EARTHJUSTICE

August 27, 2024

Matthew Botill, Chief, Industrial Strategies Division
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 15-Day Changes

Dear Mr. Botill and Mr. Ramalingam,

Thank you for considering Earthjustice's comments on the California Air Resources Board's (CARB) proposed 15-day changes for amending the Low Carbon Fuel Standard (LCFS) Regulation.

In our February comments on CARB's Initial Statement of Reasons (ISOR), Earthjustice provided detailed recommendations for modernizing the LCFS to align it with California's air quality, zero-emissions, and environmental justice goals.[1] These recommendations complemented those of numerous other environmental and environmental justice (EJ) organizations as well as organized labor and members of the scientific community, all of which have registered grave concerns about the LCFS's support for combustion fuels and the program's adverse impacts on California communities, global food prices, and sensitive ecosystems. This coalition not only provided written comments, but it also convened a People's LCFS Workshop on May 30, 2024, after CARB Staff failed to address key topics in the single workshop it held after the release of the ISOR. A summary of the findings and recommendations presented at the People's Workshop were circulated to Board Members and are attached here as Appendix A.[2]

Despite our well-supported recommendations for improvements to the LCFS and CARB's process, CARB has not incorporated any of them in the 15-day changes, with the single exception of improvements to fixed guideway crediting. Further, CARB had nearly six months to revise its initial proposal, but is now giving the public only 15 days to review and comment on

[1] *See* Earthjustice Comments on ISOR (Feb. 20, 2024), https://www.arb.ca.gov/lists/com-attach/7077-lcfs2024-Wz4BZgd0BCNVOwJo.pdf.
[2] The People's Workshop materials are also available at https://www.fixlcfs.com/the-peoples-workshop.

these substantial and complex changes. Such a process is not conducive to public understanding and discourse around the significant changes proposed.

In these comments, Earthjustice identifies numerous problems with the proposed 15-day changes and proposes recommended solutions, including the following:

1. **Failure to constrain lipid biofuels volumes**. While CARB recognizes that the glut of biofuels in the program poses risks, the measures that Staff propose will not address the massive, fundamental problems with unconstrained volumes that threaten the LCFS's integrity. According to CARB's own modeling in the 15-day changes, the projected volumes of renewable diesel (RD) are actually 50% higher than those modeled in the ISOR, which did not include the proposed 20% credit limit. This data reveals the ineffectiveness of Staff's proposed measures.

   ➔ CARB should impose a lipid biofuels volume limit in this rulemaking.

2. **Failure to phase out distortionary avoided methane crediting.** Avoided methane crediting distorts the fuels market and perversely rewards polluters. Despite the overwhelming evidence about its adverse impacts to communities and to attainment of California's clean air and climate goals, Staff's proposed changes fail to phase out avoided methane crediting on the necessary timeline. This directly contradicts the direction that many Board member provided at the September 2023 Board Meeting.

   ➔ CARB should immediately end avoided methane crediting for new pathways and phase out avoided methane crediting for existing projects at the end of their current crediting period.

3. **Failure to end the practice of allowing compressed natural gas (CNG) companies to greenwash fossil methane through the purchase of unbundled biomethane credits.**

   ➔ Starting in 2025, CARB should align its biomethane deliverability requirements with the Renewable Portfolio Standard (RPS) and only allow an entity to claim it dispenses biomethane if (1) it buys biomethane (bundled with its environmental attributes) and (2) contracts for its delivery to California and any interstate deliveries via common carrier pipelines use pipelines that flow toward California.

4. **Failure to propose meaningful deliverability requirements that prevent lavish subsidies for fossil fuel derived hydrogen.** Staff's proposed changes to hydrogen crediting continue to allow fossil gas-derived hydrogen to generate credits so long as producers purchase unbundled environmental attributes from biomethane producers,

which are almost exclusively out-of-state. This proposal perversely undermines in-state green hydrogen production and harms California communities near dirty hydrogen facilities. Staff's proposed changes to deliverability requirements for biomethane are vague, contingent, and unhelpful.

➔ Consistent with the RPS, CARB should require deliverability for biomethane by 2025 and end avoided methane crediting for hydrogen production by 2025.

5. **Weakening of carbon accounting for electrolytic hydrogen.** The 15-day changes may render electrolytic hydrogen even more polluting than hydrogen produced from fossil gas. Staff propose a step backward from the ISOR's already inadequate quarterly matching of low carbon intensity (CI) energy generation with a facility's energy demand.

➔ Consistent with the proposed federal rule, CARB should require hourly matching by 2028.

6. **Elimination of fossil jet fuel as a deficit generator**. Without sound justification, Staff propose this harmful step backwards, which would both exacerbate inequity and further weaken the program's credit price.

➔ CARB should ensure all major polluters are covered under the LCFS and restore jet fuel as a deficit generator.

7. **Failure to analyze an EJ Scenario that analyzes limits on biofuels and biomethane supply**. Despite CARB's failure to accurately model the proposals of the EJ community in the ISOR and the many corrections provided in the People's Workshop, Staff fail to correct those errors and provide an EJ Scenario in the 15-day changes. This failure deprives Board Members of important information and analysis.

➔ CARB should include an updated EJ Scenario that accurately reflects the proposals of stakeholders.

8. **CARB appropriately remedies the program's past failure to properly credit fixed guideway systems.**

➔ CARB should take additional steps to boost transit, including applying a credit multiplier.

9. **Failure to disclose and end substantial reliance on direct air capture (DAC) as an offset.** CARB's modeling shows that DAC projects, most of which will be out-of-state, will provide a massive offset for in-state fossil fuel use in the future. Despite the controversy surrounding offsets in the Cap-and-Trade program and the fact that DAC is not even a transportation fuel, CARB fails to fully disclose and address the offsetting role of DAC in the LCFS and places no limits on DAC use.

    ➔ CARB should fully disclose the current proposal's reliance on DAC and prohibit the use of direct capture as a transportation fuel offset.

Taken together, Staff's proposed changes lack important analysis and consist of unhelpful tweaks and backsliding on key provisions. If adopted, the proposed amendments would cast doubt on CARB's role as a global climate and environmental justice leader. We urge CARB to reorient and modernize the LCFS now. This requires focusing on restricting the combustion fuels that we do not need and on supporting California's goals for electrification, clean air, and a just transition off of fossil fuels. Unless these critical changes are made to the LCFS, the program may thwart, rather than support, attainment of these goals.

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DISCUSSION

I. The proposed 15-day changes will not address fundamental problems with unconstrained lipid biofuels; CARB should impose a volume limit.

In our comments on the ISOR, we explained the reasons why a volume limit on lipid biofuels was necessary: (1) 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. (2) Staff's previous efforts to constrain fuels that increase pressure on global deforestation are no longer effective.[3] We also explained that the two measures proposed by Staff (i.e. chain-of-custody certification and exclusion of palm-oil-derived fuels) will not solve the problem. We therefore recommended that CARB limit the generation of credits from all lipid-based fuel pathways to no higher than 2022 levels.

The 15-day changes fail to address this problem. While Staff appear to acknowledge that unconstrained lipid biofuels pose risks, the proposed changes fail to implement the necessary changes. This failure is particularly glaring because the evidence of the need for volume limits has mounted since the ISOR was issued. Staff's proposal is not a cap; rather it defines a per-company limit on credit generation for some fuel-feedstock combinations, which effectively does nothing. Indeed, according to CARB's own modeling in the 15-day changes, the projected volumes of RD are actually 50% higher than those modeled in the ISOR, which did not include the 20% credit limit. This data reveals the ineffectiveness of the proposed measure, as we describe in more detail below.

A. Since the ISOR was published, the evidence has mounted that a volume limit on lipid biofuels is necessary.

Even since December it has become increasingly clear that a volume limit on biomass-based diesel produced from lipids is not only necessary but also urgent. The evidence strongly suggests that without such a limit, the LCFS could continue to drive unsustainable practices that undermine the state's climate goals and disproportionately impact vulnerable communities.

For example, in June, 2024, U.S. Department of Agriculture (USDA) published a report that highlights significant concerns about the rapid growth of renewable diesel production and its impact on global feedstock trade.[4] The report states that this growth is drastically affecting feedstock availability and contributing to unsustainable practices globally - and singles out California's LCFS as a major driving force. In response to this report, Staff only noted that the report mentions future market dynamics could potentially mitigate this trend. It would be an abdication of sound policy making to ignore the overwhelming evidence and stark conclusions presented in this report - from the normally very circumspect USDA - solely by pointing to the

[3] *See* Earthjustice comment on ISOR (Feb. 20, 2024), https://www.arb.ca.gov/lists/com-attach/7077-lcfs2024-Wz4BZgd0BCNVOwJo.pdf.

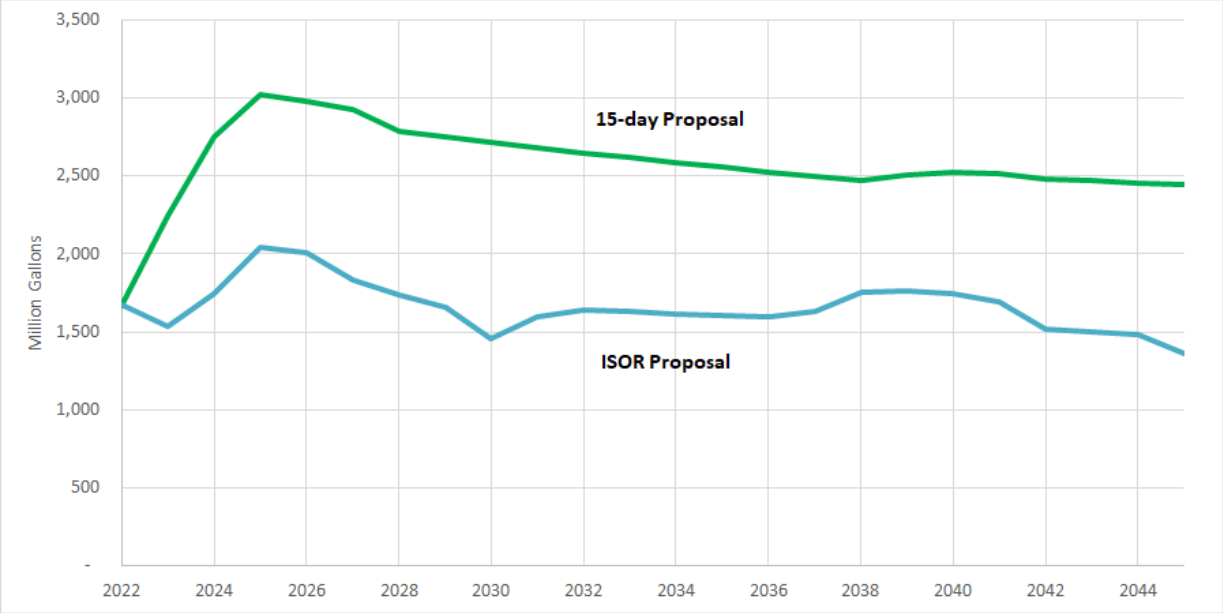
[4] O'Neil, Timothy, USDA Foreign Agricultural Service, *U.S. Renewable Diesel Production Growth Drastically Impacts Global Feedstock Trade* (June 2024). https://fas.usda.gov/data/us-renewable-diesel-production-growth-drastically-impacts-global-feedstock-trade.

disclaimer that future market conditions **could** alter the outcomes we are now seeing. Such a disclaimer could be said about any worrisome trend, and in no other context would it be adequate basis for policy inaction. This evidence demonstrates a clear need for a volume limit to prevent further exacerbation of these issues.

