and Criteria Pollutant Emissions Changes Due to the Proposed Amendments (2018) at F-14, <https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2018/lcfs18/15dayattf2.pdf>

³⁴ See, e.g., ACC II ISOR Staff Report Chapter X.A.2, where Staff describe how they accounted for the ZEV technology fractions in the California baseline fleet based on new nationwide ZEV sales projections presented in the U.S. EPA Final Rule to Revise Existing National GHG Emissions Standards for Passenger Cars and Light Trucks Through Model Year 2026. Staff evaluated the benefits of the proposed regulation (ACC II) that were in addition to federal requirements.

³⁵ CARB, 2022 Scoping Plan for Achieving Carbon Neutrality (Scoping Plan) at 103, <https://ww2.arb.ca.gov/sites/default/files/2023-04/2022-sp.pdf>.

³⁶ CARB, Attachment F – Updates to the Methodologies for Estimating Potential GHG and Criteria Pollutant Emissions Changes Due to the Proposed Amendments (2018) at F-14, <https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2018/lcfs18/15dayattf2.pdf>.

Figure 2: 2022 Scoping Plan Graph of California In-State Crude Oil Production³⁷



iv. Corrected Modeling Would Eliminate the Illusory Benefits of Unrestricted Biofuels.

In rejecting a cap on lipid-based fuels contemplated in both Alternative 1 and the Comprehensive EJ Scenario, CARB argues that restricting those fuels will not achieve the greenhouse gas or air quality benefits secured under their proposed scenario, which allows unrestricted growth in biofuels. But correcting for the aforementioned modeling errors and relying on up-to-date research on air emissions would likely eliminate the presumed air and climate advantages portrayed under Staff’s proposed scenario. For example, relying on the same conservative methodology that CARB used in 2018 potentially negates all the climate benefits Staff estimated from rejecting the cap on virgin oils in Alternative 1.

Alarmingly, the ISOR invokes illusory public health benefits of using renewable diesel to justify rejecting a commonsense measure—capping lipid biofuels—that would deliver real air quality benefits by refocusing the LCFS’ benefits on zero-emissions technologies instead of combustion technologies. Unfortunately, Staff’s use of the California Transportation Supply (CATS) model does not allow for electric vehicle (EV) deployment to be dynamically modeled, so the benefits of electrification pathways are fixed under all scenarios. But it is unrealistic to assume that re-focusing the LCFS’s subsidy towards electrification pathways would have no impact on the breadth or immediacy of EV deployment. Researchers at Stanford found that capping lipid biofuels— as well as eliminating avoided methane credits—would unleash an additional \$19 billion from the LCFS to electrification pathways, and it is reasonable to assume that such a large infusion of funding will propel deployment of electric cars and trucks beyond

³⁷ CARB, 2022 Scoping Plan (Dec. 2022) at 103.

current levels.³⁸ These zero-emission vehicles deliver *real* air quality benefits, yet that additional benefit is traded against illusory reductions that rely on faulty assumptions.

2. End Avoided Methane Crediting for New Pathways.

Avoided Methane Crediting

Summary of Problem: Avoided methane crediting extravagantly rewards an unregulated industry with accounting that distorts the LCFS program, undermines transportation goals, and worsens environmental injustices for frontline communities.

Earthjustice Recommendations:

- New project avoided methane credit phase out in 2025, and
- Existing project avoided methane credit phase out at the end of their current crediting period.

Why Staff Proposal Is Inadequate:

Staff propose to allow the market distortions and harms caused by avoided methane crediting to continue for decades.

Specifically, Staff propose:

- New project avoided methane credit phase out in 2040 (2045 for hydrogen). Projects that break ground after 2030 are also guaranteed 10 years of avoided methane crediting, or 15 years for hydrogen pathways.
- Existing project avoided methane credit phase out in 2060. No restrictions on avoided methane crediting for projects initiated by 2030 (regardless of date of certification). These projects can receive up to three renewals for 10-year crediting periods.

These timelines will perpetuate pollution harms and undermine the program’s support for ZEVs and green hydrogen.

a. Avoided Methane Subsidies Conflict with State Climate Policies and Laws.

Awarding avoided methane credits relies on an assumption that is unjustified on its face— the assumption that, absent the LCFS, livestock operators would be free to vent their methane into the atmosphere. The fact that California is required to achieve economy-wide carbon-neutrality generally, and reduce emissions of short-lived climate pollutants (SLCPs) 40% by 2030 in particular, makes this assumption unreasonable. There is simply no realistic scenario in which the State would allow this controllable fugitive methane to persist while meeting statutory obligations.

³⁸ Michael Wara et al., Simulating an “EJ Scenario” for the Low Carbon Fuel Standard Rule Update using the ARB CATS Model (May 31, 2023), <https://ww2.arb.ca.gov/sites/default/files/2023-05/Stanford%20Presentation.pdf>.

Most notably, in SB 1383, the Legislature gave CARB clear authority to begin implementing direct regulations on this source of pollution on January 1, 2024, nearly 2 months ago. And CARB *itself* recognized as far back as 2016 that “regulations will be necessary to ensure manure management practices lead to lasting emission reductions” and stated their intention to “initiate a rulemaking process to reduce manure methane emissions from the dairy industry” in-line with their SLCP strategy.³⁹ Nearly a decade later, CARB has failed to initiate so much as a pre-rulemaking workshop under SB 1383 to explore regulatory options. CARB is uniquely responsible for livestock operators remaining free to dump their methane into the atmosphere. The fact that CARB has abdicated its clear authority cannot justify rewarding polluters. Nothing about livestock methane’s chemistry makes it better than landfill or wastewater methane at fighting climate change. Instead, it receives extreme, outlier carbon intensity scores purely because CARB has neglected to treat agriculture the way it treats virtually every other major source of GHG emissions. CARB has used an ineffective carrots-only approach to livestock methane for more than a decade, and it has offered no public justification for granting decades more of immunity to this major pollution source.

Even if CARB conclusively declined to regulate livestock operations, the State’s climate commitments would require some alternative mechanism for controlling methane from California dairies and multiple, overlapping subsidies are already in place for precisely this purpose. Indeed, as Earthjustice and many other parties have repeatedly pointed out, the LCFS regularly awards credit for operations that have already been capturing their methane through a mix of subsidies prior to and independent from the LCFS.⁴⁰

b. Extreme, Outlier CI Scores Distort the LCFS Market and Undermine the State’s Goals.

The strategy of relying on extravagant transportation subsidies to tame industrial livestock pollution has delivered poor results. As UC Davis agricultural economist Aaron Smith recently concluded, “[a] good rule in policy is to directly target the problem you are trying to solve... Negative crediting in the LCFS is a convoluted solution with numerous drawbacks.”⁴¹ We agree. Even if CARB believes that subsidizing methane capture from dairies is a worthy strategy, it is clearly counterproductive to do so in a manner that undermines the agency’s ZEV goals.

Despite making up less than 1% of fuel energy used in the state, livestock methane’s extremely negative, outlier CI scores has allowed it to receive almost 20% of the credits in the

³⁹ CARB, Proposed Short-Lived Climate Pollutant Reduction Strategy (Apr. 2016) at 68, <https://ww2.arb.ca.gov/sites/default/files/2021-01/ProposedStrategy-April2016.pdf>.

⁴⁰ Indeed, the Coalition for Renewable Natural Gas has identified the potential for double-counting biomethane and pointed to the fact that there is no central tracking required for biomethane from production to end use. See Coalition for Renewable Gas, Comments on February 22, 2023 Staff Workshop (March 15, 2023) at 10, <https://www.arb.ca.gov/lists/com-attach/88-lcfs-wkshp-feb23-ws-BjRXYgQ1VjZQZwYz.pdf>.

⁴¹ Aaron Smith, Cow Poop is Now a Big Part of California Fuel Policy (Jan. 22, 2024), <https://asmith.ucdavis.edu/news/cow-poop-now-big-part-california-fuel-policy>.

LCFS program to date.⁴² In other words, livestock methane significantly dilutes the supply of LCFS credits relative to the actual fossil fuel displaced.

Apart from exacerbating the surplus of credits, which undermines the support available for ZEVs, this distorted accounting sends market signals that are completely misaligned with CARB's own policies. In particular, the following distortions are caused by the LCFS program's avoided methane crediting:

- **The LCFS diverts biomethane to the on-road transportation sector, despite the overwhelming consensus that this is the wrong application.** There is consensus across CARB's Scoping Plan, Mobile Source Strategy, and State Implementation Plan that biomethane should not play a significant long-term role in transportation. A report on the role of bioresources in economy-wide decarbonization by the independent think-tank Energy Transitions Commission specifically advises against even a transitional role for bioenergy in road transportation, stating that policies that support road transport applications "create significant stranded asset threat, driving inefficient investment allocation and creating a powerful lobbying group in favor of existing policy."⁴³ Unfortunately, avoided methane credits in the LCFS do precisely this. As the CEC explains, "[t]he LCFS credits can be three times higher than the cost to produce the fuel." Until CARB eliminates avoided methane credits, the LCFS will continue to divert biomethane toward applications where its use has been criticized.
- **The LCFS offers far greater subsidies for methane-burning trucks than for ZEVs.** Contrary to the State's clear direction to achieve widespread deployment of ZE technology—embodied in CARB's recent approval of the State Implementation Plan—Staff's Proposal would continue preferencing methane-burning vehicles and misdirect fleets to invest in combustion technology and infrastructure. As Earthjustice has explained in multiple comments, relying on CARB's own research and statements, methane-burning trucks are not a clean air solution.⁴⁴ Yet the LCFS sends the signal that methane-burning trucks are a far more valuable strategy for displacing diesel in the transportation sector than zero-emissions trucks powered by renewable energy. A fleet that replaces one diesel truck with a single methane-burning truck can generate more value from the LCFS than a fleet that replaces 3 diesel trucks with battery electric trucks powered by entirely renewable electricity.
- **The LCFS offers far greater subsidies for dirty hydrogen than for green hydrogen.** The most common hydrogen pathway certified under the LCFS is for dirty gray hydrogen producers cited near refinery communities to book-and-claim avoided methane credit attributes from remote biogas projects. This outcome is entirely predictable because as we explain below, the lavish avoided methane credit CI values, coupled with non-existent deliverability requirements, means vastly higher profits can

⁴² *Id.*

⁴³ Energy Transitions Commission, *Bioresources within a Net-Zero Emissions Economy* (July 2021) at 71, <https://www.energy-transitions.org/publications/bioresources-within-a-net-zero-economy/>.

⁴⁴ See, Earthjustice, *Comments on February 22, 2023 Workshop* (Mar. 15, 2023) at 14, <https://www.arb.ca.gov/lists/com-attach/159-lcfs-wkshp-feb23-ws-Wz5VMIwvVXIEagRu.pdf>.

be generated by producing hydrogen through the status quo, polluting Steam Methane Reformation (SMR) method than by investing in new electrolyzers and accompanying renewable energy. ARCHES—California’s Federal Hydrogen Hub application—is prioritizing development of green hydrogen and expressly committed not to include hydrogen from dairy biomethane or fossil methane paired with biogas credits.⁴⁵ The persistence of avoided methane credits in the LCFS all but guarantees that those excluded production practices will remain the most valued in California and undercuts any rational economic incentive to invest in new electrolyzers.

- **The LCFS offers lavish subsidies exclusively to large, polluting concentrated animal feeding operations (CAFOs) and disadvantages smaller, more sustainable livestock operations.** A sensible and just climate strategy would target incentives toward dairy farms that already use more sustainable management practices and maintain more sustainable herd sizes, while increasing the costs of business for the largest, highest— revenue generating, most polluting operations. CARB takes the opposite approach. Small farms or those that avoid producing methane in the first place are excluded from the LCFS, while the largest, industrialized CAFOs that have chosen to rely on manure lagoons are able to unlock extravagant new revenue streams. A California Assembly Oversight analysis raised alarms that the State’s policies could “provide the largest 225 dairies with a subsidized competitive advantage over smaller dairies” and warns that the State “may be going down a dangerous path for smaller dairies, where these projects don’t seem viable.”⁴⁶

What is more, despite these significant drawbacks, there is little evidence that avoided methane crediting is even effective at the one thing its purport to do – reduce California’s methane emissions. Over 80% of the biomethane in the LCFS program as of 2022 was from out of state, so while California drivers pay for this subsidy, it has no benefit in California’s GHG inventory. In some instances, the subsidies go to out of state dairies that may actually be changing their practices from a more sustainable baseline where they were not producing methane purely to be able to capture California subsidies. For instance, one dairy farmer in New York interviewed for a recently published study shared, “[i]f 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...it makes no sense.”⁴⁷ Emissions from digesters within California appear to be no better. Although CARB does not monitor emissions from these digester systems on an ongoing basis, recently published studies of real-world methane measurements found CAFOs

⁴⁵ ARCHES, Frequently Asked Questions (Accessed Feb. 20, 2024), <https://archesh2.org/frequently-asked-questions/>.

⁴⁶ California Assembly Budget Committee, Subcommittee Hearing No. 3 on Resources and Transportation (Apr. 19, 2017) at 20, <https://abgt.assembly.ca.gov/sites/abgt.assembly.ca.gov/files/April%2019%20-%20Toxics%20Recycling%20Ag.pdf>.

⁴⁷ M. Hanna Pierce et al., An Evaluation of New York State Livestock Carbon Offset Projects in California’s Cap and Trade Program (May 2023), <https://www.tandfonline.com/doi/full/10.1080/17583004.2023.2211946> (emphasis added).

with digesters exhibited virtually the same level of methane emissions as those without.⁴⁸ CARB’s own data shows “mega-emitting” farms that have been equipped with digesters.⁴⁹

Even if methane capture is being achieved at promised levels, it is almost certainly overstated as a result of double- and even triple-counting. Recent reporting has shed light on how multiple state programs take credit for the same purported reductions achieved by these digesters, meaning they are often improperly attributed to multiple programs.⁵⁰ Awarding excessive credits for practices that have already been required or supported wastes scarce funding for no additional climate benefit.

California’s approach stands in contrast to the Federal Government’s treatment of biomethane. In its proposed guidance for the federal 45V hydrogen production tax credits, the U.S. Treasury Department (Treasury) recently recognized the imperative to avoid precisely the kind of double-counting in the biomethane space that the LCFS allows. In its proposed guidance, Treasury established the requirement that biomethane could only be treated with a CI lower than fossil gas if use for hydrogen constituted the “first productive use” of the biomethane.⁵¹ It explains that [t]his proposal would limit emissions associated with the diversion of biogas or RNG from other pre-existing productive uses.”⁵² Treasury also made clear its intention to establish requirements to “reduce the risk that entities will deliberately generate additional biogas” for the purpose of receiving the tax credit, “for example by generating biogas through the intentional generation of waste.”⁵³ By contrast, **California has no requirements that prevent intentional production of additional methane**, nor does it monitor methane levels or publicly disclose methane volumes or herd sizes. California also lacks restrictions on use of biomethane that has previously been captured for other productive uses, making it easy for pathways to receive significant avoided methane credit value for little or no additional climate benefit, and without safeguards against intentionally producing *more* methane.

Therefore, California’s strategy of trying to entice polluters to capture their methane through transportation subsidies, instead of direct regulation, has not only come at significant cost to attainment of our State’s climate goals, but it has also grossly under-delivered on its one purported methane-reduction benefit and perpetuated a system of false GHG accounting that federal policymakers are rightly rejecting.

⁴⁸ N.T. Vechi et al., Ammonia and Methane Emissions from Dairy Concentrated Animal Feeding Operations in California, Using Mobile Optical Remote Sensing (Jan. 2023), <https://doi.org/10.1016/j.atmosenv.2022.119448>.

⁴⁹ See Carbon Mapper Data, <https://carbonmapper.org/>.

⁵⁰ Phil McKenna, “Is California Overstating the Climate Benefit of Dairy Manure Methane Digesters?” (Dec. 30, 2023) <https://insideclimatenews.org/news/30122023/milking-it-california-overstating-climate-benefit-dairy-manure-methane-digesters/>.

⁵¹ Section 45V Credit for Production of Clean Hydrogen, 88 Fed. Reg. 89238 (Dec. 26, 2023).

⁵² *Id.* at 89239.