B. Staff's proposed 15-day changes will not address the problem of unconstrained lipid biofuels volumes.

The 15-day changes proposed by CARB Staff are insufficient and will not effectively address the problem of unconstrained lipid volumes. The proposed 20% credit limit on biomass-based diesel is not a genuine cap because it does not limit total volumes. By merely assigning any volumes above the 20% threshold the CI of the current benchmark, the policy falls far short of curbing the oversupply of RD. As a result of these deficiencies, it will do little if anything to prevent the anticipated massive influx of RD into California. According to CARB's own modeling in the 15-day changes, the projected volumes of RD are actually 50% higher than those modeled in the ISOR (Figure 1), which did not include the 20% credit limit. This data reveals the ineffectiveness of the proposed measure. These superficial provisions are not aligned with the urgency of California's climate goals and fail to send a meaningful signal to reduce reliance on even virgin soy and canola oil.

Figure 1. Renewable Diesel and Biodiesel Volumes



Data Source: CARB.[5]

Moreover, CARB's decision to exclude from the 20% constraint other crop-based feedstocks and lipids such as carinata, camelina, and used cooking oil, as well as to exempt

[5] Figure created from CARB modeling tables provided with proposed 15-day changes, available at https://ww2.arb.ca.gov/resources/documents/supplemental-20232024-lcfs-modeling-documentation.

alternative jet fuel from the constraint, is not only ineffective but also counterproductive. The exclusion of these fuels opens the door for fuel shuffling and increases the likelihood that producers will simply switch to other problematic feedstocks, which risk driving up food prices and contributing to deforestation, the very outcome CARB is purportedly attempting to address. As has been repeatedly stressed by several commenters and researchers (and now corroborated by recent USDA analysis), if California's consumption of these other crop or waste based lipid fuels continues to grow further beyond its proportionate share, those fuels will simply be backfilled in the global market by soy and palm oil, increasingly sourced from Argentina, Brazil, Indonesia, and Malaysia. In other words, from regions where the threats to high carbon-stock forests are greatest.

We hope the Board members see this provision for what it is: a way to adopt an ineffective and potentially harmful policy.

C. A volume limit is necessary and provides key benefits that the proposed changes lack.

Given the evidence and the major deficiencies in Staff's proposal, we urge CARB to impose a volume limit on lipid-based diesel. Such a limit would provide many benefits that the current proposal lacks.

First, it provides a clear and enforceable mechanism to prevent the oversupply of renewable diesel, which is critical to aligning the LCFS with California's broader climate goals. A limit on these credits could be implemented in numerous ways, but Staff have failed to analyze and propose options to Board Members.

Second, a volume limit would help to ensure that the LCFS does not disproportionately benefit major oil companies at the expense of vulnerable communities. It is important to recognize that many biofuel producers are major oil companies. The current provision, as weak as it is, does little more than ensure these companies continue to reap the financial benefits of California's climate policies—on the backs of the very communities most impacted by their pollution . Even with volumes above 20% assigned to the benchmark CI, producers still have an incentive to deliver fuel to California. They would avoid generating deficits, benefit from higher diesel prices in California, and potentially evade Cap-and-Trade obligations. This is not the equitable transition that California has promised to its residents.

A standard response to the imposition of a volume limit is the concern that it could lead to an increase in fossil fuel use. However, this argument is unfounded. A well-designed volume limit would not lead to more fossil fuel consumption but rather to a more strategic and sustainable deployment of low-carbon fuels by tightening the credit market and providing more dollars to transition to zero-emission vehicles (ZEVs). The goal is not to restrict the use of all low-carbon fuels but to ensure that their production and use are aligned with environmental justice and sustainability goals and ensure the LCFS supports, rather than hampers, progress toward 100% ZEV goals. CARB has not evaluated a scenario that captures the real-world effects

of providing more funding to the ZEV transition. That is, while other fuels are modeled to include benefits from incentive programs such as the Inflation Reduction Act, there is no mechanism that shows that more LCFS funding to ZEVs would lead to faster adoption of these technologies. Additionally, Staff have not updated the modeling to show more recent ZEV adoption. Despite previous calls to update the expected ZEV penetration rates to reflect more current data, Staff continue to rely on data from 2022. This leads to Staff underestimating the electricity fuel usage today and likely in the future, further countering Staff's assumption that only fossil rates could increase, not ZEV.

Third, a biofuels limit would provide a more sustainable and equitable solution to depressed credit prices that will continue to plague the program under Staff's proposed changes. Given the weaknesses in CARB's current modeling, including not accounting for actual ZEV sales which underrepresents electricity use and modeling unsustainable prices in its proposed scenario (i.e., multiple years of $0 credit prices), it is highly likely that the automatic acceleration mechanism will be triggered, perhaps multiple times, further diluting the efficacy of this provision. Moreover, by continuing to allow large volumes of waste feedstock to be funneled into California, this policy contradicts CARB's stated goal of ensuring that the state does not take more than its fair share of other feedstocks.

We urge CARB to reconsider this provision and adopt stronger, more effective measures that truly align with California's climate goals and commitments to environmental justice. The time for half-measures is over. California must lead by example and implement policies that protect both our environment and our communities.

D. Additional authority to consider adjusting land use change values will not absolve the need for immediate action on the surge of crop biofuels.

Staff added a provision[6] that grants the Executive Officer (EO) the authority to assign a more conservative land use change (LUC) value. While we appreciate the recognition that more conservative LUC values may be necessary, the authority to consider making adjustments in the future cannot replace the need for immediate action now. There is already a sufficient basis to adopt more conservative LUC values and CARB should not delay taking important action.

First, as we have explained in prior comments, the existing LUC evaluation framework is outdated and inappropriate. The most recent update was in 2015—well before the recent surge in renewable diesel (RD) production, which CARB did not anticipate at that time. This outdated evaluation does not accurately reflect the current landscape of biofuel production and its associated impacts. The spike in RD production over the past several years has likely altered the land use dynamics significantly, yet the regulatory framework has not kept pace with these changes. The inherent risk-amplification that comes from these much larger raters of consumption means that the EO is already unjustified in continuing to rely on outdated data,

[6] *See* CARB, Proposed 15-day Changes, § 95488.3(d).

which cannot be considered a reliable safeguard against the environmental impacts of increased biofuel production.

Delaying action now by adopting a provision allowing a future adjustment will be less effective and raises serious questions about the adequacy and transparency of the land use change evaluations under the LCFS. We, along with others, have provided substantial evidence of the indirect land use risks associated with the unconstrained subsidy for biofuels. By acknowledging these risks, CARB has implicitly recognized the need for more accurate, higher, LUC factors for feedstocks. Given the substitutability of these feedstocks and their status as global commodities, CARB has a responsibility to act immediately and amend the Soy LUC factors, rather than merely granting themselves the authority to consider doing so in the future.

First, the provision raises substantial concerns about whether and how CARB would determine that a new, more conservative LUC factor is necessary. CARB has already approved pathways from various regions across the globe, including a pathway for Argentine soy-based RD in 2023,[7] despite comments from experts that highlighted the problems.[8] In that case, CARB accepted the applicant's proposal to apply the existing LUC impact value of 29.1 gCO2e/MJ for Argentinian soybean oil-derived renewable diesel, as listed in Table 6 of the LCFS regulation. Given this precedent, we are not confident that CARB would now pivot to imposing a more conservative LUC value.

Moreover, the provision, in conjunction with the approval of pathways like the Argentine soy-based RD, highlights a troubling lack of transparency and public engagement in the LUC evaluation process. Under the current system, much of the evaluation is conducted by the fuel applicant, with limited opportunities for public input or scrutiny. This process lacks the necessary rigor and accountability to ensure that LUC values are accurately assessed and applied. The new provision further exacerbates this issue by centralizing more decision-making power with the EO, without providing any clear mechanisms for public oversight or involvement. This approach is wholly insufficient and fails to meet the standards of transparency and public participation that are critical for sound environmental governance.

E. The proposed changes to sustainability criteria are ineffective.

As we described in detail in our ISOR comments, CARB's proposal to rely primarily on sustainability criteria is not a solution to the oversupply of biofuels. Sustainability criteria do nothing to limit volumes and are subject to manipulation by industry. The proposed 15-day changes, which add reference to "best environmental management practices" do not address these fundamental shortcomings.

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[7] CARB, LCFS Pathway Number B052001, available at https://ww2.arb.ca.gov/resources/documents/2023-lcfs-pathways-requiring-public-comments.

[8] *See, e.g.*, Union of Concerned Scientists Commet on P66 Argentine Soy RD Pathway (Dec. 13, 2023), https://ww2.arb.ca.gov/public-comments/lcfs-fuel-pathways-public-comments/webform/submission/7101?destination=/public-comments/lcfs-fuel-pathways-public-comments/webform/results/submissions.

Numerous peer-reviewed studies have documented the direct and indirect impacts of biofuel feedstock production on deforestation. For instance, Curtis et al. (2018) found that 27% of global forest loss 2001-2015 was due to permanent land use changes for factors including commodity production, and the rate of commodity-driven deforestation has not decreased since 2001, despite corporate commitments.[9]

Further, the pressure to meet increasing demand for biofuels can lead to indirect land use changes (ILUC), where agricultural activities are displaced to forested areas as more land is allocated to biofuel feedstock production. This phenomenon, as described by scientist experts, exacerbates deforestation and results in significant carbon emissions, potentially offsetting the purported climate benefits of biofuels.[10] Failure to address ILUC can undermine the environmental benefits of biofuels and contribute to further deforestation.[11]

While sustainability criteria are designed to mitigate the environmental impacts of biofuel production, they are insufficient in addressing the scale and complexity of deforestation. These criteria often focus on preventing direct deforestation within certified areas but fail to account for the broader landscape-level impacts, including ILUC and the displacement of food production.

The provision requiring that biomass be sourced only from land cleared or cultivated prior to January 1, 2008, is insufficient and misleading as a guardrail. While it ostensibly aims to prevent deforestation and preserve natural habitats, it fails to address the broader issue of ILUC, where agricultural activities are displaced to other areas, leading to new deforestation and ecosystem disruption. This provision gives a false sense of security, as it does not account for the cascading effects of expanding biofuel production, which can indirectly incentivize the clearing of forests elsewhere, undermining the very environmental protections it seeks to uphold.

Sustainability criteria are limited in preventing deforestation, noting that certification schemes often lack the enforcement mechanisms needed to ensure compliance across entire supply chains. Moreover, many of these criteria do not adequately consider the cumulative impacts of expanding biofuel production, particularly in regions with weak governance and land tenure issues, where illegal deforestation is rampant.