⁵³ *Id.*

c. Changes to Biomethane Crediting Run Counter to Board Direction.

While Earthjustice objected to CARB’s initial proposal for delaying until 2030 the phase out of avoided methane crediting during the workshop process, we note that even CARB Staff acknowledged the need to discontinue the practice. Alarming, between the SRIA and the December release of the ISOR, it appears that Staff is now further delaying this already overdue phase out. The September draft allowed one 10 year crediting period with avoided methane credits for pathways certified prior to 2030, and would allow a 5 year crediting period for pathways certified between 2030 and 2034 (implying that the practice would finally end for new pathways in 2035).

The new proposal inexplicably abandons these distant restrictions. It shifts the goal posts from the date of certification to the date a project “breaks ground” (which can be 2 or more years prior to certification) and allows up to 3 10-year crediting periods for all those projects that break ground prior to 2030. For those that break ground after 2030, the crediting period is extended from 5 years to until 2040, or until 2045 if they choose a hydrogen pathway.

There is no public discussion for why this change has been made, and there is no honest assessment of the September Board meeting that would indicate this change was made at the direction of the Board. At the hearing, the Board Members that did speak about avoided methane crediting and livestock methane virtually all raised concerns with the practice. These include the following statements:

- **Board Member Hector De La Torre:** “The CI for avoided methane - I would like to see that tightened up... I understand the logic of why we do what we do, but I still think it is too generous in comparison to everything else. So, when I saw that chart that Staff presented that shows most things above the line and a couple things below the line. That gives me heartburn... We can make adjustments that are rational, that are based on science, and based on **our** judgements of what we’re looking to do”⁵⁴
- **Board Member Gideon Kracov:** “We regulate every major source of methane and GHG emissions... But not the dairies? Instead, consumers pay them!... This is about LCFS and this exceptionalism seriously distorts our LCFS CI crediting. SB 1383 itself explicitly says this sector can be regulated in 2024. That’s in 3 months. That was the deal!... I would support this, and a Board resolution indicating that we will initiate in 2024 a rulemaking for this sector.”⁵⁵
- **Board Member Davina Hurt:** “Dairy digesters are a small portion of the LCFS but it definitely has a large impact on communities struggling for clean air – in communities of color... How do we ensure that we are not incentivizing and subsidizing manure to be more valuable than milk? This is what I’m thinking about... I never want us to get to... I think the saying is the tail wagging the dog.”⁵⁶

⁵⁴ CARB Board Meeting Transcript (Sept. 28, 2023) at 310, <https://ww2.arb.ca.gov/sites/default/files/barcu/board/mt/2023/mt092823.pdf> (emphasis added).

⁵⁵ *Id.* at 318-319.

⁵⁶ *Id.* at 322.

- **Board Member Diane Takvorian** (in a quote to Inside CalEPA): “I’m concerned about the irresponsibility of sending a signal that we want to continue that [avoided methane] crediting for another 17 years and increase the economic dependence on this system. I am very concerned in terms of the impact on human health, and our impacts on not incentivizing other methodologies as much as we can. . . . It just doesn’t make sense to me that some purely electric systems would have a higher carbon intensity than digesters.”
- **Board Member Henry Stern** (to a joint rally of airport workers and frontline factory farm residents): “This is the alliance that can win. I will stand with you at the Board meeting, and we’re going to keep fighting...Because so far it’s been all carrots and no regulation!”
- **Board Member Tania Pacheco-Werner**: “I think it’s important to think about everyone here as a partner. I really want all of us to think about: in our meeting the challenge to save the planet - in 2045 when we look back, we can truly say we are proud of what we did, and that no community was sacrificed to make this happen. And I think if we use that as our North Star, we can come up with really good solutions that continue to see our industries as partners but also challenge them to build on the most innovative practices that yield the most public health benefit.”⁵⁷

The Board thus clearly indicated support for reducing avoided methane crediting practices relative to the initial proposal from September. Yet, Staff have swung wildly in the other direction in the Staff Proposal. **To our knowledge, it is unprecedented for the Staff to advance a major policy change that run directly counter to the stated concerns of many Board members.** Staff must correct course. In light of the long overdue nature of this phase-out, we urge CARB to ensure avoided methane crediting is eliminated from new pathways without further delay in this rulemaking.

⁵⁷ *Id.* at 325 (emphasis added).

3. Immediately End the Practice of Allowing CNG Companies to Greenwash Fossil Methane through the Purchase of Unbundled Biomethane Credits.

Biomethane Deliverability

Summary of Problem: A lack of deliverability requirements for biomethane allows fossil methane producers to greenwash their fuels by using unbundled “environmental attribute” credits that do nothing to contribute to California’s climate goals.

Earthjustice Recommendation: Align LCFS deliverability requirements for all fuels, including biomethane, with the RPS beginning in 2025.

Why Staff Proposal Is Inadequate: Staff proposes a weak deliverability requirement to apply to biomethane dispensed at CNG stations in 2041 and for biomethane used for hydrogen production in 2046. These extended timelines are unjustified and will perpetuate greenwashing for decades and fails to align with other programs.

Under Staff’s proposed deliverability requirement, industry would only be able to buy biomethane credits from entities that inject biomethane into a pipeline that flows toward California, but they would still be able to characterize their fossil methane purchases as biomethane by buying unbundled credits.

The LCFS gives CNG companies a unique greenwashing opportunity that is not available to any other fuel provider: The CNG industry alone can take credit for using low-carbon fuels that are never delivered to California. Consequently, the CNG industry is now generating lavish credits for purchasing unbundled credits that do nothing to advance the fundamental purpose of the LCFS, which is to reduce the carbon intensity of California’s transportation fuels.⁵⁸ The Staff Proposal is yet another misdirection running counter to the Board’s September comments to Staff. The deliverability requirement is completely excluded for pathways prior to 2030 (or later, based on the unclear “break ground” concept), and projects entering after 2030 have another 11 to 16 years of no deliverability requirements. This subsidizes the very technologies that CARB in other regulations and policies says we must move away from, including combustion CNG vehicles and dirty SMR hydrogen production. By continuing to give public funds to support outdated technologies, CARB is undermining its own ZEV and carbon neutrality goals, for the profit of mostly out-of-state companies, and at the expense of Californians. This U-turn on what Staff told the Board they were considering in September flies in the face of Board direction to go even stronger on deliverability requirements at that meeting, where Board Member Gideon Kracov stated that “these changes to the delivery requirements that are proposed should take effect immediately for all new projects, all the new crediting pathways.”⁵⁹

⁵⁸ ISOR at 6 (“The purpose of the LCFS regulation is to reduce the carbon intensity (CI) of transportation fuels used in California”).

⁵⁹ CARB Board Meeting Transcript (Sept. 28, 2023) at 315, <https://ww2.arb.ca.gov/sites/default/files/barcu/board/mt/2023/mt092823.pdf>.

To align its deliverability requirements with the Renewable Portfolio Standard (RPS), CARB should only allow an entity to claim it dispenses biomethane if it buys biomethane (bundled with its environmental attributes) and contracts for its delivery to California and any interstate deliveries via common carrier pipelines use pipelines that flow toward California. This commonsense reform will eliminate a stain on the integrity of the LCFS and align the LCFS with federal practice.

As shown in Table 1, the ISOR's delayed phase-in for the biomethane deliverability requirement is part of a troubling pattern. The ISOR's proposed amendments related to biomethane would not only fail to provide the immediate corrections that are necessary to end unjustified subsidies for polluting fuels—they are delayed beyond the unacceptably prolonged timelines discussed in public workshops.

Table 1: Comparing the Timelines for Limiting Unjustified Biomethane Subsidies Proposed in Workshops with the those Proposed in the ISOR

| Policy | Public workshops | Staff Proposal | Issue | Fix |
|--|--|---|---|--|
| Avoided Methane Crediting (AMC) | <p>Allow AMC for 10 years for project certification or recertification before 2030.</p> <p>Allow AMC for 5 years for projects recertified between 2031 and 2035 (i.e., no new project AMC approved after 2030).</p> <p>AMC is phased out of LCFS by 2040, with no new AMC approved for new projects after 2030.</p> | <p>Allow projects that “break ground” prior to 2030 up to 30 years of AMC.</p> <p>Allow RNG used in CNG vehicles to get 10 years of crediting if applying between 2030 and 2041.</p> <p>Allow RNG used for book-and-claim hydrogen to get 10 years of crediting if applying between 2030 and 2046.</p> <p>Allows AMC through 2060 for certain projects, 2056 for others, and 2051 for others.</p> | <p>The original concept was flawed and the ISOR policy goes counter to Board direction provided to Staff in September 2023, what Staff have said numerous times in pre-rulemaking workshops, and Scoping Plan direction to move RNG out of transportation and to move the State away from combustion.</p> | <p>End AMC for all new pathways starting 2025. Allow current 10-year crediting periods to finish.</p> |
| Biomethane Deliverability | <p>Align deliverability concepts with RPS / CPUC 1440 Program beginning in 2028.</p> <p>Book-and-claim RNG-to-hydrogen is exempt.</p> | <p>Only apply deliverability requirements to project that “break ground” after 2029, and those requirements only begin in 2041 for CNG vehicles and 2046 for book-and-claim hydrogen.</p> <p>Lifetime exemption of deliverability requirement for projects that “break ground” before 2030. For projects entering LCFS after 2029, they only have to begin to show deliverability starting in 2041 (for vehicle combustion) or 2046 (for book-and-claim hydrogen).</p> | <p>The original concept was flawed as there is no reason to delay delivery requirements that have uniquely favored RNG, and no reason to exempt any pathways. These do not help meet State climate goals in AB 1279 because they are not included in California’s GHG inventory.</p> <p>Continues to treat biomethane differently from other fuels, which are required to be delivered to California.</p> | <p>Require deliverability for all pathways beginning in 2025.</p> |
| “Break Ground” Concept | <p>Never discussed by Staff. Workshop concept introduced phase-outs based on date “pathways certified or recertified.”</p> | <p>Allows projects that apply for LCFS years after the official policy has sunset that only applies to biomethane projects, including book-and-claim.</p> | <p>This nebulous concept will result in LCFS project approvals for years after 2030. Favors biomethane projects over ZEV. No such provisions for ZEV projects.</p> | <p>Remove this concept.</p> |

a. The Current Rules Grant Biomethane Special Status as the Only LCFS Fuel that Can Claim Unbundled Credits that Do Not Reduce Climate Pollution from California Transportation Fuels.

Under the current LCFS rules, CNG companies can generate credits for supplying biomethane even when the fuel procurements for their fueling stations are 100% fossil methane. These companies purchase fossil methane in the natural gas commodities market and contract for delivery of their fossil gas via natural gas pipelines. These CNG fueling companies can generate valuable LCFS credits by using a process that the regulation refers to as “book-and-claim” accounting to characterize their fossil fuels as biomethane. Under this scheme, a CNG company must simply purchase the environmental attributes of biomethane that is injected into a common carrier pipeline anywhere in North America and submit attestations regarding those environmental attributes.⁶⁰ There is no requirement for the LCFS credit generator to purchase the biomethane itself or even that the biomethane flow toward California.⁶¹ Thus, the unbundled environmental attributes essentially allow CNG companies to claim they offset emissions from the fossil fuels they procure and sell to the public.

The purchase of biogas credits from Wisconsin cow manure illustrates how CNG suppliers generate outsized credits without reducing the carbon intensity of California’s transportation fuels. Wisconsin dairies that sell environmental attributes into the LCFS program sell the biomethane to their utilities, which inject the biomethane into their local gas distribution systems (i.e., the pipes that flow to their customers’ homes and businesses—not interstate pipelines).⁶² The CNG industry uses these unbundled attributes to generate a bounty of credits, with CNG paired with Wisconsin manure credits currently garnering carbon intensity scores from -130 to -453 gCO₂e/MJ.⁶³ These negative carbon intensity scores reflect bogus carbon accounting, as the dairies participating in the utility program had previously captured their methane and used it to generate electricity.⁶⁴ Nonetheless, the dairies receive such generous compensation for selling credits into the LCFS program that they are willing to sell their biomethane to the local utility for less than the price of fossil gas.⁶⁵ Driving down the price of methane in Wisconsin threatens to induce additional gas consumption, lock in dependence on gas, and, increase greenhouse gas emissions. CARB can avoid these perverse outcomes by

⁶⁰ 17 California Code of Regulations (CCR) § 95488.8(i)(2).

⁶¹ *Id.*

⁶² Chris Hubbuch, Wisconsin State Journal, Biogas: Wisconsin utilities partner with farmers to replace fossil gas (July 19, 2022), https://madison.com/news/local/environment/biogas-wisconsin-utilities-partner-with-farmers-to-replace-fossil-gas/article_a88d7d1f-ec1f-56ed-b5c1-d12d2cd3d814.html.

⁶³ This is the range of CI scores listed for unretired fuel pathways in CARB’s Current Fuels Spreadsheet for the CNG Fuel Type and with a Wisconsin Facility Location (Jan. 9, 2024 ed.), https://ww2.arb.ca.gov/sites/default/files/classic/fuels/lcfs/fuelpathways/current-pathways_all.xlsx.

⁶⁴ Chris Hubbuch, Wisconsin State Journal, Biogas: Wisconsin utilities partner with farmers to replace fossil gas (July 19, 2022), https://madison.com/news/local/environment/biogas-wisconsin-utilities-partner-with-farmers-to-replace-fossil-gas/article_a88d7d1f-ec1f-56ed-b5c1-d12d2cd3d814.html.

⁶⁵ *Id.*

treating biomethane like every other fuel—requiring credit generators to procure biomethane through bundled contracts and taking delivery of it.

No other fuel suppliers can greenwash fossil fuels by purchasing the unbundled environmental attributes of fuels that are not delivered to California. For instance, as shown in Table 2, entities cannot generate LCFS credits by pairing their sales of fossil diesel with the renewable attributes of renewable diesel. To generate credits for selling renewable diesel, entities must procure and take delivery of that renewable diesel.⁶⁶ Similarly, the LCFS’ book-and-claim rules for low-CI electricity require electricity to be generated within California or meet the deliverability requirements for Portfolio Content Category 1 Renewable Energy Certificates.⁶⁷ In practice, this commonsense requirement ensures that CARB will not consider an electric vehicle charged on the California grid to be powered by a renewable electricity generator unless that generator actually energizes the California grid. As CARB Staff explained in this rulemaking process, “CARB needs . . . pathway or documentation of feedstock usability in California” to consider a feedstock for the LCFS program.⁶⁸ CARB should immediately end biomethane’s unjustified exception from this rule.

⁶⁶ California Government Code § 95488.2(b)(4) (entities to specify a transport mode for each LCFS pathways registration); § 95481(a)(57) (defining “fuel transport mode” to mean “the applicable combination of actual fuel delivery methods, such as truck routes, rail lines, pipelines, and any other fuel distribution methods, and the distance through which the fuel was transported under contract from the entity that generated or produced the fuel, to any intermediate entities, and ending at the fuel blender, producer, importer, or provider in California. The fuel pathway holder and any entity reporting the fuel must demonstrate that the actual fuel transport mode and distance conforms to the stated mode and distance in the certified pathway.”).

⁶⁷ CARB, LCFS Guidance 19-01 at 2,

https://ww2.arb.ca.gov/sites/default/files/classic/fuels/lcfs/guidance/lcfsguidance_19-01.pdf.

⁶⁸ CARB, Staff Workshop Presentation (Nov. 9, 2022), slide 19.

Table 2: Deliverability Requirements for LCFS Fuels: Biomethane Is the Outlier

| LCFS Fuel | Is Delivery to California Required? |
|--|--|
| Renewable diesel | Yes |
| Biodiesel | Yes |
| Ethanol | Yes |
| Aviation fuel | Yes |
| Electricity | Yes. Low-CI electricity used as a transportation fuel must be delivered to a California balancing authority. For out-of-state hydrogen producers, low-CI electricity must be delivered to their local balancing authority. |
| Fossil natural gas | Yes |
| Biomethane used for process energy (e.g., biomethane burned for heat or power at oil refineries) | Yes. Biomethane used for process energy “must be physically supplied directly to the production facility.” 17 CCR § 95488.8(h)(2). |
| Biomethane used for CNG fueling and hydrogen production | No. Staff proposes a weak deliverability requirement to apply to biomethane dispensed at CNG stations in 2041 and for biomethane used for hydrogen production in 2046, and these dates only apply to projects that “break ground” after 2029. |

b. Staff’s Proposal Does Not Address the Problem and Would Continue the LCFS’s Status as an Outlier in Its Faulty Treatment of Biomethane.

Staff propose a long-delayed and incomplete solution to the problem of the LCFS providing credits for biomethane that does nothing to meet State GHG and SLCP reduction goals. Staff propose adding a deliverability requirement for a very limited set of biomethane projects starting in 2041, but the ISOR provides no rationale for this delay.⁶⁹ Rather than delay action for over a decade, CARB should immediately end the CNG industry’s opportunity to generate credits for biomethane that does not reduce the carbon intensity of California’s transportation fuels.

Staff’s proposal is inferior to requiring purchases and delivery contracts for biomethane for multiple reasons. First, it provides a credit generation opportunity to CNG companies that prop up the fossil fuel industry by purchasing fossil methane. Second, Staff’s proposed deliverability requirement fails to achieve its stated purpose of aligning with other programs, as it does not incorporate the basic standards that CARB’s sister agencies require. The ISOR explains that Staff’s approach is designed “to align the deliverability policy for biomethane in the California Energy Commission’s Renewables Portfolio Standard (RPS) program (Public Utilities Code section 399.12.6) and the California Public Utilities Commission 1440 program.”⁷⁰

⁶⁹ ISOR at 31.

⁷⁰ *Id.*

However, neither the RPS nor 1440 programs allow industry to greenwash the fossil fuels with purchase of unbundled environmental attributes. Instead, these programs require entities that claim to use biomethane to procure biomethane and deliver it to California.⁷¹ In fact, the CPUC has recognized that allowing “Utilities to purchase renewable attributes separate from physical RNG . . . would result in negligible to no direct environmental benefits to California, contradictory to the statutory and policy goals” of SB 1440.⁷² Table 3 demonstrates the LCFS’s outlier status. CARB should catch up with its sister agencies and put an end to this carbon accounting gimmick in the LCFS program.

Moreover, the LCFS’s subsidies for fossil fuel companies that purchase unbundled biogas credits set it apart from the commonsense approach at the federal level. In the RFS program, U.S. Environmental Protection Agency only allows entities to take credit for biogas if several conditions are met, including that the “biogas/CNG/LNG was injected into and withdrawn from the same commercial distribution system” and that the entity contracted for the specific quantity of renewable CNG used as a transportation fuel.⁷³ It is particularly unacceptable for California’s LCFS to lavishly subsidize fossil fuel users who purchase unbundled biogas credits, when such gimmicks are not tolerated at the federal level.

Table 3: Comparison of the LCFS with Other Programs that Include Biomethane

| Programs that Include Biomethane | Does It Require Deliverability? |
|--|--|
| CEC’s RPS | Yes |
| CPUC SB 1440 Program | Yes |
| EPA’s RFS | Yes |
| LCFS (process energy) | Yes |
| LCFS (CNG fueling and hydrogen production) | No |

⁷¹ In the RPS program, facilities claiming to use biomethane must enter a biomethane procurement contract. CEC, RPS Eligibility Guidebook, Ninth Edition Revised (2017) at 7. To ensure entities claiming to use biomethane can legally take delivery of that biomethane, the CEC also requires entities to “enter into contracts for the delivery (firm or interruptible) or storage of the gas with every pipeline or gas storage site operator transporting or storing the gas from the injection point to the final delivery point.” *Id.* at 9. SB 1440 authorized targets for biomethane procurement, not environmental attribute procurement. Cal. Public Utilities Code § 651(a). Once a utility procures biomethane, it can only legally take delivery of that fuel and provide it to its customers if it has legal access to the gas pipeline infrastructure that connects the biomethane supplier to the utility’s customers. In implementing SB 1440, the Public Utilities Commission avoided double-counting environmental attributes by requiring the utilities that procure methane to “maintain exclusive ownership of all environmental attributes from contracted renewable fuel sources.” Decision 22-02-25, Decision Implementing Senate Bill 1440 Biomethane Procurement Program at 57, Conclusion of Law 19,

<https://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M454/K335/454335009.PDF>.

⁷² Decision 20-12-022, Decision Adopting Voluntary Pilot Renewable Gas Tariff Program at 20,

<https://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M356/K268/356268059.PDF>.

⁷³ 40 Code of Federal Regulations § 80.1426(f)(11)(ii).

Although Staff’s proposal regarding deliverability is insufficient as detailed above, its proposed approach to *determining* deliverability is workable. Specifically, Staff proposes requiring a “demonstration that eligible biomethane is carried through common carrier pipelines that physically flow within California or toward end use in California.”⁷⁴ Data is readily available on the flow of gas pipelines because the U.S. Energy Information Administration (EIA) publishes annual data on the volumes that flow in each interstate pipeline across state lines.⁷⁵ The EIA has also synthesized this data into a map that shows that flow of the nation’s interstate gas pipelines.⁷⁶ Thus, even if CARB decides to base its deliverability requirement on the direction of interstate pipeline flows, there is no barrier to implementing this requirement immediately.

c. Real Solutions Are Needed in this Rulemaking.

CARB should stop allowing industry to greenwash fossil methane with unbundled environmental attributes in beginning in 2025. To actually reduce the carbon intensity of California transportation fuels, CARB should immediately require entities that claim to use biomethane to justify their claims by actually purchasing and contracting for delivery of that biomethane. To adopt meaningful requirements, CARB can borrow model language from the RPS program. To use biomethane in the RPS, the CEC requires contracts for biomethane procurement, contracts for the delivery of the gas that cover the full route from the injection site to the final point of delivery, and that any pipeline delivery use pipelines that flow in the direction of California.⁷⁷ The ISOR provides no rationale for adopting a deliverability requirement that lacks these commonsense elements of the RPS requirements.

⁷⁴ *Id.*

⁷⁵ EIA, Natural Gas, providing relevant data for download in the agency’s releases on U.S. state-to-state capacity, <https://www.eia.gov/naturalgas/data.php#pipelines>.

⁷⁶ EIA, Natural Gas Market Module of the National Energy Modeling System: Model Documentation 2022 (Aug. 2022) at 3, [https://www.eia.gov/outlooks/aeo/nems/documentation/ngmm/pdf/ngmm\(2022\).pdf](https://www.eia.gov/outlooks/aeo/nems/documentation/ngmm/pdf/ngmm(2022).pdf).

⁷⁷ CEC, RPS Eligibility Guidebook at 7, 9–10.

4. Eliminate Flawed Carbon Accounting Practices that Lead to Lavish Subsidies for Dirty Hydrogen and Undermine Green Hydrogen Production.

Hydrogen

Summary of Problem: Over-subsidizing methane-derived hydrogen from outdated technology undermines development of zero-emissions electrolytic hydrogen. No certified pathways for hydrogen production with livestock biomethane advance California’s climate goals. Instead, all pathways match “environmental attribute” credits from Indiana, Wisconsin, Minnesota, New York, or Missouri to characterize their fossil fuels as carbon-negative.

Earthjustice Recommendation: (1) Apply deliverability requirements for biomethane used in hydrogen production in 2025; (2) End avoided methane crediting for methane used in hydrogen production in 2025.

Why Staff Proposal Is Inadequate: Staff recommends a deliverability requirement for biomethane used in hydrogen production in 2046 and ending avoided methane crediting in new hydrogen pathways in 2045. Thus, for biomethane used in hydrogen production, Staff proposes an additional delay of five years to apply the proposed reforms for biomethane used for CNG fueling. This timeline will stymie the market for zero-emissions hydrogen as a transportation fuel and continue subsidizing greenwashed fossil hydrogen for another two decades.

The LCFS creates a perverse incentive for industry to produce dirty hydrogen from the steam methane reformation (SMR) of fossil fuels (paired with bogus biogas credits) by providing far more lucrative subsidies for this emissions-intensive hydrogen than for truly clean, zero-emissions electrolytic hydrogen. Consequently, the LCFS undermines the nascent market for the innovative zero-emissions hydrogen technologies that are consistent with attaining the NAAQS. CARB should address these unintended consequences by ending two key policies that over-subsidize hydrogen produced from methane: (1) allowing companies that purchase fossil methane to greenwash the gas they use by purchasing unbundled biogas credits that do not reduce the carbon intensity of California transportation fuels; and (2) falsely assuming that livestock biomethane is a carbon-negative resource.

The CEC has recently recognized that this offsetting scheme is not sufficient for achieving California’s goals. In its proposed 2023 Integrated Energy Policy Report, the CEC explains: “Hydrogen fuel is often sourced from fossil sources (for example, methane) and uses carbon offsets to reduce the carbon footprint. Longer term, renewable hydrogen must be a critical component to fully achieve state goals for clean energy.”⁷⁸ CARB should end offsetting opportunities in the LCFS now, as prolonging this flawed system will only entrench it and make it more difficult to achieve State renewable energy goals.

⁷⁸ CEC, Proposed 2023 Integrated Energy Policy Report (Jan. 31, 2024) at 75, <https://efiling.energy.ca.gov/GetDocument.aspx?tn=254255&DocumentContentId=89629>.

In addition, CARB should improve its carbon accounting for electrolytic hydrogen by using the H2-GREET model that the federal government is developing through a thorough examination on the best available science on the emissions impacts of hydrogen production. The ISOR proposes a system for determining the carbon intensity of electrolytic hydrogen that does not match the rigor of the approach in the U.S. Treasury Department’s proposed guidance.

a. The LCFS Is Kneecapping the Market for Zero-Emissions Hydrogen and Impeding Progress toward Achieving Air Quality Standards by Over-Subsidizing Hydrogen Produced from Methane and Encouraging Expansion of Dirty Hydrogen Facilities.

The current LCFS rule fails to incentivize genuinely zero-emissions, green hydrogen because it lavishes more credits on entities that produce hydrogen from fossil fuels (paired with unbundled biogas attributes) than on entities who invest in the cleaner technology. For instance, AC Transit’s pathway for hydrogen produced from electrolysis powered by solar photovoltaics in Alameda County receives a carbon-intensity score of 0 gCO₂e/MJ.⁷⁹ According to the LCFS credit calculator, this amounts to a credit value of \$1.40/kg of hydrogen, given current credit prices. Meanwhile, hydrogen produced from SMR fossil gas in Wilmington coupled with the purchase of environmental attributes from dairy methane in Indiana receives a carbon intensity score of -287 gCO₂e/MJ.⁸⁰ This hydrogen generates credits worth \$3.81/kg of hydrogen, given current credit prices. In a departure from the standard practice of providing the greatest policy support for the more expensive, next-generation technologies needed to achieve climate and air goals, the LCFS is providing greater incentives to polluting technologies that even CARB acknowledges are cheaper than zero-emission electrolytic hydrogen.⁸¹ Thus, companies can maximize profits by producing hydrogen through SMR of fossil gas—a polluting industrial process that is already the most common and lowest cost means of producing hydrogen in the United States—rather than invest in the nascent market for zero-emissions hydrogen production. Zero-emissions hydrogen producers face a financial double-whammy: (1) their cleaner technology is newer and more expensive, and (2) the best CI they can achieve is 0, whereas SMR facilities that use book-and-claim can characterize their hydrogen as carbon negative.

The LCFS’s certified hydrogen pathways reveals that industry is, in fact, seizing the incentive to maximize credits by producing hydrogen with fossil fuels and purchasing biogas attributes that contribute nothing to California’s climate goals. Each of the certified hydrogen pathways listed as using biomethane from dairy manure actually pairs fossil gas feedstocks with unbundled purchases of environmental attributes from Indiana, Wisconsin, New York or Minnesota to earn a negative carbon intensity score.⁸² Likewise, every single certified pathway for hydrogen that is characterized as using biomethane from swine manure is for a fossil SMR

⁷⁹ CARB, Current Fuel Pathways (Jan. 9, 2024 ed.), https://ww2.arb.ca.gov/sites/default/files/classic/fuels/lcfs/fuelpathways/current-pathways_all.xlsx.

⁸⁰ *Id.*

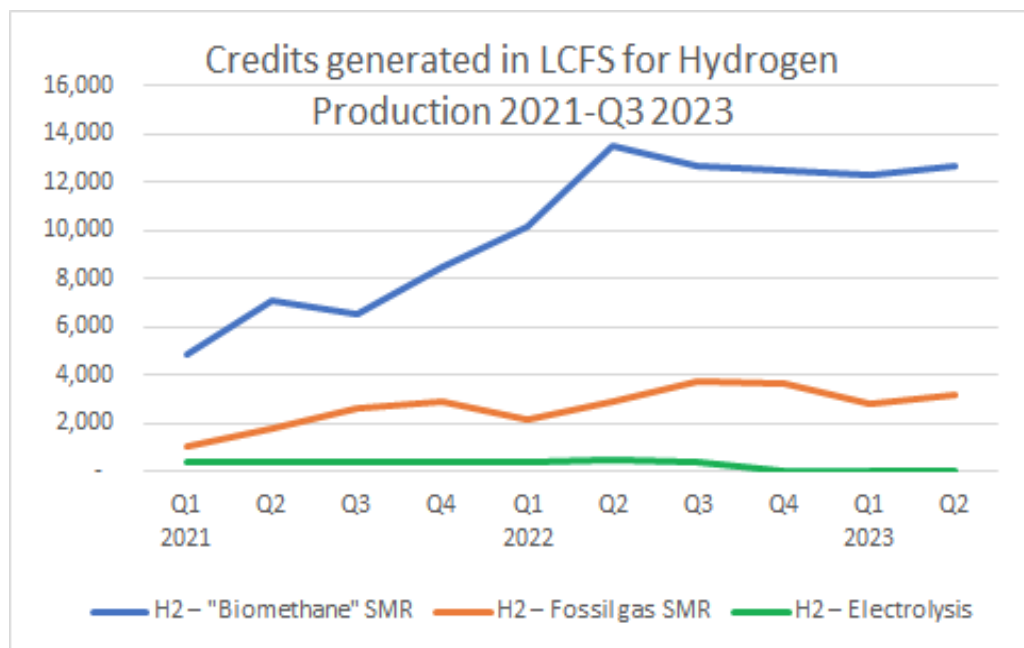
⁸¹ In CARB’s LCFS modeling, hydrogen from dairy gas is \$51.20/MMBTU, while zero-CI electrolytic hydrogen is \$137.00/MMBTU.

⁸² CARB, Current Fuel Pathways (Jan. 9, 2024 ed.), https://ww2.arb.ca.gov/sites/default/files/classic/fuels/lcfs/fuelpathways/current-pathways_all.xlsx.

facility that purchases the environmental attributes of biomethane in Missouri, and the only pathway for producing hydrogen that claimed to use biomethane from wastewater sludge was for a fossil SMR facility that purchases environmental attributes from a water treatment plant in Texas.⁸³ Without reform, the LCFS’s purportedly “renewable” hydrogen pathways will remain dominated by greenwashed fossil fuels.

The impact on the LCFS can be seen from CARB’s own data. The chart below in Figure 3 shows the number of credits earned by the different hydrogen production pathways. While data are only available since 2021, the trend is clear—SMR hydrogen is the winner and electrolytic hydrogen is the loser.

Figure 3: Credits Generated in the LCFS for Hydrogen Production



The LCFS’ incentive to produce hydrogen through SMR instead of zero-emissions processes is inconsistent with California’s plans for achieving health-based air quality standards. SMR facilities emit health-harming pollution such as NOx, carbon monoxide, and fine particulate matter.⁸⁴ Reliance on SMR threatens the achievement of air quality standards in California’s most polluted air basins, where regulators have noted that “there is no viable pathway to achieve the needed reductions without widespread adoption of zero emissions (ZE) technologies across all mobile sectors and stationary sources, large and small.”⁸⁵ Yet the LCFS

⁸³ *Id.*

⁸⁴ Sun et al., Criteria Air Pollutants and Greenhouse Gas Emissions from Hydrogen Production in U.S. Steam Methane Reforming Facilities, *Env’t Sci. & Tech.*, Vol. 53 (Apr. 2019), www.osti.gov/pages/servlets/purl/1546962.