The new provision[12] that requires best management practices represents a bare minimum requirement for mitigating the environmental impacts associated with biofuel production. The practices outlined—maintaining biodiversity, enhancing soil fertility, minimizing runoff, and reducing unsustainable water use—are critical not only for reducing GHG emissions but also for safeguarding California's natural resources. Delaying its implementation would risk exacerbating

[9] Curtis, P. G., Slay, C. M., Harris, N. L., Tyukavina, A., & Hansen, M. C. (2018). Classifying drivers of global forest loss. Science, 361(6407), 1108-1111, https://www.science.org/doi/10.1126/science.aau3445.
[10] Timothy Searchinger *et al.,* Use of U.S. Croplands for Biofuels Increases Greenhouse Gases Through Emissions from Land-Use Change. *Science* 319, 1238-1240(2008). DOI:10.1126/science.1151861.
[11] *Id*.
[12] *See* CARB, Proposed 15-day Changes, § 95488.9(g)(1)(B).

emissions, degrading biodiversity, and contributing to soil and water contamination—outcomes directly counter to the broader mission of CARB to protect air quality and public health.

II. Staff's proposed 15-day changes fail to address the major problems with avoided methane crediting; CARB should end avoided methane crediting for new pathways and phase out avoided methane crediting for existing projects at the end of their current crediting period.

In our comments on the ISOR we explained that avoided methane crediting must end because it extravagantly rewards an unregulated industry with accounting that distorts the LCFS program, undermines transportation goals, and worsens environmental injustices for frontline communities.

To fix this problem, we recommended that CARB take two commonsense fixes: (1) End avoided methane credit for new projects starting in 2025 (2) Phase out avoided methane crediting for existing projects at the end of their current crediting period. As we explained in our comments, this approach is utterly reasonable and moderate as it allows producers currently participating in the program to continue using their existing pathway until the end of their current crediting period. It also avoided stranded assets by sending a signal now that future crediting will change. And critically, it does not end credit for biomethane producers, it just ends negative CI scoring – functionally a lucrative offset scheme for the agriculture sector that has nothing to do with transportation – because these negative values create powerful, perverse distortions in both the transportation and agriculture sector that are in conflict with State climate policies.

Despite the evidence presented and the moderate nature of our proposal, Staff have failed to implement these recommendations. Instead, the 15-day change proposal would allow pathways to continue claiming avoided methane credits until 2049 (or 2045 if they "break ground" on their project after 2029). There is no justification for this treatment to continue. **Nothing about livestock methane's chemistry makes it better than landfill or wastewater methane at fighting climate change.** The avoided methane credits are premised entirely on the fact that CARB has so far refused its clear authority to regulate livestock methane. The 15-day change proposal effectively grants decades more of immunity to this major pollution source by treating its capture as an offset rather than an obligation.

Shockingly, the 15-day change proposal constitutes a massive step backwards from the Staff proposal presented in September 2023. The September 2023 draft allowed one 10 year crediting period for pathways certified prior to 2030, where the 15-day change version allows two. And the September draft would allow a 5 year crediting period for pathways certified between 2030 and 2034, implying that the practice would finally phase out for new pathways by 2035. The 15-day change proposal inexplicably abandons these distant restrictions, and furthermore 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.

While the September 2023 proposal unjustifiably delayed action, it is incomprehensible that the new proposal is even weaker still. 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"[13]
- **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."[14]
- **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."[15]
- **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

[13] 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).
[14] CARB Board Meeting Transcript (Sept. 28, 2023) at 318-319, https://ww2.arb.ca.gov/sites/default/files/barcu/board/mt/2023/mt092823.pdf (emphasis added).
[15] CARB Board Meeting Transcript (Sept. 28, 2023) at 322, https://ww2.arb.ca.gov/sites/default/files/barcu/board/mt/2023/mt092823.pdf (emphasis added).

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."[16]

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. In the 15-day proposal, Staff provide no public justification for this change.** CARB 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.

III. Staff's proposed 15-day changes continue to exempt biomethane from the deliverability requirements that apply to every other LCFS fuel; CARB must align deliverability requirements with the Renewable Portfolio Standard beginning in 2025.

As we detailed in our ISOR comments, the LCFS's failure to apply robust deliverability requirements to biomethane undermines the integrity of the program and thwarts its very purpose: to reduce the carbon intensity of transportation fuels in California. The LCFS gives CNG companies a unique greenwashing opportunity that is not available to any other fuel provider. The CNG industry, and no other that participates in the LCFS, can take credit for using low-carbon fuels that are never delivered to California. As a result, the CNG industry is now generating lavish credits for purchasing unbundled credits that do nothing to advance the fundamental purpose of the LCFS to reduce the carbon intensity of California's transportation fuels. Further, this practice 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 discussed further in Section IV below.

Staff's proposed change does nothing to solve this problem. Staff fail to require purchases and delivery contracts for biomethane as required by the federal government in the Renewable Fuels Standard (RFS) and the California Energy Commission's (CEC) RPS.[17] This failure persists in the proposed 15-day changes despite the fact that Staff had previously aspired to

[16] CARB Board Meeting Transcript (Sept. 28, 2023) at 325, https://ww2.arb.ca.gov/sites/default/files/barcu/board/mt/2023/mt092823.pdf (emphasis added).
[17] 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. CEC, RPS Eligibility Guidebook at 7, 9–10.

alignment with the RPS.[18] Moreover, Staff provide no rationale for adopting a deliverability requirement that lacks the commonsense elements of the RPS requirements. Instead, Staff propose weak deliverability requirements that will not apply for at least the next 14 years and likely not until 2041.

In the 15-day changes, Staff add a minimal, contingent three-year "acceleration" to the ISOR's overly generous 2041 deadline for showing physical flow of biomethane to California.[19] This provision is woefully inadequate, misleading, and counter to Board direction. Staff fail to explain why existing flow maps, such as those already identified by groups like Earthjustice, cannot be used immediately.[20] Staff also fail to explain why they built in a 12-year delay between identification of the appropriate pipeline flow map (which already exists), and the imposition of the physical flow requirement in 2038. The suggestion that a new map might be developed, depending on Executive Officer discretion, with no clear timeline or commitment, avoids taking real action while giving the appearance of progress. It is tantamount to telling the Board and EJ groups that CARB is addressing the problems with fossil CNG greenwashing when, in reality, it is merely delaying a true phase-out. And it is entirely unjustified given that meaningful deliverability requirements from the RFS and RPS are readily available to plug into this regulation. Furthermore, Staff's proposed changes also fly in the face of Board direction at the September 2023 Board meeting. At that meeting 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."[21] Staff have done nothing of the sort.

Importantly, no other fuel suppliers can greenwash fossil fuels by purchasing the unbundled environmental attributes of fuels that are not delivered to California. To generate credits for selling renewable diesel, entities must procure and take delivery of that renewable diesel.[22] Similarly, the LCFS' book-and-claim rules for low-CI electricity require electricity to

[18] As we explained previously, 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. 40 Code of Federal Regulations § 80.1426(f)(11)(ii).

[19] CARB, Proposed 15-Day Changes, § 95488.8 (i)(2)(B)(1).

[20] As we asserted in our ISOR comments, 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 line. *See* 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 The EIA has also synthesized this data into a map that shows the flow of the nation's interstate gas pipelines. 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.

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

[22] See California Code of Regulations § 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

be generated within California or meet the deliverability requirements for Portfolio Content Category 1 Renewable Energy Certificates.[23] CARB must immediately end biomethane's unjustified exception from this rule.

We urge CARB to align its biomethane deliverability requirements with the RPS and only allow an entity to claim it dispenses biomethane if (1) it buys biomethane (bundled with its environmental attributes) and (2) contracts for its delivery to California and any interstate deliveries via common carrier pipelines use pipelines that flow toward California. These requirements should apply starting in 2025.

If CARB fails to adopt these commonsense reforms and instead adopts Staff's proposal, the LCFS will continue to direct scarce public dollars to outdated, polluting dirty hydrogen production technologies. This perpetual subsidization of fossil fuel users will undermine CARB's standing as an environmental leader; no other California or federal climate program tolerates such gimmicks. CARB will also undermine its own ZEV and carbon neutrality goals, for the profit of mostly out-of-state companies, and at the expense of Californians. Correction of this deeply flawed practice must occur in this rulemaking.

IV. The proposed changes continue to favor dirty hydrogen and out-of-state biomethane producers over clean, in-state hydrogen production; CARB should apply Renewable Portfolio Standard deliverability requirements starting in 2025 and end avoided methane crediting for methane used in hydrogen production starting in 2025.

Although Staff propose to remove LCFS credit generation eligibility for hydrogen produced using fossil gas as a feedstock starting in 2031,[24] this change does nothing to remedy the most damaging and perverse feature of the LCFS's dirty hydrogen subsidy: the practice of allowing fossil methane-derived hydrogen to participate in the program and receive a negative CI score as long as the hydrogen producer buys environmental attributes from biomethane (which is likely from out of state). Staff's failure to fix this problem will have many perverse effects and must be remedied.

First, it sends exactly the wrong market signal, subsidizing the entrenched, dirty and lowest cost means of producing hydrogen rather than catalyzing the growth of new, green hydrogen production in California. Indeed, the LCFS's lavish treatment of dirty hydrogen paired with biomethane attributes directly undermines zero-emissions hydrogen because (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 biomethane can characterize their hydrogen as

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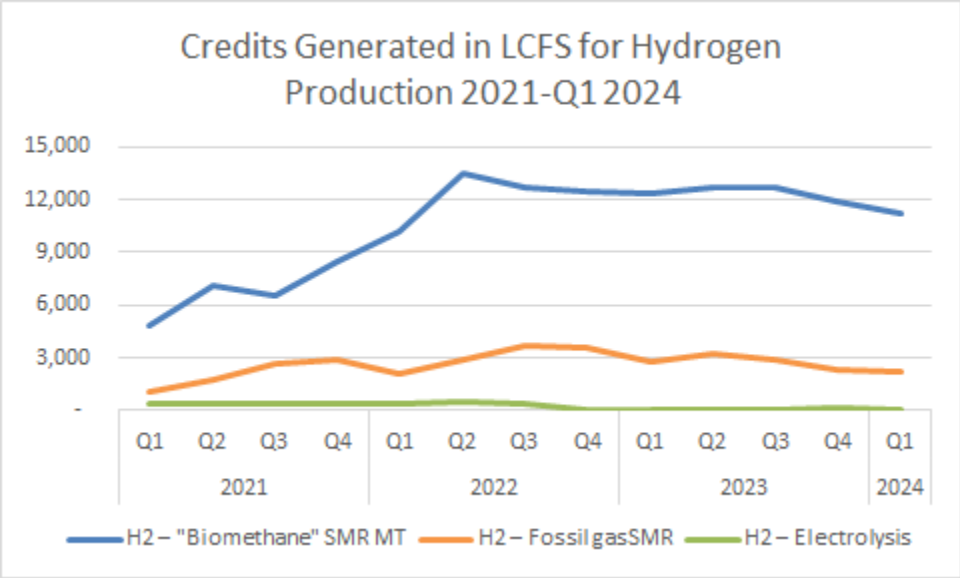
distribution methods, and the distance through which the fuel was transported under contract from the entity that generated or produced the fuel, to any intermediate entities, and ending at the fuel blender, producer, importer, or provider in California. The fuel pathway holder and any entity reporting the fuel must demonstrate that the actual fuel transport mode and distance conforms to the stated mode and distance in the certified pathway.").