⁸⁵ South Coast Air Quality Management District, 2022 Air Quality Management Plan (Dec. 2022) at ES-5, <http://www.aqmd.gov/docs/default-source/clean-air-plans/air-quality-management-plans/2022-air-quality-management-plan/final-2022-aqmp/final-2022-aqmp.pdf?sfvrsn=16>.

provides a strong incentive to construct new SMR facilities, which are long-lived capital investments that would lock in pollution for decades.

CARB should immediately fix the two flawed elements of the LCFS regulation that lead to these absurd results.

b. CARB Should Require Hydrogen Producers that Claim to Use Biomethane to Procure and Contract for Delivery of that Biomethane, Rather than Allowing Them to Greenwash Fossil Fuels with Credits from Out-of-State Biogas that Never Enters California.

CARB should immediately require any hydrogen producer that claims to use biomethane to meet the same common-sense requirements that a power plant must meet in California's RPS program to show that they are using that biomethane. As discussed in detail in Section 3, entities should only be allowed to claim they are using biomethane if they procure it, contract for its delivery, and the biomethane is injected into a pipeline that flows to California. Although Staff proposes a deliverability requirement for biomethane used at CNG stations in 2041, the ISOR proposes the same unjustified greenwashing scheme to continue for methane used in hydrogen production until 2046.⁸⁶

We explain above that the LCFS is an outlier among state and federal clean energy policies for allowing industry to use unbundled environmental attributes to characterize fossil methane as biomethane. Consistent with these existing policies, the EPA has recommended that the Treasury Department can reasonably apply a deliverability requirement for renewable gas as it implements federal tax credits for clean hydrogen production.⁸⁷ The EPA did not recommend any delay in applying a deliverability requirement for renewable gas used for hydrogen production, citing such rules that are already in place in its Renewable Fuel Standard program as an example of a reasonable approach.⁸⁸

c. The LCFS Should Not Falsely Assume that Livestock Biomethane Is a Carbon-Negative Resource When It Is Used as a Hydrogen Feedstock.

The assumption that livestock biomethane is a carbon-negative resource distorts the incentives in the LCFS by providing more credits for entities that use polluting biomethane fuels than zero-emissions fuels that are consistent with achieving health-based air quality standards. The ISOR recommends allowing entities that use biomethane to produce hydrogen to claim credit for avoided methane emissions through 2045—five years longer than this unwarranted opportunity would be available for biomethane used for CNG fueling.⁸⁹ CARB should end avoided methane crediting for all biomethane in upon the adoption of the 2024 amendments. It is no less urgent to end the LCFS's perverse incentive to invest in polluting grey hydrogen facilities

⁸⁶ ISOR at 31.

⁸⁷ Letter of U.S. EPA Deputy Administrator Janet McCabe to U.S. Treasury Department Assistant Secretary for Tax Policy Lily Batchelder (Dec. 20, 2023) at 5-6, <https://home.treasury.gov/system/files/136/45V-NPRM-EPA-letter.pdf>.

⁸⁸ *Id.*

⁸⁹ ISOR at 31.

instead of zero-emissions hydrogen production than it is to end the perverse incentive to invest in CNG technologies over zero-emissions vehicles.

d. The LCFS Should Match Proposed Federal Standards to Ensure California’s Carbon Accounting for Electrolytic Hydrogen Is No Less Rigorous than the Federal Government’s.

Incredibly, the Staff Proposal is far more permissive than proposed federal rules in allowing industry to characterize emissions-intensive hydrogen as being produced with low- CI electricity. Rather than adopting a weaker system that lacks scientific support, California should take advantage of work being done at the federal level on measuring the carbon intensity of hydrogen production. It is important to get the carbon accounting right for electrolytic hydrogen because hydrogen produced with California’s grid-average electricity creates even more climate pollution than hydrogen produced from fossil gas.⁹⁰

As explained above, draft guidance from the U.S. Treasury Department includes science-backed standards for when hydrogen producers can claim to use zero- or low-carbon electricity, including the requirement to match a facility’s supply of clean energy with its energy demand on an hourly basis (after a phase-in period).⁹¹ In contrast, the ISOR’s proposed new option for indirect accounting for low CI electricity would allow matching of low CI energy generation with a facility’s energy demand on a quarterly basis.⁹² This is a crucial difference that threatens to make carbon accounting for electrolytic hydrogen in the LCFS far less accurate than federal practice. According to research from Princeton University, an hourly matching requirement is necessary to avoid spiking pollution on the power grid from electrolytic hydrogen production.⁹³ Even a weekly matching standard would lead to emissions increases that are just as dramatic as relying on grid-average electricity.⁹⁴ To avoid adopting weaker carbon accounting standards than the federal government, CARB should require electrolytic hydrogen producers who claim to use low CI electricity to meet an hourly matching requirement by 2028, in alignment with standards under development at the U.S. Treasury Department.

⁹⁰ 17 CCR § 95488.5(e), Table 7-1 (providing a default CI value for hydrogen from grid average electricity of 164.46 gCO₂e/MJ and a default value of hydrogen from steam methane reformation of fossil gas of 117.67 gCO₂e/MJ).

⁹¹ Section 45V Credit for Production of Clean Hydrogen, 88 Fed. Reg. 89233 (Dec. 26, 2023).

⁹² ISOR at 34.

⁹³ Wilson Ricks et al., *Minimizing emissions from grid-based hydrogen production in the United States*, Env’t Rsch. Letters (Jan. 06, 2023), at 7–8, <https://iopscience.iop.org/article/10.1088/1748-9326/acacb5/pdf>.

⁹⁴ *Id.*

5. Enhance Credit Generation Potential for Zero-Emissions Transit and Charging Infrastructure.

Zero-Emission Transit and Charging Infrastructure

Summary of Problem: The LCFS rewards combustion fuels in place long before the LCFS (e.g., ethanol and biomethane) yet fails to fully credit an essential climate, VMT-reduction, and equity-based resource: transit. It also unnecessarily restricts credit generation potential for medium- and heavy-duty charging infrastructure, frustrating achievement of California's ZEV goals

Earthjustice Recommendation: (1) Adopt a credit multiplier for zero-emissions transit vehicles that reflects their impact on vehicle-miles traveled (VMT); (2) end the unique penalty on transit agencies that installed fixed guideway systems (e.g., light rail) prior to 2011; and (3) enhance credit-generation potential for medium- and heavy-duty charging infrastructure.

Why Staff Proposal Is Inadequate: Staff has not considered these transit proposals in the ISOR and would continue the flawed status quo. Staff has added capacity credit opportunities for medium- and heavy-duty infrastructure, but limitations on their use unnecessarily restrict the full potential of the credits.

In its reason for rejecting the EJ scenario (covering the reforms laid out above) CARB Staff argue that restricting credits from combustion fuels will lead to deficits in excess of available credits (the opposite of the problem the LCFS currently faces) causing high program costs and less stated climate benefits. Staff write that “[t]he large net cost of this scenario is associated with higher credit prices and the demand for 76 billion banked credits by 2030 and 288 million banked credits between 2024 and 2046, which far exceeds the available quantity even under the credit clearance market.” If this is in fact the limiting reason that CARB is unwilling to restrict bogus credit generation, the solution is to enhance credit generation potential from low-risk, State-aligned ZEV pathways that deliver real benefits for climate, air quality, and environmental justice. This can largely be done by appropriately valuing the true transportation benefits of zero-emissions transit vehicles, the efficiency advantages of light rail transit systems, and reduce unnecessary barriers to credit-generation for medium- and heavy-duty charging infrastructure.

a. Stop Unfairly Treating Zero-Emissions Transit Relative to Other Fuels and Reflect Its True Emissions Benefits.

The LCFS fully (and overly) credits biomethane projects that were in place prior to the start of the LCFS and do not contribute to California’s climate goals. However, transit, a real climate, air quality, equity, and VMT-reducing strategy, is uniquely penalized by not being credited for “early action.” This is the wrong signal to send, undervalues the climate benefits of California’s zero-emissions transit vehicles, which impairs the program’s ability to decarbonize the transportation sector and deprives transit agencies of needed revenue. Specifically, the program fails to recognize the impact of ZE mass transportation vehicles reducing vehicle-miles-

traveled (VMT) and imposes a unique and unjustified penalty on transit agencies that installed fixed guideway systems (e.g., light rail) prior to 2011. The ISOR fails to consider either of these issues.

Fixing these counterproductive and illogical problems must be a priority. The Scoping Plan acknowledges that “VMT reductions will play an indispensable role in . . . achieving the state’s climate, air quality, and equity goals.”⁹⁵ It also acknowledges the difficulty of achieving these urgent reductions, noting that public transit was “significantly impacted during the lockdown months, and has struggled to recover; ridership only averages two-thirds of pre-pandemic levels, and service levels also lag behind.”⁹⁶ The necessary VMT reductions will require California policymakers to make transformative investments in transit, as the state’s current level of car dependence is the result of entrenched practices. These historic decisions have not just entrenched single-occupancy vehicle travel, but also “reinforced long-standing racial and economic injustices that leave people with little choice but to spend significant time and money commuting long distances, placing a disproportionate burden on low-income Californians, who pay the highest proportion of their wages on housing and transportation.”⁹⁷ To meet these goals, transit agencies need reliable sources of revenue that are not dependent on legislative discretion or flush budget years.

Amendments to the LCFS are required to align the program with the specific strategies in CARB’s Policy Framework to Advance Sustainable and Equitable Communities (Appendix E to the Scoping Plan). Under this framework, the very first strategy is to “plan and invest in a sustainable transportation system.”⁹⁸ The framework recognizes that reducing car dependence can ease several burdens that are inequitably borne by California’s low-income communities and communities of color, including diminished access to jobs and services, risks of job loss if a vehicle breaks down, and reduced household wealth generation.⁹⁹ Accordingly, CARB’s own vision demands transportation “funding frameworks that are clearly aligned and prioritize the State’s climate, air quality, and equity goals at all levels of government.”¹⁰⁰ Modernizing the LCFS to provide appropriate support for transit is one essential step to aligning California’s transportation policies with its environmental and equity goals.

i. Adopt a Credit Multiplier for Zero-Emission Mass Transportation Vehicles to Account for the Outsized Impact of Vehicles that Reduce VMT on the Carbon-Intensity of California’s Transportation Fuels.

The LCFS currently ignores the VMT benefits of zero-emissions transit vehicles, even though CARB has recognized that meeting California’s climate goals in the transportation sector will require both a transition to zero-emissions technologies and dramatic reductions to VMT. As

⁹⁵ Scoping Plan at 192.

⁹⁶ *Id.* at 192–93 (footnotes omitted).

⁹⁷ *Id.* at 193.

⁹⁸ CARB, 2022 Scoping Plan, Appendix E, Sustainable and Equitable Communities: Policy Framework to Advance Sustainable and Equitable Communities at 10 (Nov. 2022).

⁹⁹ *Id.* at 6.

¹⁰⁰ *Id.* at 11.

CARB has explained, “despite cleaner vehicles and low-carbon fuels, the path to carbon neutrality by 2045 also depends on reducing per capita VMT.”¹⁰¹ Therefore, CARB has urged transportation policies that prioritize “the movement of people over vehicles.”¹⁰² One such commonsense policy is an LCFS credit multiplier for zero-emissions mass transportation vehicles (i.e., transit vehicles and school buses) that provides an appropriate incentive to reduce the carbon-intensity of California’s transportation fuels by deploying vehicles that reduce VMT.

The LCFS already recognizes that the carbon intensity of a vehicle fuel alone is insufficient for determining appropriate credit generation. The rule incorporates a multiplier for vehicle energy efficiency factors (known as the energy efficiency ratio or “EER”) because “[t]otal emissions are dependent on both the emissions per unit of energy consumed and the fuel economy of the vehicle.”¹⁰³ A multiplier for zero-emissions mass transportation vehicles rests on a similar insight: that *total emissions* depend on more than one factor and the LCFS can account for additional key factors through credit multipliers.

While CARB would need to evaluate the appropriate credit multiplier for zero-emissions mass transportation vehicles, there are multiple reasonable options available. For instance, CARB should consider a 2.75x multiplier because the California Transportation Plan models transit going from 4% mode share to 11% mode share (i.e., increasing transit mode share by 2.75x) in a scenario where VMT reductions align with State climate goals.¹⁰⁴ Alternatively, it would be reasonable to adopt a 2x multiplier because the Scoping Plan includes an objective to double transit capacity and service frequency by 2030.¹⁰⁵ What is not reasonable is assuming that the VMT impacts of these vehicles provide zero reduction to the carbon intensity of California transportation fuels.

ii. Allow Full Credit Generation for All Fixed Guideway Systems to Help Cash-Strapped Agencies Avoid Service Cuts that Could Harm Low-Income Californians and Increase Transportation Emissions.

Allowing full credit generation for all fixed guideway systems is a straightforward update to the LCFS regulation to better align the program with California’s zero-emissions, air quality, VMT, and equity goals. The LCFS regulation currently disfavors transit agencies because fixed guideway systems that were built before 2011 generate an artificially low number of credits, which does not reflect their energy economy ratio.¹⁰⁶ This policy has significant consequences for transit agencies with long-established fixed guideway systems. If older fixed guideway transit

¹⁰¹ *Id.* at 4.

¹⁰² *Id.* at 10.

¹⁰³ CARB, Proposed Regulation to Implement the Low Carbon Fuel Standard, Vol. 1, ISOR (Mar. 5, 2009) at ES-18.

¹⁰⁴ Caltrans, California Transportation Plan 2050 (Feb. 2021) at 97, Figure 38, <https://dot.ca.gov/-/media/dot-media/programs/transportation-planning/documents/ctp-2050-v3-a11y.pdf>.

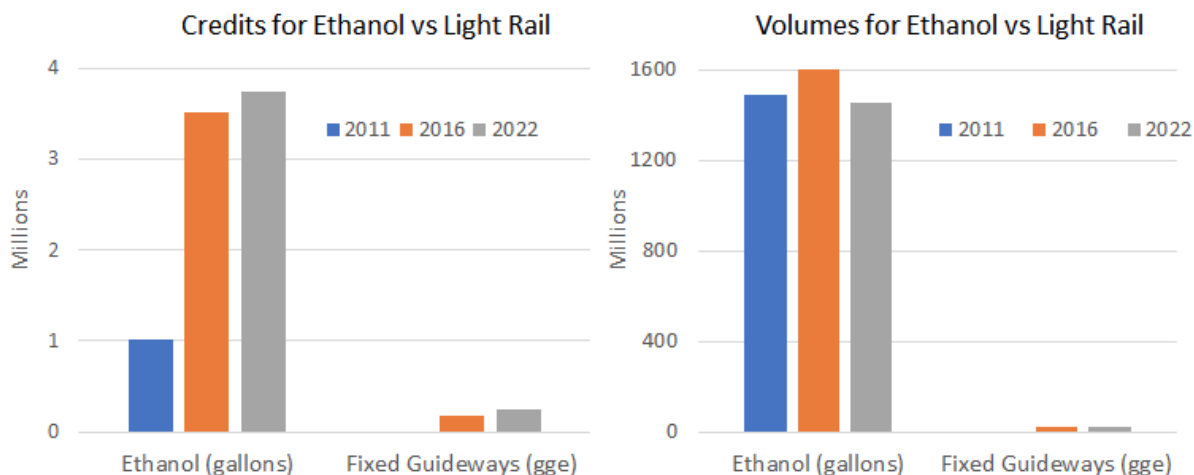
¹⁰⁵ CARB, 2022 Scoping Plan, Appendix E, Sustainable and Equitable Communities: Policy Framework to Advance Sustainable and Equitable Communities at 12.

¹⁰⁶ 17 CCR § 95486.1(a)(4).

system were treated the same as newer systems, they would generate 3.1 to 4.6 times as many LCFS credits, depending on the type of vehicles that use the system.¹⁰⁷

The penalty on older fixed guideway transit systems is not only significant, but discriminatory. The LCFS does not handicap credit generation by other alternative fuels that were already established in the California market at the inception of the LCFS program. Notably, the LCFS does not reduce its subsidy for ethanol volumes that do not go beyond California’s 2011 ethanol supply. If CARB had taken comparable steps to limit credit generation opportunities for ethanol to account for its widespread historic use, it would impact almost all ethanol credit generation, as ethanol blending has been mandatory for most of the state’s gasoline sales since 2003.¹⁰⁸ The LCFS fully credits ethanol that was being delivered to California prior to the start of the LCFS and only begun to include fixed guideway systems in 2016, and penalizes systems installed prior to 2011 (see comparison of credits earned by ethanol compared to fixed guideway in Figure 4). Despite ethanol having required blending requirements, LCFS awarded full credit to ethanol pathways at the start of the program. However, no zero-emission fixed-guideway credits were awarded in 2011-2015 and then penalizes systems that had electrified prior to 2011, despite no requirements for electrification. Staff has provided no rationale for handicapping California’s legacy transit agencies, particularly when legacy biofuels do not face similar treatment.

Figure 4: Comparison of Participation in the LCFS by Ethanol and Fixed Guideway Systems (e.g., Light Rail), as Measured by Credit Generation and Fuel Volumes



Data source: CARB’s LCFS Quarterly Data Summary. “Gge” represents gallons of gasoline equivalent.

¹⁰⁷ *Id.* at Table 5 (Heavy Rail has an EER of 4.6; Light Rail has an EER of 3.3; and Trolley Buses, Cable Cars, and Street Cars have an EER of 3.1).

¹⁰⁸ CEC, Cleaner Burning Gasoline without MTBE (Jan. 1, 2003) (explaining that “all gasoline sold in Southern California, the greater Sacramento area, and the San Joaquin Valley (about 80 percent of gasoline in California) would have to contain ethanol once MTBE is eliminated” in 2003), <https://ww2.arb.ca.gov/resources/fact-sheets/cleaner-burning-gasoline-without-mtbe>.

The LCFS' disfavored treatment of transit systems installed priority to 2011 looks even worse in comparison to the bonus given to biomethane infrastructure installed before the LCFS took effect. CARB rewards entities that installed digesters prior to 2011, when the LCFS began and therefore may be correlated to project development. The LCFS does not appear to have any restrictions for crediting digester projects even while the protocol that the methodology was modeled after (the Cap-and-Trade protocol for Livestock Offset Projects) has some bounds.¹⁰⁹ Factory farms routinely benefit from this rule even when their digesters were installed for economic reasons completely unrelated to the LCFS, as illustrated by the examples in Table 4 below. It is indefensible for CARB to penalize transit agencies for their leadership in installing the first zero-emissions infrastructure, while giving preferential treatment to companies for taking early action to bring combustion fuels to market.

¹⁰⁹ The LCFS takes many aspects of the protocol for Livestock Offset Projects; however, as laid out in https://ww2.arb.ca.gov/sites/default/files/2020-09/2020_dairy-swine-manure_crediting_faq.pdf, there is no strict project commencement date that would exclude LCFS credit generation. The protocol requires that projects must have commenced no earlier than 2007 to qualify for cap-and-trade offsets, per 95973(a)(2)(B) of the Cap-and Trade Regulation, https://ww2.arb.ca.gov/sites/default/files/2021-02/ct_reg_unofficial.pdf.

Table 4: Examples of Out-of-State Dairies Receiving LCFS Credits for Digesters Installed Before 2011 and Using Book-and-Claim Accounting

| Applicant | Project Type | Project Location | Application Posted Date | Original Digester Construction Date | Original End Use | CI |
|---------------------|--|---------------------------------------|-------------------------|-------------------------------------|----------------------------------|---------|
| U.S. Venture | Bio-CNG from Dairy CAFO (book-and-claim) | Yellow Jacket Boxler, Varysburg, NY | 12/2/22 | 2009 | Onsite combustion ¹¹⁰ | -206.88 |
| Blue Source LLC | Bio-CNG from Dairy Biomethane (book and claim) | Green Valley Dairy, Krakow, Wisconsin | 11/22/22 | 2005 | Onsite Combustion ¹¹¹ | -180.73 |
| Element Markets LLC | Bio-CNG from Swine Biomethane (book and claim) | Dalhart Farm, Dalhart, Texas | 9/2/22 | 1997-2001 | Onsite Combustion ¹¹² | -417.96 |

Allowing full credit for legacy fixed guideway systems is a straightforward correction that would yield significant revenue for transit systems and help avoid credit shortfalls the LCFS might otherwise see from restricting credit generation for polluting fuels. The International Council on Clean Transportation estimated that this fix alone would yield about 20 million tonnes of LCFS credits from 2024–2045, providing meaningful support for investments in public transit.¹¹³ For context, this is about 40% of the credit generation foregone by capping credits for virgin vegetable oils in the ISOR’s Alternative 1.¹¹⁴ Combining a cap on lipid biofuels with fair

¹¹⁰ U.S. EPA, AgStar-Livestock Anaerobic Digester Database, <https://www.epa.gov/agstar/livestock-anaerobic-digester-database>.

¹¹¹ As the LCFS application acknowledges, Green Valley Dairy began operation of its first digester in 2005, and its second in 2008. Project details confirm these digesters were designed to support electric power generation. Northern Biogas, Green Valley Dairy Expansion, <https://northernbiogas.com/projects/green-valley-dairy-expansion/>.

¹¹² The LCFS application states that the farms “began operations in 1997, 1998, and two in 2001 with anaerobic lagoons installed the same time.” According to AgStar, the original use of these was for boiler and furnace fuel.

¹¹³ In the default scenario of CARB’s 2023 CATS modeling, which is very similar to the proposal in the ISOR, electric fixed guideway systems generated about 6.2 million tonnes of credits from 2024–2025. If 90% of these credits became eligible for an EER of 4.6, total credits for fixed guideway systems would rise to about 26 million tonnes.

¹¹⁴ In the default scenario of CARB’s 2023 CATS modeling, which is very similar to the proposal in the ISOR, virgin vegetable oils generate about 47 million tons of credits before they become deficit generators in the mid-2030s.

treatment of public transit would be an important step toward aligning the LCFS with CARB's equity policies.

California's transit agencies are facing critical budget shortfalls and may be forced to severely reduce service without additional revenue. Support for transit in the State budget will help transit agencies cope with short-term impacts of losing access to federal COVID relief funds, but "falls far short of the amount needed to resolve the \$2.5 billion deficit that transit operators anticipate over the coming five years."¹¹⁵ In this fiscal environment, LCFS revenue is a potential lifeline that could help cash-strapped agencies avoid service cuts. These reductions in service could be detrimental to the purpose of the LCFS. Transit riders, who are disproportionately lower income—are likely to shift to driving gas-fueled personal vehicles—increasing not just the carbon intensity of California's transportation fuels, but also health-harming pollution.

b. Enhance Credit-Generating Potential for Zero-Emissions Charging Infrastructure.

The Scoping Plan, the Mobile Source Strategy, and the State Implementation Plan all make clear the urgent need to rapidly transition to zero-emissions in our transportation sector, and electrifying transportation is a lynchpin for achieving this goal. Specifically, diesel trucks' outsized harm on health and the climate, and the widespread availability and cost-effectiveness of truck electrification for most vehicles in this segment makes this a critical lever for climate action. CARB's landmark regulations (Advanced Clean Trucks and Advanced Clean Fleets) help advance the transition by stimulating both production and purchase of these vehicles, especially in the segments that they are most operationally suitable. As CARB's Total Cost of Ownership studies show, by 2035, there is not a single truck class where electric trucks do not have a more favorable TCO than combustion.

However, electrifying transportation at the scale and pace necessary to meet looming air quality attainment deadlines and deliver enormous health and climate benefits critically depends on a comprehensive charging network. This includes everything from depot charging needed to support drayage, transit, and school bus electrification, to public fast charging for light duty, to medium- and heavy-duty fast charging along key freight corridors. CARB can make several, simple changes to enhance credit generation potential for medium- and heavy-duty infrastructure and ensure the LCFS acts to unlock a faster transition. In many cases, this only requires treating electrification and hydrogen with parity, rather than penalizing electric pathways simply because they are relatively lower-cost and better established. Specifically, we urge CARB to make the following critical changes:

¹¹⁵ Transit Center, Unpacking California's Transit Budget: A Huge Victory, But an Unfinished Fight (Aug. 1, 2023), <https://transitcenter.org/unpacking-californias-transit-budget-a-huge-victory-but-an-unfinished-fight/>. Governor Newsom's proposed 2024 budget would maintain transit funding levels, but delay \$1 billion in funding by one year. Dan Zukowski, ESGDive, Climate funding takes hit in California governor's 2024 budget (Jan. 12, 2024), <https://www.esgdive.com/news/california-governor-gavin-newsom-2024-budget-proposal-climate-transit/704436/>.

- **Create parity in capacity credits for MHD-HRI and MHD-FCI** by allowing MHD-FCI capacity crediting of up to 50% for shared sites and 25% for private (instead of its current limits at 25% and 10% for shared and private MHD-FCI sites respectively). Meeting California’s ZEV goals will require a massive deployment of shared charging infrastructure for electric freight vehicles. To date, the slow deployment of these sites has been a primary challenge for transitioning the hardest-to-electrify fleets to ZEVs. CARB should not exacerbate this problem with a discriminatory and unreasonable limit on shared MHD-FCI incentives in the LCFS.
- **Eliminate the geographic restrictions**, which will add administrative burden and unnecessarily exclude sites with high potential to electrify earlier than longer haul routes that would be operating along these corridors. Local and regional fleets will not necessarily charge near these corridors but are highly suitable to early electrification, and the LCFS should help enable operators to overcome one of the few remaining barriers to getting their fleets off diesel. Orienting the capacity credits only toward longer-hauls and limiting to freight corridors missed the opportunity to accelerate near-term action. It is also unclear why this provision is necessary, since Earthjustice has not seen information that suggests an overbuilding of medium-and heavy-duty charging stations. Charging providers already have a fundamental incentive to cite stations as conveniently as possible for fleets that are interested in electrifying.
- **Increase capacity credits to 5% of prior quarter deficits**. Currently, the language appears to suggest that both kinds of stations will cumulatively share the 2.5% of prior quarter deficits. This should be increased to 5% each to enable larger capacity charging deployments.

CONCLUSION

We look forward to continuing to engage in the Low Carbon Fuel Standard rulemaking process and working with Staff to ensure the program avoids perverse outcomes and provides appropriate support to the technologies that will enable achievement of California’s climate, air quality, and equity goals. Appendix A includes a presentation of Earthjustice’s proposed LCFS reforms with additional graphics and analysis.

Sincerely,

Sasan Saadat
Sara Gersen
Adrian Martinez
Nina Robertson
Earthjustice
50 California St., Suite 400
San Francisco, CA 94111

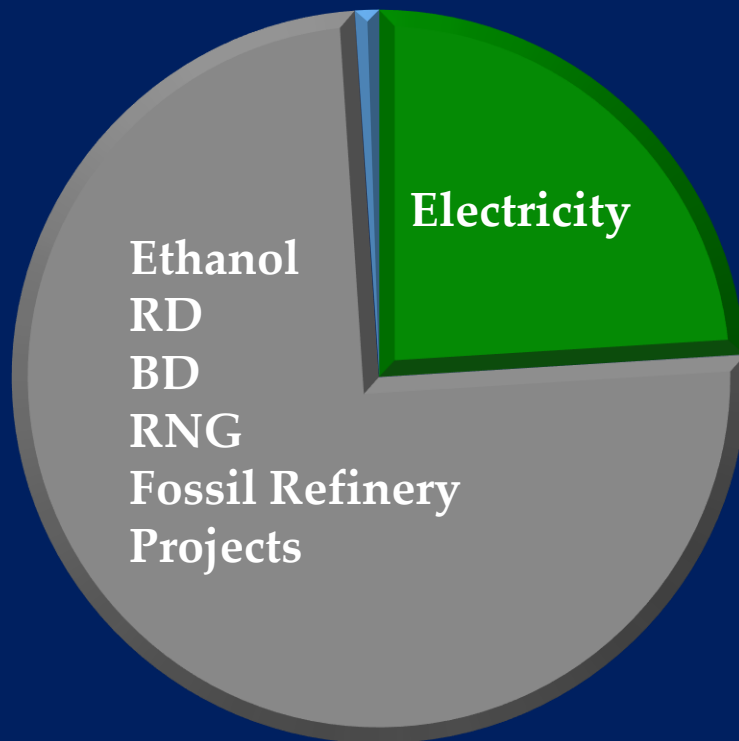
Appendix A:
Earthjustice Presentation on LCFS Reforms

Fueling Change: LCFS Reforms for Climate, Air Quality, and Equity

Changes needed to align the
Low Carbon Fuel Standard with
CARB's ZEV, air quality, and equity goals

Why Does Most of the \$3-4 Billion in Annual LCFS Revenues Fund Combustion Fuels?

Credits in 2022



- Nearly 80% of LCFS credits in 2022 went to non-ZEV fuels.
- California must transition away from combustion fuels to meet its Clean Air Act obligations.
- CARB's Board has roundly supported the ZEV transition by passing ACC II, ACF, and ACT.

Continuing to subsidize old, combustion-based technologies works AGAINST CARB'S own priorities.

Based on Data from CARB's LCFS Data Summary for 2022

The LCFS Must Support the ZEV Transition

Under Staff's proposed changes, the LCFS will continue to subsidize polluting technologies at the expense of ZEV support.

Stop Subsidizing the Bad

Restrict over-generation of subsidies for polluting fuels

Stop avoided methane credits for new pathways.

Align deliverability requirements for all fuels.

Cap lipid biofuels.

Prohibit crediting for Enhanced Oil Recovery activities, consistent with SB 1314.

Enhance Support for the Good

Increase LCFS support for ZE pathways with the greatest EJ benefit

Allow full credit generation for fixed guideway (e.g. light rail) transit.

Support VMT reductions with a transit and school bus credit multiplier.

Unlock billions for transportation electrification without adding costs to consumers.

End Avoided Methane Crediting in LCFS

Staff's proposal to extend avoided methane crediting for decades:
Thwarts attainment of State air quality goals;
Undermines transportation electrification;
Hampers green hydrogen production; and
Harms communities.

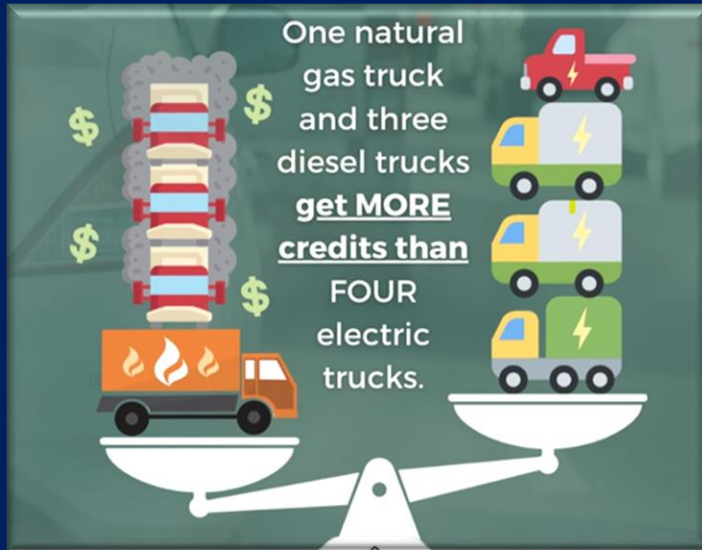
The Assumption that Methane Would Otherwise Be Vented is Flawed

- “It is unrealistic to assume that capturable methane would be vented under a GHG conscious policy regime.”
 - E. Grubert, *Env. Res. Letters* (Aug. 2020).
- Oil & gas, landfills, and wastewater treatment plants are already required to capture methane. Why aren't dairies?

Avoided Methane Crediting Causes Distortions that Run Counter to State Climate and Air Quality Goals

1. Larger subsidies for methane-burning trucks than zero-emission trucks that the State has mandated.
2. Larger subsidies for greenwashed gray hydrogen than zero-emission hydrogen pathways crucial for air and climate goals.
3. Biomethane diverted to on-road transportation from hard-to-decarbonize sectors.
4. Favored polluting pathways (at best) entrench and (at worst) exacerbate environmental injustice of livestock management choices.
5. Billions of LCFS dollars flowing out-of-state for dubious emissions benefits.