[23] CARB, LCFS Guidance 19-01 at 2, https://ww2.arb.ca.gov/sites/default/files/classic/fuels/lcfs/guidance/lcfsguidance_19-01.pdf.

[24] CARB, Proposed 15-day Changes § 95482(h).

carbon negative and thus receive a higher price for their hydrogen. The chart below in Figure 2 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. Staff's proposal does nothing to address this perverse effect.

Figure 2: Credits Generated in the LCFS for Hydrogen Production



Data Source: CARB. [25]

Although Staff's proposal claims it will end in 2031 crediting for the fossil gas SMR hydrogen that is not paired with biomethane (the orange line in Figure 2), it will continue to reward fossil gas methane so long as it is paired with unbundled biomethane attributes (the blue line) and disfavor truly clean hydrogen (the green line).

Second, Staff fail to address impacts to air quality in communities impacted by SMR facilities that will continue to reap rewards from the LCFS. Evidence shows that SMR facilities emit health-harming pollution such as NOx, carbon monoxide, and fine particulate matter.[26] The LCFS's generous crediting of SMR fossil hydrogen paired with biomethane attributes threatens the achievement of air quality standards in California's most polluted air basins.

Third, reliance on out-of-state biomethane attributes will not help California meet its own climate goals as matching fossil hydrogen with biomethane attributes does not account towards its GHG inventory. Therefore, Staff's allowance of this practice inconsistent with the Scoping Plan. As we detailed in our ISOR comments, the biomethane from which fossil hydrogen

[25] Figure generated by modeling data provided by CARB, available at https://ww2.arb.ca.gov/sites/default/files/2024-04/ISOR_Proposed_output.xlsx.
[26] 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.

producers could purchase attributes have almost exclusively been produced out-of-state[27]. Each of the certified hydrogen pathways listed as using biomethane from dairy manure pairs fossil gas feedstocks with unbundled purchases of environmental attributes from Indiana, Wisconsin, New York or Minnesota to earn a negative carbon intensity score.[28] Likewise, every single certified pathway for hydrogen that is characterized as using biomethane from swine manure is for a fossil SMR 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.[29] Staff do not acknowledge this fact or provide any explanation as to why the LCFS should continue to provide a massive subsidy to out-of-state biomethane producers.

There is a way to fix the problems caused by the LCFS's subsidy of dirty hydrogen: (1) Apply deliverability requirements for hydrogen used in the LCFS starting in 2025;[30] (2) End avoided methane crediting for biomethane used in hydrogen production starting in 2025. Given the grave problems detailed above, these changes should be a priority for CARB in this rulemaking. Indeed, there is no basis for delaying changes to the LCFS's treatment of fossil methane-derived hydrogen until 2046, as Staff propose. The longer the LCFS continues to reward fossil gas-derived hydrogen, which depends on fossil methane infrastructure, the greater the stranded asset burden California will face in the future.

We urge CARB to send the signal now that it will favor investment in the necessary and nascent market for in-state zero-emissions hydrogen production over the production of polluting SMR of fossil gas, greenwashed with (largely out-of-state) biomethane attributes. Staff's proposed changes fail to do so and must be corrected.

V. The 15-day changes to accounting rules for electrolytic hydrogen may render electrolytic hydrogen even more polluting than hydrogen produced from fossil gas; CARB should require hourly matching by 2028.

It is critical 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.[31] As we explained in our ISOR comments, indirect accounting for low CI electricity that allows matching of low CI energy generation with a

[27] See CARB, LCFS Data Dashboard, Figure 10b (showing over 80% of biomethane from out-of-state), https://ww2.arb.ca.gov/resources/documents/lcfs-data-dashboard.
[28] CARB, Current Fuel Pathways (Jan. 9, 2024 ed.), https://ww2.arb.ca.gov/sites/default/files/classic/fuels/lcfs/fuelpathways/current-pathways_all.xlsx.
[29] CARB, Current Fuel Pathways (Jan. 9, 2024 ed.), https://ww2.arb.ca.gov/sites/default/files/classic/fuels/lcfs/fuelpathways/current-pathways_all.xlsx.
[30] As discussed in detail in Section III above, consistent with the RPS's treatment of power plants, 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.
[31] 17 CCR § 95488.5(e), Table 7-1 (providing a default CI value for hydrogen from grid average electricity of 164.46 gCO_2e/MJ and a default value of hydrogen from steam methane reformation of fossil gas of 117.67 gCO_2e/MJ).

facility's energy demand on anything less frequent than an hourly basis would lead to emissions increases that are just as dramatic as relying on grid-average electricity.[32] According to research from Princeton University, an hourly matching requirement is necessary to avoid spiking pollution on the power grid from electrolytic hydrogen production. Indeed, even a weekly matching standard would lead to emissions increases.[33]

Unfortunately, the 15-day changes commit this very error by allowing book-and-claim accounting for low-CI electricity to span three quarters.[34] This change represents a step backwards from the already-deficient ISOR proposal, which required only quarterly matching. CARB fails to justify the basis for this backward movement and fails to account for the real risk that LCFS hydrogen could increase emissions under this accounting framework, directly counter to the very purpose of the program.

Weakening time-matching requirements will also increase power costs for ratepayers. Princeton's energy modelers found that failing to adhere to all of the "three pillars" (additionality, deliverability, and hourly-matching) would increase power prices in Southern California by 8%. Other studies in Europe examining hourly versus annual matching (which CARB's new proposal swings wildly closer to) resulted in a staggering 43% increase to power prices.[35] Increasing our already high electric rates and decreasing our grid's already fragile reliability for the sake of easing accounting rules for the heavily subsidized hydrogen industry is unjust and risks severely hampering the energy transition.

CARB should correct this glaring flaw and require electrolytic hydrogen producers who claim to use low CI electricity to meet an **hourly** matching requirement by 2028. Such a change would be in alignment with standards under development at the U.S. Treasury Department.

VI. Removal of jet fuel as a deficit generator is counterproductive and inequitable and lacks justification; CARB should restore jet fuel as a deficit generator.

The removal of intrastate fossil jet fuel as a deficit generator in the LCFS's 15-day update is a significant step backwards and contradicts California's broader climate and environmental justice objectives, including those outlined in the state's Scoping Plan, the LCFS ISOR, and EJAC recommendations.[36] CARB should restore jet fuel as a deficit generator in its final rule.

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[32] Earthjustice ISOR comments at 31 (citing 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).

[33] 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.

[34] CARB, Proposed 15-day Changes, § 95488.8 (I)(1)(C)(4).

[35] Zeyen, E., I. Riepin, and T. Brown. "Hourly versus annually matched renewable supply for electrolytic hydrogen." Zenodo, Dec (2022).

[36] The ISOR states "Staff is also proposing to include deficit-generating fossil jet fuel for intrastate flights in the LCFS, beginning in 2028. This proposal aligns with the 2022 Scoping Plan Update toward

The initial proposal to include intrastate fossil jet fuel as a deficit generator was a step in the right direction. It recognized the need to hold all transportation fuels accountable for their environmental impact, aligning with the Scoping Plan's emphasis on comprehensive GHG reductions. By excluding fossil jet fuel from generating deficits, there is less incentive for airlines to invest in cleaner fuels, stalling progress in aviation, one of the most challenging sectors to decarbonize. Staff began to discuss this change in 2021[37] and the record supporting it is robust. Reversing such an important policy at the last minute is indefensible. It also contradicts the direction set by the Governor for CARB to adopt a 20% clean fuels target in the aviation sector and transition away from fossil fuels.[38]

By exempting jet fuel from the LCFS, CARB is signaling that certain sectors of California's economy need not do their part to address the climate threat. Such a message is counterproductive and undermines the principle of equity in climate policy, where all sectors should contribute their fair share to emission reductions. In the context of jet fuel, an exemption is particularly regressive because those who can most afford to pay for decarbonization (i.e. airlines and Californians who can afford to purchase plane tickets) continue to be given a pass, while those least able to transition (i.e. Californians who continue to use gasoline cars because they cannot afford EVs) will be left to foot the bill, both financially and through health impacts. As scores of airport workers have made clear to CARB, the continued use of fossil fuels at airports and near their residences harms their lungs and the health of their family members.

By designating fossil jet fuel as a deficit generator, CARB would create substantial pressure on airlines to move beyond symbolic gestures and take concrete steps to reduce their emissions. This policy would not only support labor's call for a healthier work environment but also challenge airlines to meet their corporate sustainability goals—goals that many have publicly committed to but are currently falling short of achieving.

Airlines that fail to transition to SAF would face increased scrutiny from both regulators and the public, as their continued reliance on fossil jet fuel would directly contribute to the deficits they generate under the LCFS. This creates a strong incentive for airlines to purchase and use more SAF, thereby helping reduce their pollution burden.

CARB's regressive change will also damage the LCFS itself: the elimination of significant demand for LCFS credits at a time when there is an undisputed credit glut puts

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decarbonizing the aviation sector, and with EJAC's recommendation to further integrate opt-in sectors into the regulation.79,80 The use of alternative jet fuels, which generate credits under the LCFS, will achieve particulate matter emissions reductions that benefit communities living near airports. Adding fossil jet fuel as a deficit generator also strengthens the signal to invest in zero-emission aviation technology, as modeled in the 2022 Scoping Plan Update in the 2040s."

[37] *See* CARB, Public Workshop: Potential Future Changes to the LCFS Program (Dec. 21, 2021), https://ww2.arb.ca.gov/sites/default/files/2021-12/LCFS%2012_7%20Workshop%20Presentation_notes.pdf.

[38] Governor Gavin Newsom, Letter to Liane Randolph (July 22, 2022), https://www.gov.ca.gov/wp-content/uploads/2022/07/07.22.2022-Governors-Letter-to-CARB.pdf?emrc=1054d6.

downward pressure on the credit price, compromising the program's overall effectiveness. By Staff's ISOR modeling, the detrimental change to jet fuel's status leaves over 26 million metric tons of deficits on the table -- credits that could help stabilize the program's credit price and 3 billion gallons of additional fossil jet fuel combusted.

CARB's stated basis for this rollback is unsupported. CARB states that "[p]ublic commenters noted that the original proposal did not guarantee that airlines would procure and use alternative jet fuel as a compliance response to the deficits generated from fossil jet fuel. Aviation fuel suppliers who would generate deficits under the initial proposal could simply acquire credits to meet that compliance obligation." Even if it were the case that airlines purchased credits instead of procuring alternative jet fuel, such an outcome would still lead to the positive outcomes described above (i.e. an equitably shifting of program costs to wealthier Californians, boost in demand for credits, and reduction of combustion). CARB's reference to a "fact sheet" regarding reduction of pollution at airports presents no meaningful solutions for airport workers and their communities. And to the extent there is concern about use of unsustainable crops for sustainable aviation, this creates yet another reason for limiting biofuel volumes.