The LCFS Favors Polluting CNG Trucks Over ZEV Trucks



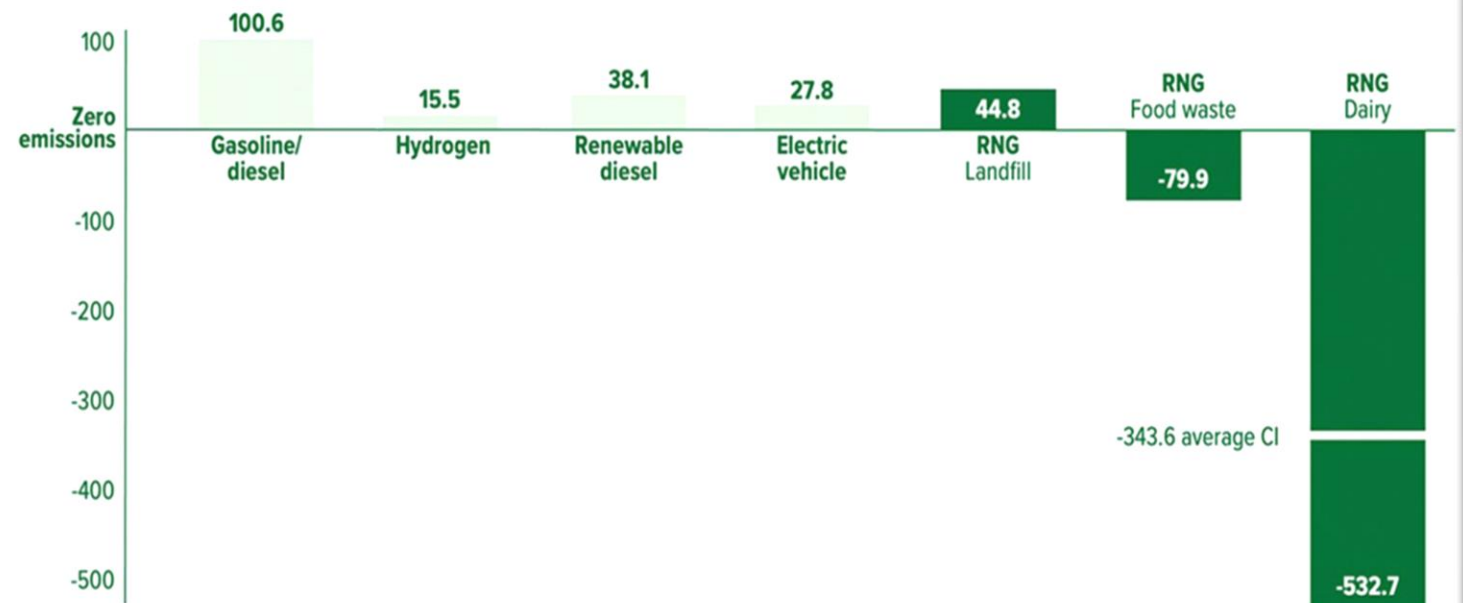
“Replacing just 25% of a fleet’s diesel trucks with negative carbon intensive RNG from dairy manure can reduce a fleet’s carbon emissions by 100%.”

- Greg Roche, VP at Clean Energy Fuels, Op-Ed, (Aug. 2022)

RNG is the lowest carbon alternative fuel



Carbon emission by fuel type (gCO₂e per MJ)



Source: California Air Resources Board, Q4 2021 LCFS data, and certified pathways as of April 19, 2022.

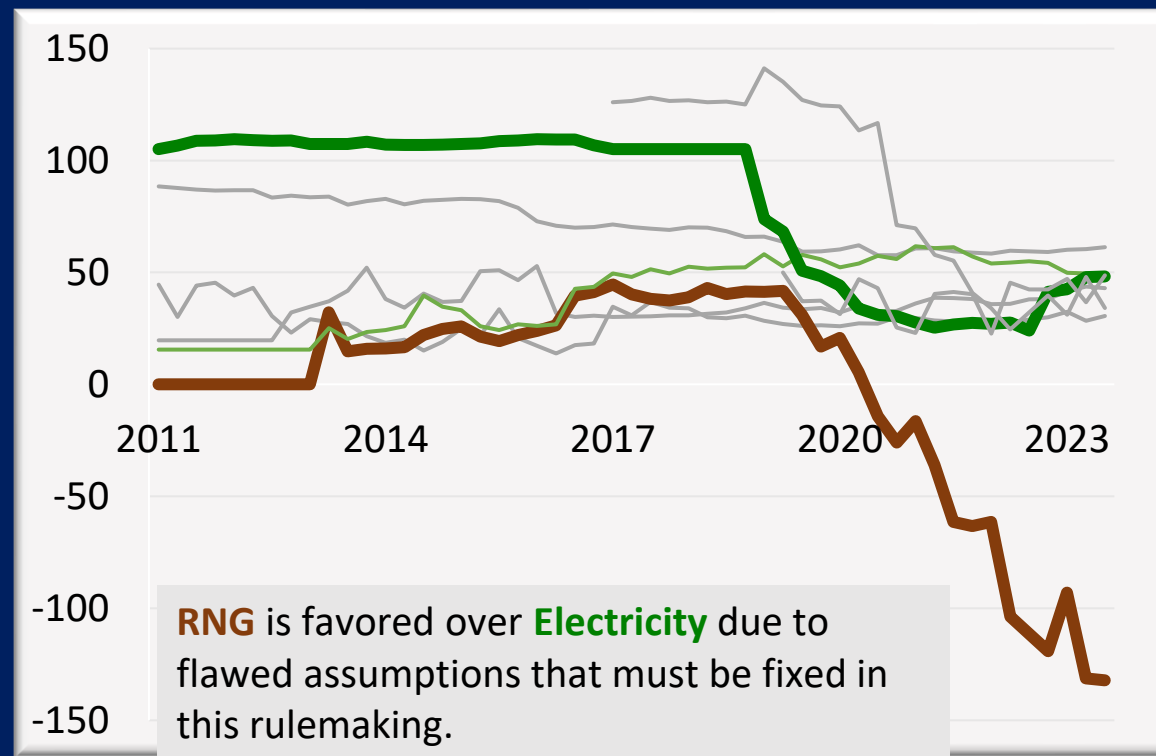


EARTHJUSTICE

The LCFS Favors Polluting CNG Trucks Over ZEV Trucks

Unless fixed, the LCFS will continue to distort market signals for ZEVs.

Average Carbon Intensity of Fuels in the LCFS



Based on Data from CARB's LCFS Data Summary through Q3 2023

The LCFS Favors Dirty Hydrogen over Green Hydrogen

Electrolysis in Alameda County, CA, Powered by Local Solar PV

vs.

SMR of Fossil Gas in Wilmington, CA, Paired with Credits from Dairy in Indiana

- Carbon Intensity = 0
- LCFS Credit Calculator: \$1.40/kg of H₂
- Certified in 2016

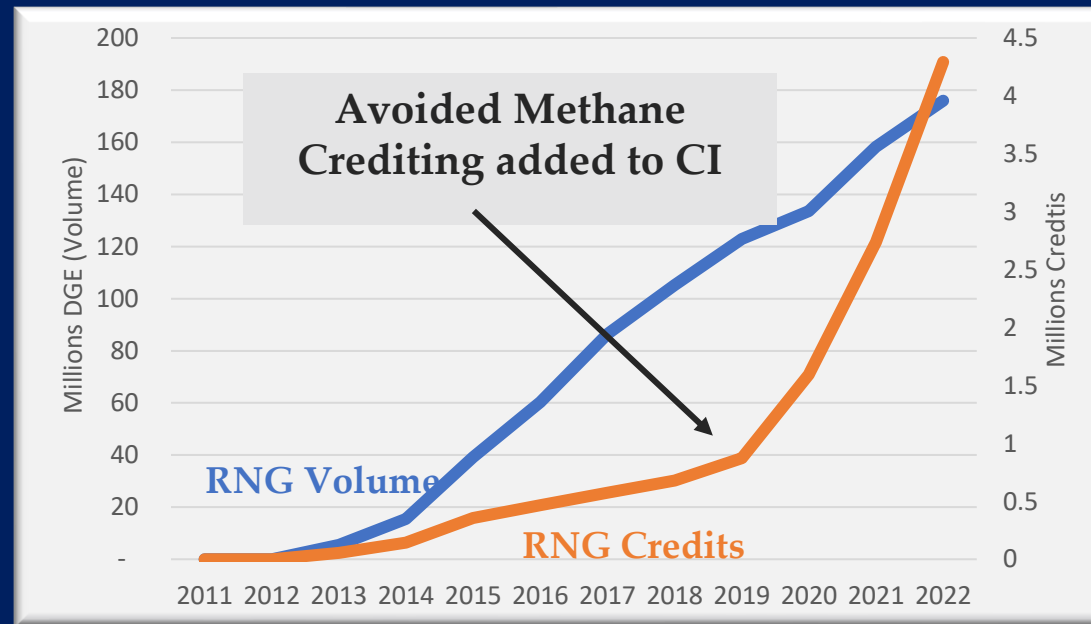
- Carbon Intensity = -287
- LCFS Credit Calculator: \$3.81/kg of H₂
- Certified in 2020



The use of avoided methane credits to greenwash dirty hydrogen harms communities and contradicts the 2022 Scoping Plan, which identifies the need for more electrolytic hydrogen.

The LCFS Diverts Biomethane to the Wrong Sector

Data shows that nearly \$200 million in LCFS subsidies go to methane, much of that due to avoided methane crediting.



Based on CARB's LCFS Quarterly Data Summary through 2022

Why continue to over-subsidize fuels that do not advance CARB's ZEV goals?

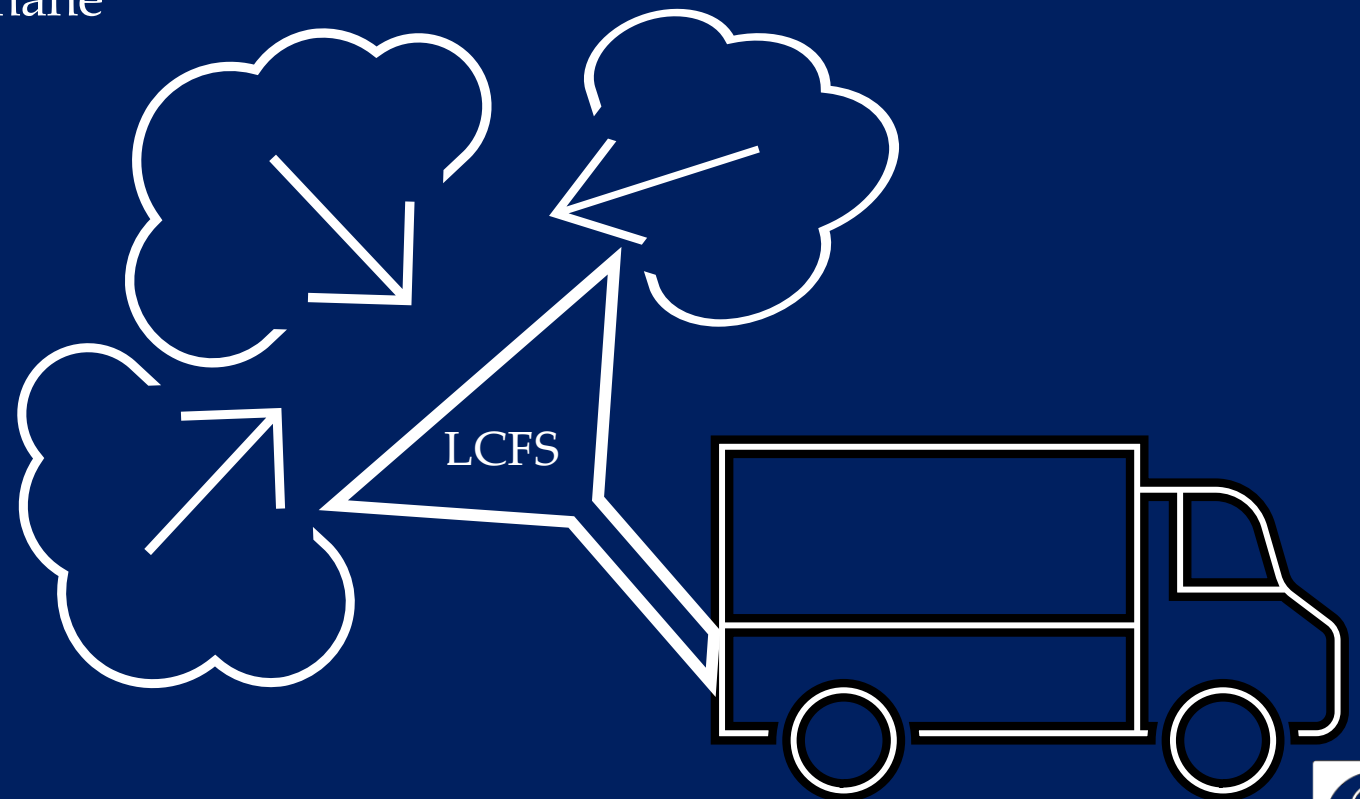
LCFS Diverts Biomethane to the Wrong Sector

Without changes to the LCFS, methane will continue to be most valued in transportation when the evidence shows (1) a rapid phaseout of combustion fuels is necessary to meet State air quality and climate goals and (2) biomethane should be directed to other sectors.

“[B]iomethane will be largely needed in hard-to-decarbonize sectors”¹



“[T]he LCFS credits can be three times higher than the cost to produce the fuel. RNG incentives or credits can be increased if the LCFS credits are stacked with other incentives like those from the federal RFS program.”²



1. 2022 Scoping Plan, page 190.
2. CEC-200-2023-010 (Aug. 2023) (abbreviations added), <https://www.energy.ca.gov/sites/default/files/2023-08/CEC-200-2023-010.pdf>

Is There Even a Climate Benefit?

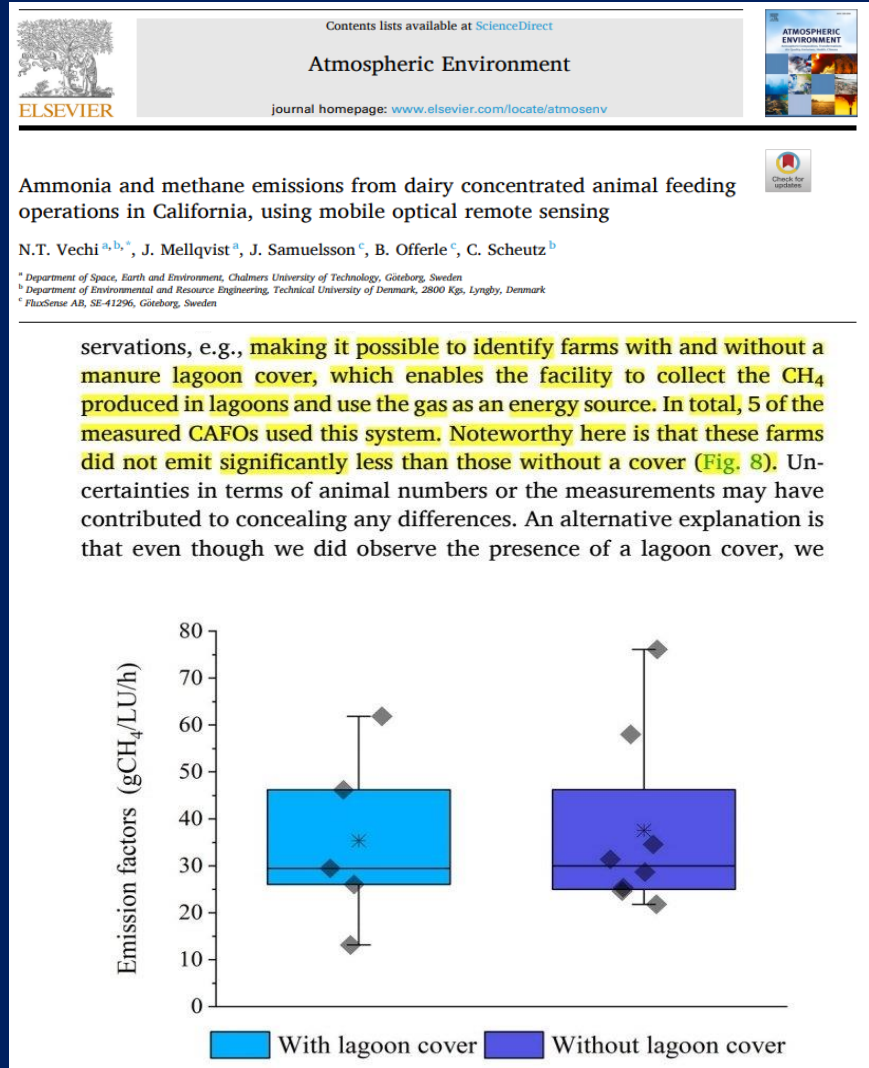
LCFS funds farms with digesters installed before LCFS avoided methane crediting took off in 2019.