Additionally, any narrative suggesting that removing fossil jet fuel as a deficit generator addresses environmental justice (EJ) concerns over biomass feedstock oversupply lacks substance and coherence when examined in the broader context of CARB's policy framework. If CARB were genuinely concerned about the impact of biomass feedstocks, it would implement a comprehensive biomass feedstock policy that applies to all biofuels, rather than proposing measures that could incentivize fuel shuffling and create loopholes.

Finally, as other states and countries look to California for leadership in climate policy, this decision could set a concerning precedent. Where other jurisdictions may have followed California's lead to include jet fuel, they may now be discouraged from taking bold actions in this sector, delaying needed and meaningful global reductions in a growing emissions sector.

Including jet fuel as a deficit generator would send a clear signal that the aviation sector is expected to take meaningful action toward reducing its carbon footprint. This aligns directly with labor's demands for stronger environmental protections that safeguard the health of workers and their communities. We urge CARB to restore jet fuel as a deficit generator to protect the health of California's airport workers, align with state climate goals, and maintain its status as a climate leader that ensures all polluters are held to account.

VII. Staff's 15-day package fails to model an Environmental Justice Scenario; CARB should include an updated Environmental Justice Scenario that accurately reflects the proposals of stakeholders.

We are deeply concerned about the inadequacy of the EJ Scenario presented in the ISOR, and the complete absence of an updated EJ Scenario in the 15-day package. This omission is particularly troubling given the significant problems we and other stakeholders identified with

the initial EJ Scenario modeling—issues that undermine the validity of CARB's findings and its commitment to addressing environmental and environmental justice concerns.

First, the modeling data for the EJ Scenario was only made publicly available two months after the close of the initial public comment period. This delay in access to crucial information severely limited stakeholders' ability to provide informed feedback on the scenario modeling. Such a lag in transparency is unacceptable, especially for a scenario that is supposed to reflect the critical needs and voices of the most impacted communities.

Second, once CARB finally made output files available to the public the day before the April Staff workshop, it became clear that the ISOR EJ modeling did not reflect actual EJ asks. As Stanford modelers explained in comments on Staff's April workshop,[39] and as panelists explained at the Peoples' Workshop, several significant discrepancies exist, including the following:

- **Transportation Electrification and ZEVs**: Despite EJ stakeholders advocating for increased funding for transportation electrification, the scenario did not model any changes in electrification. This omission is particularly problematic given the growing role of ZEVs within the LCFS framework. CARB developed the model with the knowledge that ZEVs would be a critical component of the regulation, yet the scenario fails to account for the billions of dollars expected to be generated through LCFS—funds that would logically have a substantial impact on ZEV penetration. It is inconceivable that CARB could suggest that such significant funding would have no effect on ZEV adoption. As evidenced by recent data, ZEV sales in California remain strong and are outpacing mandated goals, further underscoring the potential impact of increased funding on ZEV penetration[40].
- **Biomass-based Diesel Volumes**: EJ groups specifically requested that lipid diesel volumes be capped at 2022 levels to prevent further environmental harms. However, CARB's model inexplicably projected Renewable Diesel (RD) volumes at 60% below 2022 levels starting in 2024. This significant deviation from the requested cap undermines the entire premise of the EJ scenario, rendering any outputs or findings from this modeling effort fundamentally flawed. The failure to accurately represent the EJ ask in the model invalidates the results and dismisses the concerns of the communities that are most affected by these policies.

Third, despite the major flaws in the ISOR modeling of the EJ Scenario, Staff fail to include an updated EJ Scenario in the 15-day. Instead, Staff provide multiple "uncertainty" scenarios, including two that project CARB failing to meet its own ZEV regulations. None of the scenarios model outcomes that exceed the ZEV goals, despite current light-duty ZEV penetration

[39] *See* Stanford CEPP May 2024 LCFS Comments, available at https://ww2.arb.ca.gov/form/public-comments/submissions/12056.
[40] CEC, Zero-Emission Vehicle Sales Remain Strong in California (May 2024) https://www.energy.ca.gov/news/2024-05/zero-emission-vehicle-sales-remain-strong-california.

rates surpassing the mandated targets. This omission reflects a lack of commitment to the aggressive pursuit of electrification that EJ groups have been advocating for and that the current market trends clearly support.

Given these significant issues with Staff's deficient analysis, we urge the Board to direct Staff to conduct a new and accurate EJ modeling effort that reflects the actual proposals of environmental justice and environmental stakeholders. This updated modeling must take into account the actual impacts of increased funding on ZEV penetration and must adhere to the stakeholder proposal to cap bio-based diesel volumes at 2022 levels. Staff's failure to do this modeling in the 15-day package not only misrepresents the potential outcomes of the LCFS but also marginalizes the communities that the EJ Scenario program reforms seek to protect.

We respectfully request that the Board demand a higher standard of accuracy and accountability in CARB's EJ modeling, ensuring that the policies and projections put forward genuinely address the needs and concerns of the most impacted Californians.

VIII. CARB appropriately remedies the program's past failure to properly credit fixed guideway systems; CARB should further boost transit by including credit multipliers for transit.

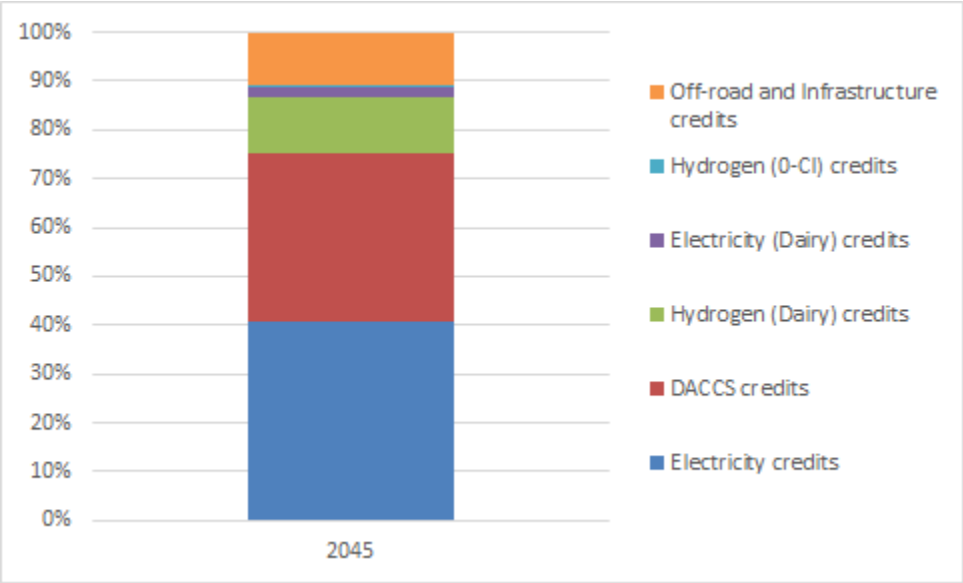
We applaud Staff's proposal to remove the pre-2011/post-2010 delineation for fixed guideway system crediting. We agree that this adjustment improves LCFS support for transit services in California. This is a positive step that corrects a prior CARB error. CARB should maintain this improvement in the final rule. It should also take additional steps to boost to transit by also including credit multipliers, as we describe in our ISOR comments.[41]

IX. Staff fail to disclose the program's heavy reliance on direct air capture, which benefits out-of-state companies and fossil fuel producers to the detriment of low-income Californians and with dubious climate benefits; CARB should prohibit the use of direct capture as a transportation offset in the LCFS.

Despite the concerns that we expressed in the Community Workshop about CARB's reliance on direct air capture (DAC) as a fossil fuel offset and the lack of transparency about this reliance, CARB has not been forthcoming about the significant feature of the proposed amendments. In the 15-day package, DAC will account for 35% of credits by 2045. This portion is almost as large as electricity credits, as illustrated in Figure 3.

[41] *See* Earthjustice Comments on ISOR (Feb. 20, 2024) at 32-38, https://www.arb.ca.gov/lists/com-attach/7077-lcfs2024-Wz4BZgd0BCNVOwJo.pdf.

Figure 3: LCFS Credits in 2045



Data Source: CARB[42]

Nowhere in the ISOR did CARB explain that a large portion of LCFS credits would eventually come from DAC projects. We only discovered this fact when we obtained access to the modeling two months after the close of the ISOR comment period and one day before Staff's April workshop.

The lack of disclosure is deeply concerning because offsets have long been a contentious issue in the Cap-and-Trade program, allowing industry to continue to pollute by paying their way out of reducing their GHG emissions. In the LCFS, the same concerns apply: DAC projects function as an offset for polluters, and they generate LCFS credits even though they do not require fuel production.

Even worse, while CARB limits the use of offsets in the Cap-and-Trade program, it does not do so in the current LCFS proposal. DAC projects are not evaluated against a declining benchmark, so there is no end to the subsidy as long as the LCFS exists. This treatment of DAC stands in sharp contrast to actual transportation fuels, where each gallon of low-carbon fuel gets fewer credits each year as the LCFS benchmark declines. The result is that DAC will get ever-increasing shares of the LCFS, essentially transforming the LCFS into a program where the most vulnerable (i.e., those who cannot transition to ZEVs) are paying for out-of-state, climate-dubious DAC projects that will profit industry

Additionally, unlike the other provisions in the LCFS proposal, DAC projects are not prohibited from double-counting emissions reductions. While the proposal includes language that prohibits LCFS credit generation for environmental attributes claimed "in any other

[42] Figure created from CARB modeling tables provided with 15-day changes, available at https://ww2.arb.ca.gov/sites/default/files/2024-08/15Day_Proposed_9step_30_final_posted_0.xlsx

voluntary or mandatory program" with few exceptions, this language does not cover DAC projects. This will allow DAC projects to sell the environmental attributes multiple times, thus getting paid multiple times for the same emission reductions, such as through the LCFS and voluntary markets.

We urge CARB to fully disclose Staff's proposed reliance on DAC and to prohibit the use of DAC as a transportation offset in this program, or at the very least set limits on credits and prohibit double-counting.

CONCLUSION

We look forward to continuing to engage in the LCFS rulemaking process and working with Staff to ensure the program avoids perverse and harmful outcomes and provides needed support to the technologies that will enable achievement of California's climate, air quality, and equity goals.

Sincerely,

Sasan Saadat
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APPENDIX A:

MAY 30, 2024 PEOPLE'S WORKSHOP MATERIALS

The People's LCFS Workshop - Questions & Answers

The May 30th People's LCFS Workshop featured a Questions & Answers session, in which panelists with diverse backgrounds and expertise responded to questions submitted by workshop attendees.

1. **Q: CARB staff claims that their proposal provides greater health outcomes for frontline communities (with 80% of funds invested in biofuel production) than the EJ proposal that would cap biofuel production, eliminate avoided methane crediting, and invest far more in electrification. What is your response to this?**

   Amelia Keyes with Communities for a Better Environment answered, *"I want to start by emphasizing that from the perspective of refinery communities, the benefits of biofuels are really not meaningful at all compared to fossil fuels like diesel. Something that people might not realize is that biofuels and fossil diesel are really similar products. They're refined using similar processes, they release similar pollutants during refining and they're burned in vehicles the exact same way. The benefits that CARB is touting from its proposal for the LCFS are really quite minimal in terms of air pollution benefits, and they're not going to meaningfully alleviate the pollution burden that exists in refinery communities. The other thing I wanted to note quickly is that CARB also isn't accounting for this scary reality that we're seeing, where biofuels are providing an opportunity to oil refineries to basically have a new life, where we expect to see refineries coming offline in coming years. Biofuels create a way for oil companies to keep using this otherwise defunct infrastructure and the consequences of that for refinery communities and community health and safety are really profound."*

   Dr. Jeremy Martin with the Union of Concerned Scientists also shared, *"I'm calling for [the] stop of unsustainable growth of diesel. In Alternative One, in the EJ scenario, actually modeled something more extreme, which is the phase-out of these fuels and then replacing them with fossil diesel. There's a lot of room to check the growth and avoid these unsustainable outcomes without completely reversing course, and getting rid of those fuels. But we've not required big increases in the use of fossil diesel, or anything else, which is maybe suggested… by the way that Alternative One and other things were constructed in the analysis."*

2. **Q: It is great to have such terrific academic leaders from Stanford and UC Davis working on the LCFS. We need these great institutions now more than ever given the serious deficiencies in the current trajectory of the program. The question I have is why is there such resistance to a cap on crop-based biofuels? Given your research, it would take some effort to implement, but this seems like a political problem, not a technical problem.**

   Sasan Saadat with Earthjustice shared responded, *"Part of the reason that there's resistance to a cap is for good reasons, maybe reasonable reasons around differences of opinion about what we expect to happen. But I hope that through this workshop, you can see that the current trajectory and the very recent history of a massive surge of*

crop-based biofuels is already showing us that we need to take much more significant action. We're seeing a huge surge of crop-based fuels into the program. The other reason for resistance might be this feeling that if we don't use crop based biofuels, then we would instead be using fossil fuels. We've heard that a lot from CARB staff –and to that, our point would be what we've been trying to say for three-plus years (over the course of this rulemaking)… it should not be accepted as a given that biofuels are better than the petroleum that they displace. Subsidizing continued, unrestricted growth of biofuels consumption has very real harms for the program in terms of dampening credit price, but also, it has really real harms for food insecurity, deforestation, water, and ecosystem impacts. None of these concerns are really accounted for through anything more than that over a 10-year-old ILUC adjustment factor that's clearly not that successful at keeping crop-based biofuels off the program."

Dr. Colin Murphy with UC Davis shared, *"I agree that politics is probably part of it. Possibly even the largest part of it and there's certainly a lot of companies out there who are looking to benefit from this. But beyond that, understanding these systems requires a lot of complex research and modeling and the data that really showed us conclusively that the market dynamics in the LCFS had shifted were really only available to us [at the] very end of last year and early this year. To some extent, renewable diesel has for a long time been one of the success stories, but we're hitting a spot where we've got too much of a good thing. Some of CARBs modeling has just not kept up with that because they probably didn't really have the resources to update their model and change their opinions. Then there's mental inertia that takes over from that where it's difficult to take something that has been a success for a long time. Then start saying, no we need to tap the brakes now, but that's just the nature of the space we're working in. When you are trying to transform a market like the California fuels system, things are going to change. That's just the nature of what we're trying to do. So the analysis [CARB does] has to keep up with it. And I just don't think it really has."*

Dr. Martin added, *"We have to learn from experience and experience shows that we have a problem, and we need to fix it. The mechanisms that are in place are not working, so we need to do something different."*

3. **Q: The current LCFS proposal will continue to significantly focus on funding for combustible fuels for more than a decade. Do communities see commonalities about the health harms that communities are facing from this continued focus of the LCFS?**

David Rodriguez with Defensores shared, *"There still needs to be more studies done and that's what [CARB doesn't] admit to. The rhetoric is completely in favor of dairies and they forget about the communities because you have the methane, you have your nitrates, you have the pollution that affects the communities. And as far as I'm concerned, the [San Joaquin Valley Air Pollution] Control District and CARB have ignored us for years and years and there must be a reason. The odor filters through town – [which] is a little bit over 4,000 [people] and the dairy has over 8,000 cows less than a*

mile away. There needs to be more [studies done, and] more strict rules and regulations for these dairies. They're getting bigger and bigger, and they're getting subsidies from California. They're making more money, selling manure, methane, and milk so it's a win/win for them. But it's a [loss] for us. And that makes it harder for communities, especially rural areas, [and] people of color."

Jovan Houston, an employee at LAX, answered, *"Looking back, I'm one of the [many] examples in our community. Our communities are predominantly Black and Brown and we suffer a lot from this pollution in my neighborhood and other neighborhoods. Within a five-mile radius, we see dialysis facilities. Those are common in my neighborhood. We live with this and I'm sure other communities around any airport suffer."*

4. **Q: Staff have said there is no evidence that the LCFS incentivizes the consolidation of dairies. Have you asked Staff for their data on this issue? And, what is your response to this evidence they provided?**

   Phoebe Seaton with Leadership Counsel for Justice & Accountability (LCJA) responded, *"In the presentation, I showed data from USDA's recent census showing that concentration of… more cows in the San Joaquin Valley in larger farms, also the [region] of factory farm/gas infrastructure. [LCJA] and Food and Water Watch sent a public records request to CARB asking for records in CARB's possession that showed that the LCFS does not cause dairies to increase in size. The response to that PRA was that CARB has completed its analysis of documents and there are no documents responsive to the question, meaning CARB had no analysis, had no records, etc., supporting its claim that the LCFS does not cause dairies to increase in size. CARB has at its disposal several tools [to address livestock methane], most notably, its authority and responsibility to develop [a] regulation for livestock methane."*

   a. **Q: If we eliminate avoided methane crediting in LCFS, won't this lead to far more methane emissions and a failure to meet climate goals?**

      Phoebe also clarified, *"CARB has the authority and responsibility to implement regulations for livestock methane. They have not even begun the process to develop… or adapt those regulations. That is a process that we need for a vast array of stakeholders to inform what effective and equitable methane emissions reductions looks like."*

5. **Q: CARB staff claim that limiting biofuels leads to more fossil fuel consumption? Why would EJ and environmental groups call for this?**

   Dr. Michael Wara with Stanford University answered, *"It really depends on your view of the future and what is possible. What we're observing in the markets today is a rapid rollout especially of medium-duty vehicles that far exceeds what ARB expected to be possible. I would also emphasize what matters for climate change and for the performance of the program or total use of fossil fuel emissions over the length of the program, not what happens next year or the year after, but cumulatively. We believe that*

it's absolutely possible given the rates of rollout and the growth in the use of EVs to achieve a scenario that is of reasonable cost that doesn't involve greater combustion of fossil fuels. You can certainly make the modeling look as if more fossil fuels will be combusted, but that's really a function of assumptions. Our view is that the assumptions ARB is making are far too conservative and do not really reflect the facts as they are today."

Dr. Murphy added, *"A lot of the assumptions that CARB makes really presuppose that any alternative to petroleum is necessarily better than petroleum. We are reasonably confident right now that things like renewable diesel that we're making from wastes and residues, used cooking oil, are better than petroleum. They're not a zero-carbon fuel, but they at least move things in the right direction. We even think that there's a role for a very limited amount of crop based fuels to at least be no worse, maybe marginally better than the petroleum gas bases. The problem is that the market is growing extremely rapidly and all of the modeling that we base these assumptions on was really envisioning a much smaller market than we have today. So our confidence that these things are truly going to continue to be better than petroleum is not based on strong evidence. The kind of market size that we're at today is certainly not at the kind of market size that would result if we continue this rate of growth. I also wanted to confirm that the modeling that we've done here at UC Davis shows that you can freeze the growth of things like renewable diesel at levels we're using in 2022. It is still completely compatible with California's carbon neutrality over the long run and tries to find that middle ground, where you are taking whatever near-term benefits you can get out of bridge fuels like biofuels, but not putting so much investment into them that you miss out on opportunities to invest in the things that give better long term outcomes."*

6. **Q: The current LCFS provides significant and lavish incentives for many biofuels, yet CARB staff say their proposal will boost ZEVs. Do you agree?**

   Román Partida-López with The Greenlining Institute responded, *"Based on the research analysis that [we've] done here, I think we're gonna fall short in making that transition. Boosting is not what we're going to be accomplishing. We might be supporting, which is [the] language I found in some of the reports and presentations put together, but it will not boost the transition to zero-emission vehicles. We're falling short. The credit structure that we have is not done in a manner that will help accelerate the transition that we desperately need for the air quality and public health benefits that our impacted communities need to see. The budget right now is in a deficit phase, and so we need other structures like the LCFS to step up and [help] this transition. To make the transition, we need to lean in and move away from this conservative approach that CARB generally takes. They talk about wanting to really uplift and center equity in their policies and in their implementation, but then that's not reflected in what we end up seeing in print with the guidelines that are developed."*

7. **Q: It has been mentioned that biomethane makes up about 20% of the credits in the program but only 1% of the transportation fuel. How is that possible and why is that a problem?**

   Sasan shared, *"It's true! The reason is biomethane from livestock gets this very unique treatment, where the baseline considers that methane will be vented. In other words, the polluter is free to vent their methane into the atmosphere, and that they would do so BUT FOR the LCFS. That unique treatment, that unique assumption, allows it to receive a negative carbon intensity (CI) score, sometimes very significantly carbon negative CI score. It effectively works as an offset because it's not anywhere in the chain of producing biomethane [that] we're actually removing carbon from the atmosphere. This is not actually carbon negative. It's not actually carbon dioxide removal or direct air capture. It's just based on the fact that the methane pollution is unregulated. The LCFS treats that as absent and because methane is such a severe global warming pollutant, very little methane capture and very little biogas in the transportation sector can equate to very significant credit generation. [It is] no wonder then that the oil companies have become some of the biggest investors in these biogas projects. It allows them to effectively offset a very significant amount of their deficit obligation without very significantly eroding their own market for fossil fuel. If we had to eliminate that equivalent of credits through direct electrification, that would be a much larger amount of fossil fuel that we deal with."*

8. **Q: The staff of CARB claim significant air quality benefits from the LCFS proposal. What is your response to that?**

   Sasan explained, *"The air quality benefits - it's about [$]5 billion in estimated health benefits from the Low Carbon Fuel Standard. To put that in perspective, CARB could have gotten more significant health savings by passing a slightly stronger forklift rule or a slightly stronger off-road engine rule. These are not very significant health benefits that are being generated from the LCFS. It's even worse when you account for the fact that most of the air quality benefits are attributed to biofuel use. [And] we have very seriously questioned CARB's methodology for attributing that air quality benefits to those biofuels. In many cases, CARB is taking credit for biofuels that are required from the Federal RFS. Even though in 2018, it apportioned only its share of air quality benefits to the state versus the federal program. It's claiming air quality benefits from programs that already are requiring the use of renewable diesel in the off-road sector and so not only are these [$]5 billion in health benefits likely illusory or overstated, but they're not very much to begin with. The program could be doing significantly more if it reoriented itself toward zero emissions to get much greater NOx [reduction] benefit and much greater PM reduction benefit.*