Why is California paying for emissions that have already been captured?

Appendix A: Sample of Projects Applications with Avoided Methane where Actual Baseline Was Methane Capture for Onsite Combustion

| Applicant | Project Type | Project Location | Application Posted Date | Original Digester Construction Date | Original End Use | CI |
|---------------------|---|---|-------------------------|-------------------------------------|---------------------------------|---------|
| U.S. Venture | Bio-CNG from Dairy CAFO (B&C) | Yellow Jacket Boxler, Varysburg, NY | 12/2/2022 | 2009 | Onsite combustion ⁶⁵ | -206.88 |
| FirstElement Fuel | Hydrogen from SMR of Dairy Biomethane (B&C) | Dallman East River Dairy, Brillion, Wisconsin | 11/28/2022 | 2012 | Onsite combustion ⁶⁶ | -308.67 |
| FirstElement Fuel | Hydrogen from SMR of Dairy Biomethane (B&C) | Jerseyland Dairy, Sturgeon Bay, Wisconsin | 11/28/22 | 2012 | Onsite Combustion ⁶⁷ | -272.08 |
| Blue Source LLC | Bio-CNG from Dairy Biomethane (B&C) | Green Valley Dairy, Krakow, Wisconsin | 11/22/22 | 2005 | Onsite Combustion ⁶⁸ | -180.73 |
| Element Markets LLC | Bio-CNG from Swine Biomethane (B&C) | Dalhart Farm, Dalhart, Texas | 9/2/22 | 1997-2001 | Onsite Combustion ⁶⁹ | -417.96 |

Are Methane Capture Subsidies Even Effective at the One Thing They Purport to Do?



Despite 10 years of overlapping digester subsidies, livestock manure emissions have remained mostly flat.

- Inventory assumes digester = zero methane.
- Measured methane emission factors were 60% higher than CARB inventory.
- Real-world measurements show CAFOs with lagoon covers have virtually the same level of methane emissions as those without.
- Even CARB's own data shows "mega-emitting" farms with digesters.¹

1. Available at Carbon Mapper Data, <https://carbonmapper.org/>.

Are Methane Capture Subsidies Even Effective at the One Thing They Purport to Do?

“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... 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.”

-NY Dairy Farmer

Is the LCFS creating a perverse incentive to create more methane?

Some farmers report generating more methane than they would have otherwise created, so that they can sell it into the LCFS.

End Biomethane's Book-and-Claim Exceptionalism

Biomethane is the only fuel in the LCFS that can generate credits without being delivered to California.

This “book-and-claim” accounting enables the greenwashing of fossil fuels through purchase the unbundled attributes of out-of- state biomethane that never even flows toward California.

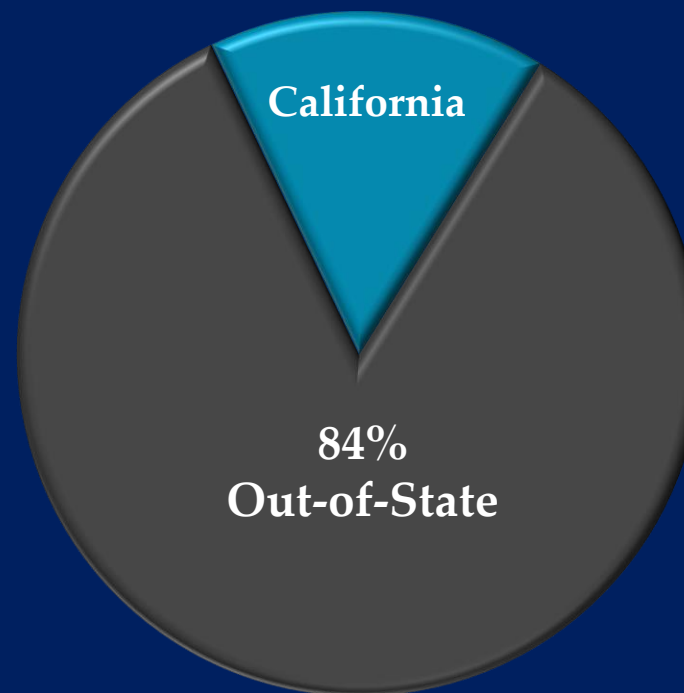
CARB must require biomethane deliverability **now**, as it does for all other fuels, and not postpone it for decades, as Staff proposes.

| LCFS fuel | Is delivery to California required? |
|--------------------|---|
| Renewable diesel | Yes |
| Biodiesel | Yes |
| Ethanol | Yes |
| Aviation fuel | Yes |
| Electricity | Yes |
| Fossil natural gas | Yes |
| Biomethane | No. Staff proposes a weak deliverability requirement to apply to biomethane dispensed at CNG stations in 2041 and for biomethane used in hydrogen production in 2046. |

Why Is California Paying for Dubious Emissions Benefits Out-of-State?

LCFS dollars are flowing out of California and not supporting the State's economy, ZEV transition, or climate goals.

- Most biomethane is from out-of-state and is not captured in California's GHG inventory.
- Every single certified LCFS pathway that purports to use livestock biomethane to produce hydrogen is from an entity that purchases fossil methane and pairs it with unbundled biogas credits from farms in NY, WI, MN, IN, or MO.



Volume share of LCFS biomethane in 2022

Taken from CARB's LCFS Data Dashboard

Current LCFS Methane Policy Rewards Polluters in California's Most Burdened Regions

- Results in profits over public health or furthering transportation electrification.
- Eliminates incentive to reduce methane.
- Adds an income stream to the largest/most profitable dairies, exacerbating consolidation.
- Relies on the same management strategies (confinement, consolidation) that cause human and environmental harm.¹

1. See, e.g., Central Valley Dairy Representative Monitoring Program Report (2019) at 5, <https://leadershipcounsel.org/wp-content/uploads/2019/10/Dairy-report.pdf> (reporting widespread groundwater contamination at dairies).



HOARD'S DAIRYMAN

Energy revenue could be a game changer for dairy farms

Unintended consequences

In addition to lower cost of production, the returns from energy generated by large farms may accelerate the growth of the mega-dairy farms. At the onset, small farms may find it more difficult to participate in these projects.

The New York Times

They Grow the Nation's Food, but They Can't Drink the Water

Avoided Methane: Correcting LCFS Assumptions

Problem:

- Methane's negative CI scores assumes polluters may freely vent methane as a baseline case, causing many market distortions and perverse outcomes.
- Lack of a deliverability requirement for biomethane exacerbates market distortions.

Fix:

- Discontinue credit for avoided methane venting in new pathways.
- The baseline case should **assume mandatory methane control**, e.g. by flaring or alternative manure management, either by authorized regulations or other dedicated investments (similar to landfill gas).
- Require deliverability for biomethane, in alignment with all other fuels.

Cap Lipid Biofuels

Staff's proposal to leave lipid biofuels unrestricted will:

Exacerbate global hunger and deforestation;

Have dubious climate and air quality benefits;

Depress the credit price; and

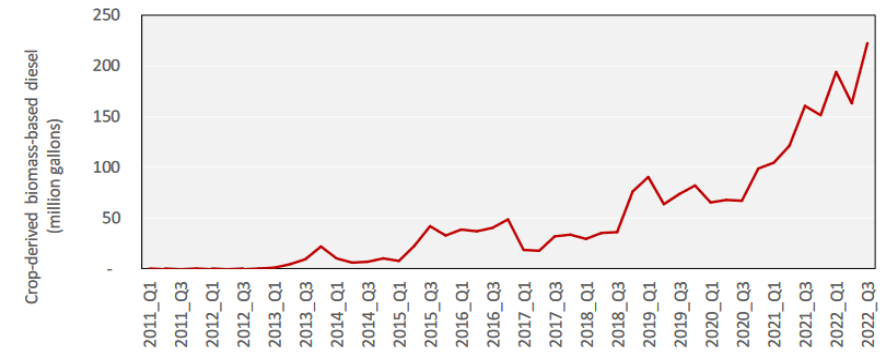
Undermine electrification goals.

CARB's Current Approach to Biofuels Is Insufficient

The LCFS includes a Land Use Change (LUC) “adder” to the CI score, but crop-based feedstock is surging.

- LUC is an inherently dynamic and difficult concept to quantify.
- LUC risks increase substantially with increased consumption.
- Current levels of biofuel consumption wildly exceed levels contemplated by CARB at the time these figures were selected.

Increase in Crop-based Oils Used in California Over Time



38

CARB LCFS February 22, 2023 Workshop Presentation

Crop-Based Biofuels Increase Food Prices and Food Insecurity

OCTOBER 3, 2017

Biofuels policies drive up food prices, say over 100 studies

Europe's biofuels policies do increase global food prices. That's the wide scientific consensus, according to a review of more than 100 economic modelling studies of the impact on food prices from increased demand for biofuels made from food crops. Increased demand for biodiesel has driven the price of vegetable oils in the EU, such as rapeseed, palm oil, soy and sunflower, up 171% per exajoule (EJ) of biodiesel produced, according to the analysis by consultancy Cerulogy for BirdLife Europe and T&E.

See C. Malin (Sept. 2017),
https://www.cerulogy.com/wp-content/uploads/2017/09/Cerulogy_Thought-for-food_September2017.pdf.

THE WALL STREET JOURNAL.

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COMMODITIES


Renewable Diesel Booms Despite Concern Over Effect on Food Prices

U.S. production of the plant- and animal-derived biofuel soars

By Bob Henderson [Follow](#)

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Crop-Based Biofuels Lead to Deforestation

ARTICLES

<https://doi.org/10.1038/s41893-021-00729-z>

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Massive soybean expansion in South America since 2000 and implications for conservation

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A prominent goal of policies mitigating climate change and biodiversity loss is to achieve zero deforestation in the global supply chain of key commodities, such as palm oil and soybean. However, the extent and dynamics of deforestation driven by commodity expansion are largely unknown. Here we mapped annual soybean expansion in South America between 2000 and 2019 by combining satellite observations and sample field data. From 2000 to 2019, the area cultivated with soybean more than doubled from 26.4 Mha to 55.1 Mha. Most soybean expansion occurred on pastures originally converted from natural vegetation for cattle production. The most rapid expansion occurred in the Brazilian Amazon, where soybean area increased more than tenfold, from 0.4 Mha to 4.6 Mha. Across the continent, 9% of forest loss was converted to soybean by 2016. Soybean-driven deforestation was concentrated at the active frontiers, nearly half located in the Brazilian Cerrado. Efforts to limit future deforestation must consider how soybean expansion may drive deforestation indirectly by displacing pasture or other land uses. Holistic approaches that track land use across all commodities coupled with vegetation monitoring are required to maintain critical ecosystem services.



Crop-Based Biofuels May Not Even Be Low-Carbon

Environmental outcomes of the US Renewable Fuel Standard

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[T]he carbon intensity of corn ethanol produced under the RFS is no less than gasoline and likely at least 24% higher.

of individual agricultural fields across the United States. We find that the RFS increased corn prices by 30%, and prices of other crops by 20%, which, in turn, expanded cropland cultivation by 2.8 Mha (8.7%) and total cropland by 2.1 Mha (6.4%) in the years following policy enactment (2008 to 2019). These changes increased annual nationwide fertilizer use by 33%, increased water quality degradants by 3 to 5%, and caused enough domestic land use change emissions such that the carbon intensity of corn ethanol produced under the RFS is no less than gasoline and likely at least 24% higher. These tradeoffs must be weighed alongside the benefits of biofuels as decision-makers consider the future of renewable energy policies and the potential for fuels like corn ethanol to meet climate mitigation goals.

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received January 18, 2021; accepted December 3, 2021 by Editorial Board

of its more advanced fuel requirements have not yet materialized (32–34).

To comply with the policy's GHG reduction goals, the policy requires conventional renewable fuels to generate life cycle savings of at least 20% relative to gasoline. Upon enactment of the policy's regulatory analysis projected that life cycle emissions from corn ethanol production would just clear the 20% threshold (35). In 2022, even when emissions from LUC were included (35). At the time, most LUC emissions were projected to occur internationally. Since the initial RFS policy-making, however, observations of widespread land conversion and resultant GHG emissions within the United States have also emerged (36–39).

Heightened demand for crops for use as biofuel feedstocks and the associated changes to landscapes may also engender broader environmental disservices upon ground and surface waters, soil resources, and other ecosystem components (40). The magnitudes of such effects are highly uncertain, however, they ultimately depend upon unpredictable behaviors throughout the supply chain—from field to refinery—making it difficult to forecast impacts. As such, public policy-making and su

The New York Times

The Climate Solution That's Horrible for the Climate

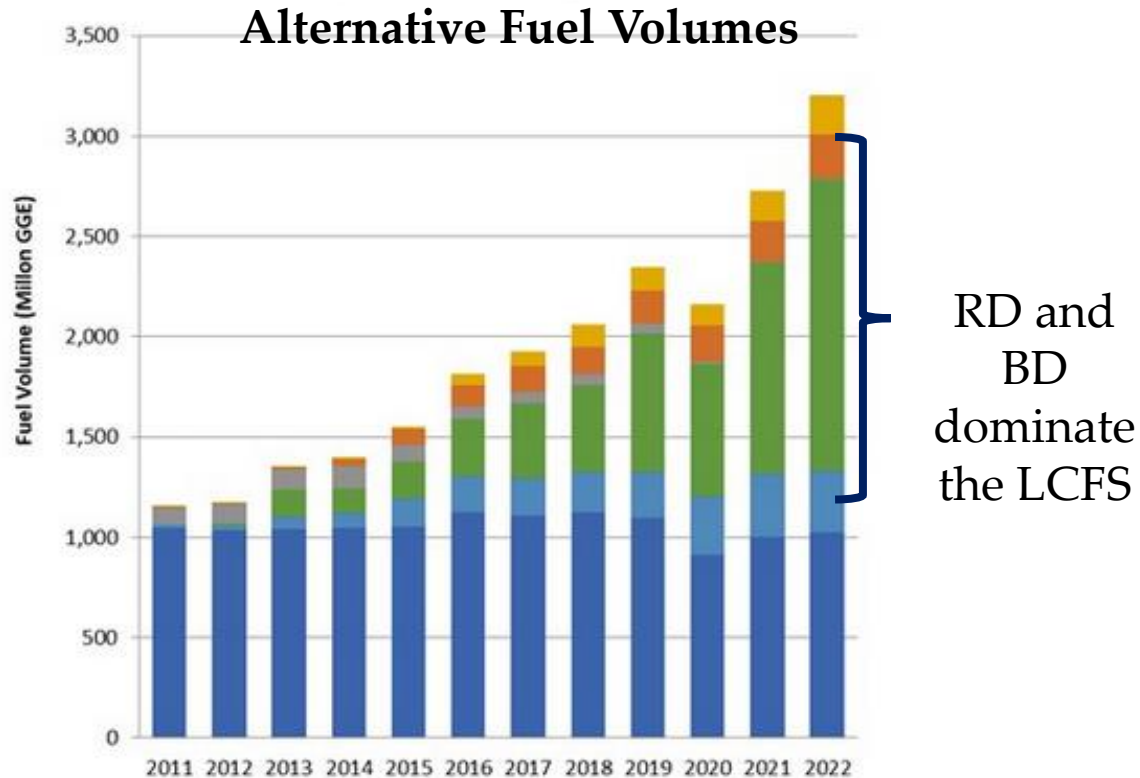
June 6, 2023

“It's fairly well-known that farm-grown fuels like corn ethanol and soy biodiesel accelerate food inflation and global hunger, but they're also a disaster for the climate and the environment...

It takes about 100 acres worth of biofuels to generate as much energy as a single acre of solar panels; worldwide, a land mass larger than California was used to grow under 4 percent of transportation fuel in 2020.”