9. **Q: How do we balance getting higher credit values, a clean capacity crediting program, and getting quick action to support zero emission medium-duty/heavy-duty with the Fix LCFS coalition?**

Dr. Murphy explained, *"The LCFS is intended to let regulated parties find the lowest cost option and that's what they're doing when there's this glut of cheap biofuels. Really, the only way, absent going to completely an entirely different policy, to bring the credit price back up is to limit the availability of this particular cheap option. By doing something like putting a cap on it or updating the indirect land use change factors, that Sasan mentioned, which I believe are out of date –they're 10 years old– and the model that was used was shown to be quite problematic. As long as the low-cost option is there, the market is going to gravitate towards that. We either have to sort of accept that's the outcome or change the program to cut that off. Within the context of the rulemaking that's open right now at CARB, they could adopt something like a cap on either crop-based biofuels or alternative-based biofuels. There's technical reasons to prefer one or the other. Even if we don't think that might be the optimal long term solution. At the very least, that [cap] can put a pause on things right now and buy some time to develop what might be a better long-term solution. But either way, if you can't restrict the ability of renewable diesel to continue being the low-cost compliance option, the market is going to go there. That's what the program is designed to do."*

10. **Q: If CARB doesn't fix the LCFS what are the worst consequences for communities based on the incentives to accelerate biofuel and biomethane production in California and across the country, since half of all renewable diesel business in the US is already coming to California?**

    Phoebe answered with, *"I hate to think of the worst case scenario. What we're going to see is continued entrenching of or exacerbating the environmental justice impacts of the trend towards further consolidation and expansion of livestock facilities to encourage, promote, [and] increase the production of methane. On one hand, [there is] the really disastrous… groundwater quality and odor impacts of that. On the other hand, [there] can be increased ability of polluting fuels to greenwash, through an accounting trick called "avoided methane crediting," which could then extend indefinitely. That kind of use and reliance on polluting fuels also impacts air quality throughout areas much beyond the San Joaquin Valley. Darvin spoke about how the current LCFS, with respect to biomethane, also really puts a thumb on the scale… for the most environmentally polluting practices and discourages reliance on more sustainable farming practices, so seeing more and more disappearance of smaller sustainable farms. Finally, I'm very concerned that it will also further pigeonhole us and keep us from developing an effective and equitable framework both on the livestock side to create a regulatory framework that works for all Californians and the country and a move towards actually clean energy vehicles."*

    a. **Q: If you don't want the LCFS to incentivize digesters, are you saying you prefer big dairies to just vent that methane into the atmosphere?**

       Phoebe responded, *"No. As we discussed earlier, what we look forward to is a multi-stakeholder… open discussion process to develop effective and equitable*

regulations to address the ongoing catastrophe of methane pollution, but also water and air quality pollution from livestock operations."

Leslie Martinez with Leadership for Justice & Accountability added, *"The other thing that's really important to know is that factory farm gas is still combusting. They're still pollutants that come from it. And when you are further delaying the part of California that has the worst air in the entire state, it's like a death wish… They're still going to be dependent on this contaminant in their community and further put the San Joaquin Valley at the end of the decarb[onization] line instead of really prioritizing the communities that we work with. So no, we don't want more!*"

11. **Q: What are the other fuel pathways that folks have concerns about?**

Sasan shared, *"Unfortunately, we and the EJAC have some really significant concerns as well about the role that carbon capture and direct air capture play in this program. Folks may know the legislature recently passed a law, thanks to a lot of environmental justice advocacy, prohibiting the use of carbon capture for enhanced oil recovery in California. Yet CARB is not going to ban that same practice, from generating credits so long as that enhanced oil recovery occurs out of state. This is a really big problem. The legislature in California has said enhanced oil recovery is not a real climate solution. We don't want it to happen. We'd like to ban it. Maybe even more concerning than that is the massive and really under-scrutinized role that direct air capture is poised to play under the current proposal. Direct air capture is an offset. In cap-and-trade, it's an offset. But in the Low Carbon Fuel Standard, unlike in cap-and-trade, there's actually no limit on how much DAC offsets can be used in the program. What we've seen in CARB's modeling is that when direct air capture comes online, fossil fuel use increases and that it just runs completely counter to our air quality, our climate, and RSF goals. It's really damag[ing] to the policy discussion that CARB hasn't talked about this at all. We've really only found out about it by digging into the data that we requested six months ago, and that was just released in April. The IPCC and others agree that there's a need for direct air capture in meeting our climate goals. They're very clear and they strongly advise against using it as an offset for continued emissions, especially in a sector like on-road transportation, which we know we need to get to zero. CARB needs to do what it's doing in cap-and-trade at a minimum here. It should prohibit the use of direct capture as a transportation offset in this program, or at the very least set limits on credits through this pathway."*

12. **Q: What should be the cap on biofuels? What would the timeline look like for phasing out biofuels?**

Dr. Martin shared, *"We tried to figure out what's the kind of reasonable amount of lipid based biofuels in California, you'd probably come up with a number that's much smaller than the amount that California is already using. Capping it where we are would be a lot better than letting it go another 2%. The tightest cap possible is the best answer. About 2 billion gallons is where we are now. It would be better to not get to 3.5 billion gallons,*

which is where we could be headed. Leasing it out is what's described in some of the regulatory proposals. The original vision of LCFS was to limit crop-based fuels in favor of cellulosic and other biofuels. We haven't seen the progress that we'd like there, but frankly, we're never going to see the progress if we tell people who are working in that space, "You're competing against a billion gallon a year existing oil refinery that just orders a tanker of soybean oil from Argentina." They can't compete against that. So to foster innovation and scaling up of preferable alternatives where we're not over taxing the resources, a cap can really help."

13. **Q: When the LCFS subsidizes diesel biofuels in California, doesn't that force refineries to phase down production? Where do they export their petroleum diesel?**

    Dr. Murphy responded, *"To some extent, the California refineries are likely and probably are already exporting more diesel to other markets. Some of those might be exporting elsewhere in the US or might be exporting to Latin America or Asia. To some extent, petroleum refineries and biofuel refiners get to control what comes out. A refinery takes big, complex crude oil or vegetable oil molecules and breaks it down into a variety of smaller molecules. They can decide whether they want it to come out as… diesel-type fuels or jet fuels. We're probably going to see some of the California refineries pushing out more jet fuel or more gasoline instead of diesel because the local markets prefer diesel... Over the long run, there's no future in which we meet our climate obligations of cheap carbon neutrality and still refine any massive amount of petroleum in the future. The industry does need to think about what an orderly, just transition and phase-down looks like. Exports to other markets can be a temporary solution here and there, for part of it, to make sure an orderly phase-down [occurs]."*

    Dr. Martin added, *"This renewable diesel boom that's happened in the last three or four years, it wasn't the intended or anticipated strategy. The fact is that we've seen, a number of years ago, we had better substitutes for gasoline; diesel was harder. We might have expected to see gasoline fall faster than diesel and because of this huge surge in renewable diesel, it has gone the other way. In fact, in the last three years, the ratio of gasoline and diesel consumption has really gotten lopsided in California and that does create the need to import lots of feedstock to make renewable diesel. To export the fossil diesel that refineries can't produce creates a lot of extra ports movements... I think it points to the limitation of a kind of hands-off technology-neutral approach, right? This is not a strategy that's working out well in California. It's causing problems in lots of different ways. It makes sense for the regulator to [seek out] a more balanced approach where we have some renewable diesel, but not so much that it upsets global vegetable oil markets and California fuel markets. That would just be a wise strategy that would limit risks in lots of different ways for the state."*

14. **Q: Can you elaborate on how fixing the LCFS will help make energy more affordable for everyday Californians by shifting resources from out-of-state biofuel producers to investments in state electrification?**

Sasan shared, *"This much CARB really agrees with: transportation electrification lowers the costs of transportation. It has that potential because it avoids the very high fuelling and maintenance costs that come from combustion cars. Even CARB acknowledges that LCFS funds transportation electrification, and that will over time lower overall transportation costs. We need to pay attention to the distributional impacts. Right now, mostly affluent people can afford EVs and mostly low-income folks are still required to use combustion vehicles. The LCFS has real passthrough costs on to the cost of fuel at the pump. It's not necessarily currently being leveraged in a way that is progressive. In fact, it's somewhat regressive. However, if you diverted those funds away from things that increase the cost of combustion fuel towards things that actually help us get off of fossil fuel [it can] help get low-income passengers into zero-emission transit or zero-emission vehicles. You would have then in theory a progressive program and the LCFS could do that by amplifying the amount of funding it diverts towards transportation electrification. A big problem right now is that the upfront costs of EV infrastructure and the grid upgrades that are needed to expand that EV infrastructure are still significant. Right now they are actually borne by rates. Now electrification of transportation can lower rates overall because it means we will be utilizing the grid more efficiently; spreading more electricity use over the same amount of grid assets will lower electricity rates, but upfront it does have a pretty significant cost and has an upward rate pressure. If instead we can upgrade the grid, upgrade our distribution system, build out that charging infrastructure with the LCFS, with funding from this program, that would take a lot of pressure off of rates. It would mean that you would basically find this new funding stream for the upfront capital costs, and then help incentivize a shift to the transportation modes that are most cost-saving. So beyond just preventing us from wasting our money basically on out-of-state biofuels and biomethane, the things that don't help with our transportation goals, restricting the bogus credit generation can lift the credit price and the EV subsidy without needing to increase the stringency of the program. You created a way to make the program less expensive, more effective, and offload pressure on rates so you're able to reduce the cost of transportation and reduce the cost of electricity bills, if you reform the program that way."*

15. **Q: Wouldn't CARB be in a better place to ask other agencies like EPA and the South Coast to do more if it were willing to model good behavior itself by making tough decisions using the LCFS to drive deeper NOx reductions through zero emissions?**

    Sasan answered, *"Yes! The South Coast Air Basin has not met [and] it continually fails to meet its Clinton era ozone standards, and now it's on the verge of these federal sanctions. CARB is asking other agencies like EPA to do a bunch more to tackle NOx in the region. It's really unreasonable to say that it's turned every stone that it has available to it when it has this $4 billion program that sends 80% of its credit value towards combustion fuels. It could be driving much deeper NOx reductions if you set these restrictions on how you generate credits. It would be unleashing a huge new torrent of funding towards things that really slash deeper NOx reductions, if you made the program more intentionally focused on zero emissions."*

The People's Workshop

Fixing the Low Carbon Fuel Standard to benefit all Californians.