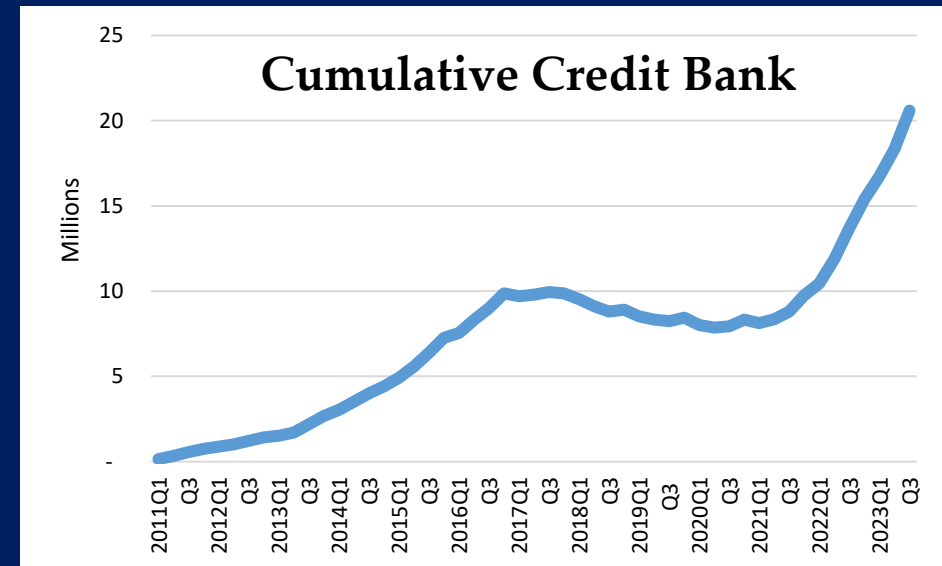
- Michael Grunwald, Op-ed

Significant Growth in Biofuels Undermines ZEV Goals



- Unconstrained biofuel growth has led to a glut of credits and plummeting credit prices.
- Continuing to subsidize all biofuels devalues each credit, including those used to support transportation electrification.

Current policy distorts the market signal for ZEVs.



Staff's Air Quality Modeling Is Questionable

- Staff's approach differs significantly from the 2018 LCFS assessment without justification.
- Staff's modeling ignores relevant science, including CARB's own 2021 study.
- Appropriately accounting benefits to the LCFS would lower the stated GHG and air pollutant benefits from biofuels.

Staff's Air Quality Modeling Is Questionable

| Current Proposal's Analysis | 2018 Analysis | What's the Issue? |
|---|--|---|
| Air quality benefits (PM/NOx) from upstream CA crude production are included. | No upstream benefits were included. | No evidence that LCFS has a significant impact on upstream CA crude. The 2022 Scoping Plan notes crude production has been on the decline since 1986, prior to the LCFS.¹ |
| 100% of RD's GHG, PM, and NOx benefits attributed to the LCFS. | Benefits were apportioned between LCFS and RFS. | LCFS should only account for its portion of benefits. |
| PM/NOx emissions are based on 2011 data. Staff cited a lack of data for new engines. ² | PM/NOx emissions are based on 2011 data, which includes RD PM benefits, and excess NOx from BD offset by RD. | A 2021 CARB shows <u>no statistical reduction in PM for new technology diesel engines (NTDE) using biofuels and that RD does not offset excess NOx from BD.</u>³ |

1. LCFS SRIA. 2023. https://ww2.arb.ca.gov/sites/default/files/2023-09/lcfs_sria_2023_0.pdf. Pages B-9, B-10, B-11.

2. Scoping Plan. 2022. Page 103.

3. Low Emission Diesel Study. 2021. https://ww2.arb.ca.gov/sites/default/files/2021-11/Low_Emission_Diesel_Study_Final_Report.pdf

Staff's Proposed Biofuels Measures Do Not Solve These Problems

- Staff's proposed prohibition of palm oil is unhelpful.
 - Palm oil is already excluded from the program due to its ILUC score.
 - Palm oil is fungible with soybean oil. Increased demand for soybean oil in California → Increased global demand for palm oil and associated deforestation.
- Staff's proposed certification process will not be effective. It requires burdensome auditing that will not prevent increased crop oil consumption or the associated harms from land use change and food price increases.
- These newly proposed changes were not vetted in workshops, requested by environmental stakeholders, or directed by the Board.

A Cap Is the Best Available Solution.

Lipid Biofuels: Limiting Harms

Problem:

The unrestricted growth in lipid-based biofuels in the LCFS exacerbates global food insecurity, threatens critical ecosystems, provides dubious climate and air quality benefits, and depresses the credit price.

Fix:

Cap the use of lipid-based fuels to prevent compliance shuffling with RFS and reduce global hunger and deforestation risks.

Limiting LCFS Subsidies for Harmful Biomethane and Biofuel Pathways Provides Many Critical Benefits

- Reduces the credit glut, stabilizing credit prices.
- Provides more funding to boost equitable, zero-emissions solutions.
- Supports attainment of CARB's ZEV and air quality requirements.
- Reduces harms to communities, ecosystems, and the food insecure.

Provide Critical ZEV Support

Staff's proposal misses many opportunities to boost zero-emissions solutions that need support now including:

Full credit-generation for fixed-guideway (e.g. light rail) transit;

Credit multipliers for ZE transit and school buses; and

Constraining the credit market to unlock billions for M/HD infrastructure and low-income electrification.



Allow Full Credit Generation for Fixed Guideway Transit

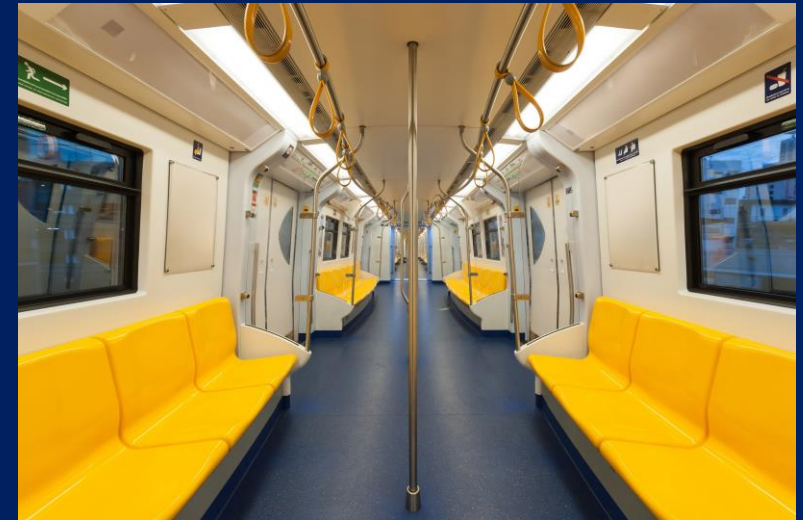
- The LCFS can support California's VMT reduction goals by accurately crediting transit agencies.
- The LCFS imposes a unique penalty on transit agencies by artificially deflating credit generation for fixed guideway systems that were built before 2011.
- Providing full credit generation would generate 3-5x credits for transit.



Why disadvantage a real climate, air quality, and equity solution?

Boosting Transit Crediting Supports Real Solutions and ZEV Goals

- In 2018, the Board directed staff to add infrastructure crediting to address the “chicken-and-egg” problem with ZEVs.
- Transit faces similar problems with lack of funding due to lack of ridership and unreliable services due to funding shortfalls.



CARB should lift community access to transit by directing LCFS funds where they are truly needed.

CARB Must Re-Focus this \$3.5 Billion Program on ZEVs at this Critical Time

- Grim budget cuts make this an urgent time to prudently allocate LCFS credits.
- Allow enhanced funding for key ZEV priorities such as ensuring compliance with CARB's ACF and ACCII rules.
- Restricting harmful biomethane and biofuels credits can lift credit prices without needing to increase stringency as rapidly, and with less pass-through costs to California drivers.
- Result is more funding for transportation electrification, which provides real benefits to Californians.



CAPITOL ALERT

Newsom proposes cuts to clean energy, electric vehicles as California faces \$38 billion deficit

Reclaiming the LCFS for a ZE Future

Problem:

Almost 80% of the LCFS's \$3-4 billion in annual revenues goes to combustion fuels when we know we need to transition to ZE solutions to meet air quality and clean transportation mandates.

Fix:

- Allow full credit-generation for fixed-guideway (e.g., light rail) transit.
- Adopt a credit multiplier for ZE transit and school buses.
- Constrain the credit market to unlock billions for M/HD infrastructure and low-income electrification.

The LCFS Runs Counter to State Actions Taken to Reduce Emissions

- CARB's regulatory actions on mobile sources, eliminating air pollution and advancing the transition to zero emissions, including ACC II, ACF, and ACT.
- CARB's Mobile Source Strategy, identifying even faster electrification needed to meet attainment.
- CPUC's denial of utilities' requests to purchase natural gas trucks, recognizing that "California's express policy is to meet [the State's GHG reduction] goal through widespread transportation electrification."
- CPUC's elimination of gas line subsidies for methane refueling stations.
- CEC's 2022-2023 Investment Plan Update for the Clean Transportation Program, allocating 95% of its investment toward ZEVs.
- The State Legislature's clear intent in SB 350 to achieve rapid decarbonization through widespread transportation electrification.
- Executive Order N-79-20, calling for an end to the sale of internal combustion engine vehicles by 2035, and that by 2045, all vehicles on the road are zero-emission everywhere feasible.

Staff's Proposal Perpetuates Misalignment.



The Path Forward

Align LCFS policy with the State's climate, air quality, and equity goals.
Staff's Proposal fails to do this and must be fixed in this rulemaking.

Stop Subsidizing the Bad

Restrict over-generation of subsidies for
polluting fuels

Stop avoided methane credits for new
pathways.

Align deliverability requirements for all fuels.

Cap lipid biofuels.

Prohibit crediting for Enhanced Oil Recovery
activities, consistent with SB 1314.

Enhance Support for the Good

Increase LCFS support for ZE pathways
with the greatest EJ benefit

Allow full credit generation for fixed guideway
(e.g. light rail) transit.

Support VMT reductions with a transit and
school bus credit multiplier.

Unlock billions for transportation
electrification without adding costs to
consumers.

Appendix B:
Earthjustice Request for Public Records



January 30, 2024

VIA EMAIL TO

California Air Resources Board
Office of Legal Affairs
P.O. Box 2815
Sacramento, California 95812
prarqst@arb.ca.gov

Re: California Public Records Act Request for Records Related to the December 19, 2023 Staff Proposal for Amendments to the Low Carbon Fuel Standard.

Dear Public Records Coordinator:

Pursuant to the California Public Records Act (“CPRA”), we write to request the below public records. We submit this request because we require these public records to complete our comments on the December 19, 2023 Staff Report: Initial Statement of Reasons (“ISOR”) for the Proposed Amendment to the Low Carbon Fuel Standard,¹ which are due February 20, 2024. We requested this public information on January 18, 2024, via email to California Air Resources Control Board (“CARB”) staff, and we did not receive a response until January 26, 2024. That response indicated that a PRA request was required to obtain this public information. Accordingly, we hereby request the following records:

1. The spreadsheets and any other data used by CARB staff to calculate the greenhouse (“GHG”) benefits of the ISOR. This includes all data on the share of the GHG reductions that are attributed each year to the carbon intensity associated with the fuels versus the reductions associated with oil and gas extraction emissions.
2. Spreadsheets and any other data used to calculate the particulate matter (“PM”) and NOx reduction estimates in the ISOR including:
 - a. All data showing the portion of the air quality reductions attributable to each of the four categories named in the ISOR at p.38 (tailpipe emissions from on/off-road vehicles, changes in aircraft emissions, changes in emissions from stationary sources of fuel production, and changes in upstream emissions from oil and gas extraction), and
 - b. The spreadsheets and other data used to calculate the PM/NOx emissions reductions assumed from declining oil production at each oil field in California.

¹ Available at https://ww2.arb.ca.gov/rulemaking/2024/lcfs2024?utm_medium=email&utm_source=govdelivery

- c. The spreadsheets and any other data on what proportion of engines on the road each year CARB expects to be new-technology diesel engines (“NTDEs”) vs. Non-NTDEs.
3. All data used to develop the figures showing the fuel mix under the ISOR’s Proposed Scenario, Alternative 1, and the Environmental Justice (“EJ”) Scenario, including data regarding the basis for the “cap” or limit on virgin crop fuels in Alternative 1 and how that cap compares with the EJ scenario and the ISOR.
4. The spreadsheets and other data produced from running each scenario in the California Transportation Supply model that were used for the ISOR, including any output data on fuel volumes, feedstock volumes by fuel, and credit price by year.
5. All records including communications among or between CARB staff, consultants, Board, researchers, or other representatives—whether electronic or paper and including but not limited to letters, emails, presentations, reports, text messages,² and meeting notes—related to emissions for NTDEs (i.e. post-2007 engines) operating on renewable diesel, including all records concerning the November 2021 CARB Final Report titled “Low Emission Diesel (LED) Study: Biodiesel and Renewable Diesel Emissions in Legacy and New Technology Diesel Engines” by Durbin et al, with a contract number No.18ISD027.³

This request is made pursuant to the CPRA. (Gov. Code §§ 6250, *et seq.*) It is also made pursuant to Article I, section 3(b) of the California Constitution, which provides a constitutional right of access to information concerning the conduct of government. Article I, section 3(b) provides that any statutory right to information shall be broadly construed to provide the greatest access to government information and further requires that any statute that limits the right of access to information shall be narrowly construed. (*See Citizens for a Better Environment v. Dept. of Food and Agriculture* (1985) 171 Cal.App.3d 704, 711–712.)

In accordance with § 6253.9(a) of the CPRA, we request that CARB disclose responsive records in **electronic** Native File Format. Responsive files may be uploaded to our FTP server here: <https://earthjustice.sharefile.com/r-r79714ea7e3dc4ab38b01d27c459fe1cc>

² Text messages and personal devices are an appropriate subject of a CPRA request when the device or account contains “information relating to the conduct of the public’s business.” (*City of San Jose v. Superior Court* (2017) 2 Cal.5th 608, 617.) The factors to be evaluated “when writings are kept in personal accounts” include “the content itself; the context in, or purpose for which, it was written; the audience to whom it was directed; and whether the writing was prepared by an employee acting or purporting to act within the scope of his or her employment.” (*Id.* at 618.)

³ Available at https://ww2.arb.ca.gov/sites/default/files/2021-11/Low_Emission_Diesel_Study_Final_Report.pdf

or you may contact me at nrobertson@earthjustice.org to discuss an alternative means of electronic delivery. If any special software or other services are necessary to export the data or files into electronic format, please advise me immediately.

Further, Earthjustice respectfully requests a fee waiver in connection with this request. A fee waiver in this instance is consistent with the letter and spirit of the CPRA because Requesters are public interest, non-profit organizations that work to protect the rights of all people to a healthy environment and to uphold the laws of the State of California. Requesters will not use the requested records for commercial purposes. If CARB does not waive the fees, please immediately inform me of the basis for such a decision and the anticipated costs. We will then consider whether to approve such costs and whether to exercise our right to inspect the records during your office hours. (*See* Cal. Gov. Code § 6253(a).) The costs CARB may recover from Requesters are limited to the direct cost of duplication. (*See N. County Parents Organization for Children with Special Needs v. Cal. Dept. of Ed.* (1994) 23 Cal.App.4th 144, 147–148; *see also* Cal. Gov. Code § 6253.1(a)(2).)

We look forward to your response within ten (10) days of the receipt of this request, as required by § 6253(c) of the CPRA, by **February 9, 2024**. Consistent with the CPRA requirement that CARB “provide suggestions for overcoming any practical basis for denying access to the records or information sought,” (Cal. Gov. Code § 6253.1(3)), we request that you contact me within ten (10) days if you anticipate any basis for denying Requesters access to responsive records.

We also request that you provide all records on a rolling basis, as they become available. Such rolling production is critical for public participation in the rulemaking process, given the February 20, 2024 comment deadline that CARB has established for those wishing to comment on the ISOR.

We are interested in collaborating with CARB to make the process as efficient as possible for all parties, and we are happy to arrange a time to discuss the matter in greater detail. Please do not hesitate to contact me at (415) 217-2000 if you have any questions or concerns.

Sincerely,



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