May 30, 2024

AGENDA

- **Moderators:**
  - **Dr. Catherine Garoupa**, Central Valley Air Quality Coalition and Environmental Justice Advisory Committee
  - **Andrea Vidaurre**, People's Collective for Environmental Justice
- **Opening Keynote:**
  - **Leslie Martinez**, Leadership Council for Justice and Accountability
- **Panel # 1:** “Harms of the Current LCFS”
- **Panel #2:** “Importance of Funding Electrification”
- **Video Presentation:** “Our Clean Air Vision”
- **Community Comment Period**
- **Q&A Session**
- **Closing Keynote:**
  - **Andrea Vidaurre**, People's Collective for Environmental Justice

Support for our recommendations to fix the LCFS.

As seen in

San Francisco Chronicle

#FixLCFS
FixLCFS.com

OUR GOALS

LIMIT POLLUTING BIOFUELS: Putting a limit on renewable diesel derived from vegetable oil and animal waste will get the credit price under control and shift investments toward pollution-free, electric infrastructure.

REGULATE AVIATION FUELS: Cutting methane credits will stem the perverse incentives that entrench and even increase pollution in communities living near factory farms and shift investment toward pollution-free fuels.

ELIMINATE AVOIDED METHANE CREDITS: Eliminating avoided methane credits will stem the perverse incentives that entrench and even increase pollution in communities living near factory farms and shift investment toward pollution-free fuels.

PRIORITIZE INVESTING IN ELECTRIFICATION: Currently, only a fraction of the incentives are going toward zero-emissions fuels. At a time when the state is cutting critical public EV incentives and infrastructure funding (now and projected for years to come), the LCFS could be a lifeline for ZEV investments.

#FixLCFS

Panel #1: “Harms of the Current LCFS”

- **Phoebe Seaton**, Co-founder and Co-executive Director of the Leadership Counsel for Justice and Accountability
- **Jovan Houston**, member of the Service Employees International Union and works at LAX
- **Amelia Keyes**, Attorney & Legal Fellow at Communities for a Better Environment
- **Dr. Jeremy Martin**, Senior Scientist and Director of Fuels Policy for the Union of Concerned Scientists
- **David Rodriguez,** Defensores del Valle Central para el Aire y Agua Limpio

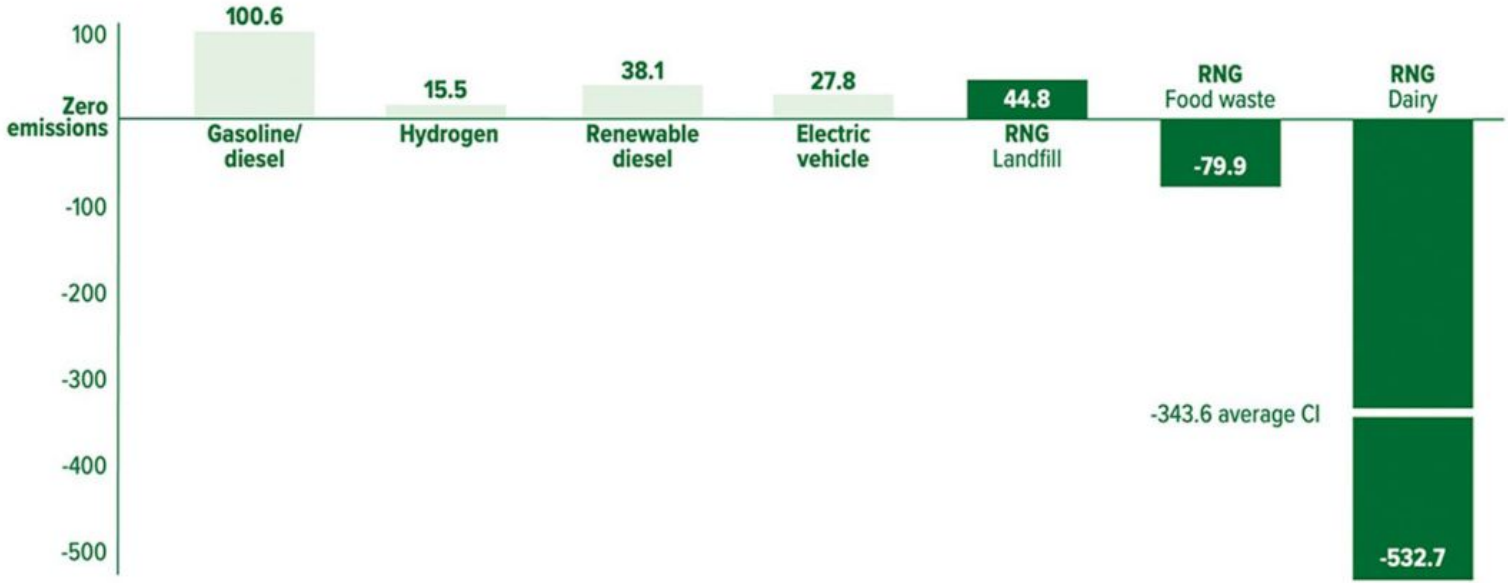
The Low Carbon Fuel Standard: An unmitigated Environmental Disaster

Phoebe Seaton

Co-founder and Co-executive Director of the Leadership Counsel for Justice and Accountability

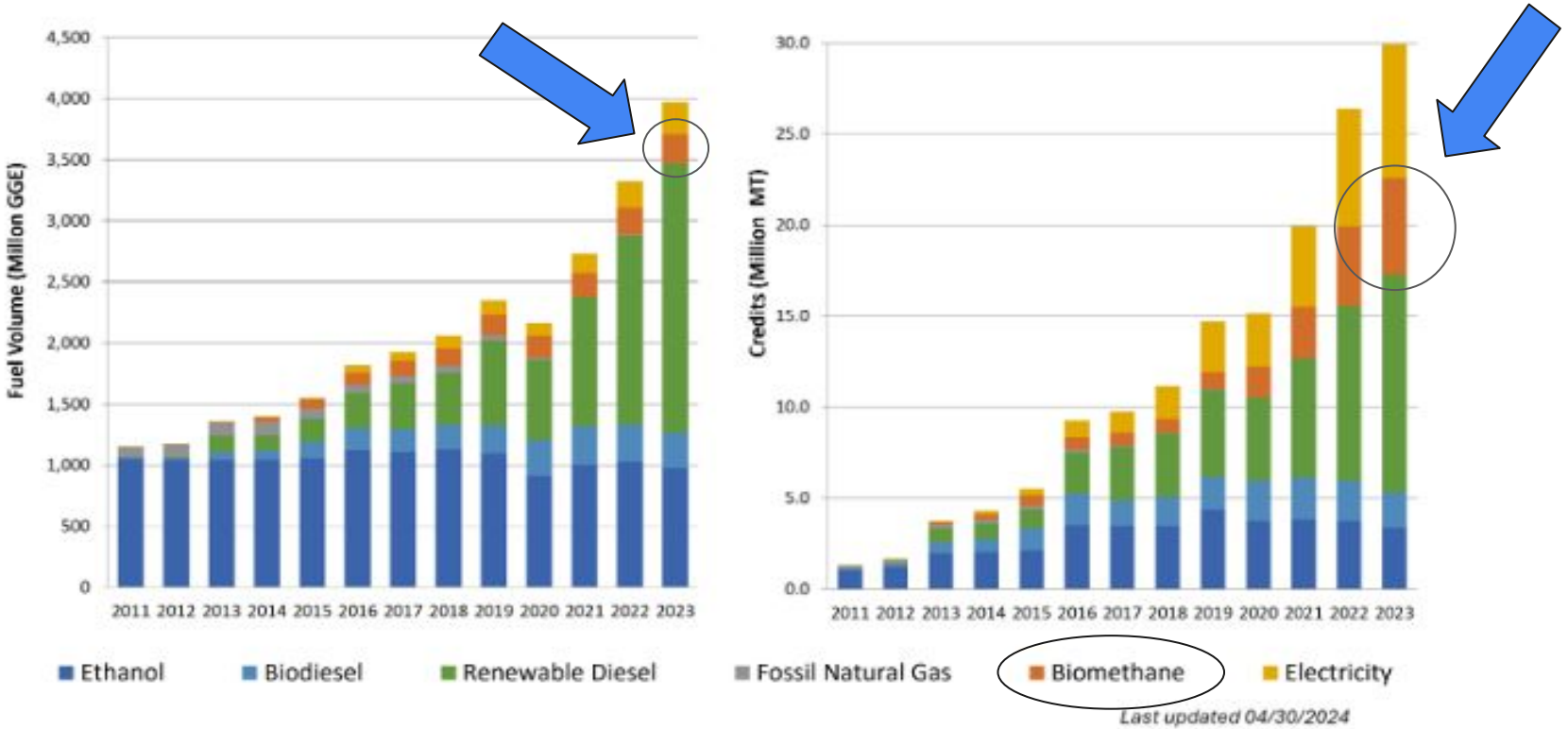
RNG is the lowest carbon alternative fuel

Carbon emission by fuel type (gCO_2e per MJ)



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

Alternative Fuel Volumes and Credit Generation



Hoard's Dairyman

"The profit generated by manure and energy is a new dynamic... The profits from manure-generated energy could likely exceed the profit from milk. **At that point, milk has become the by-product of manure production.**"

– Michael McCully
Dairy industry consultant

The Guardian

"Once you pay a cattle producer for their manure, you are effectively subsidizing the production of that manure. **You've altered the economics of cattle production.**"

– Richard Plevin
UC Berkeley researcher

The Scoop
Solutions For The Farmer's Advisor

"[I'm] seeing some of the most innovative dairy producers across the country who are less than two years away from **making more money off the carbon contracts they sell than the dairy products they produce**."

– Jeff Simmons
Elanco president and CEO

"...**revenue from methane capture alone** could, in some cases, make up **almost 40% of total profits** for mid- and large-sized dairy farms in California... this could end up incentivizing farms to **increase herd sizes to produce more manure**."

– Kevin Fingerman
California State Polytechnic University, Humboldt

Nitrate pollution in drinking water leads to birth defects, blue baby syndrome, diabetes, bladder & ovarian cancer.

- Most pollution from manure happens from land application of manure to fields; digesters do not improve and may exacerbate nitrate pollution. ***More concentrated manure means more nitrate pollution***

Air pollution from large livestock operation causes severe health harm and even death. Ammonia from livestock kills over 1,000 people a year in the Valley alone.

- Digestion actually ***increases*** ammonia emissions

Odors and flies create severe mental and emotional distress. Researchers found significantly higher rates of stress, tension, and depression large livestock operations

- Residents report ***worse*** odors following the installation of digesters

The LCFS, Consolidation, & the Concentration of Pollution in the SJV (From the 2022 Ag Census)

⇧ **26.8%** on dairies w/ > 2,500 cows ; ⇩ **52.4%** on dairies w/ < 1,000 cows

Average herd size in CA ⇧ **13%** 2012-17; ⇧ **43%** from 2017-22

While **#** cows in California; ⇩ **# of cows in the SJV** ⇧

The SJV is now home to over **90%** of dairy cows in CA

Average herd size in the SJV grew from about **1,577** to about **2,052** cows

Seven SJV counties have **99.3%** of DDRDP-funded digesters
and **86%** of livestock manure LCFS pathways in CA

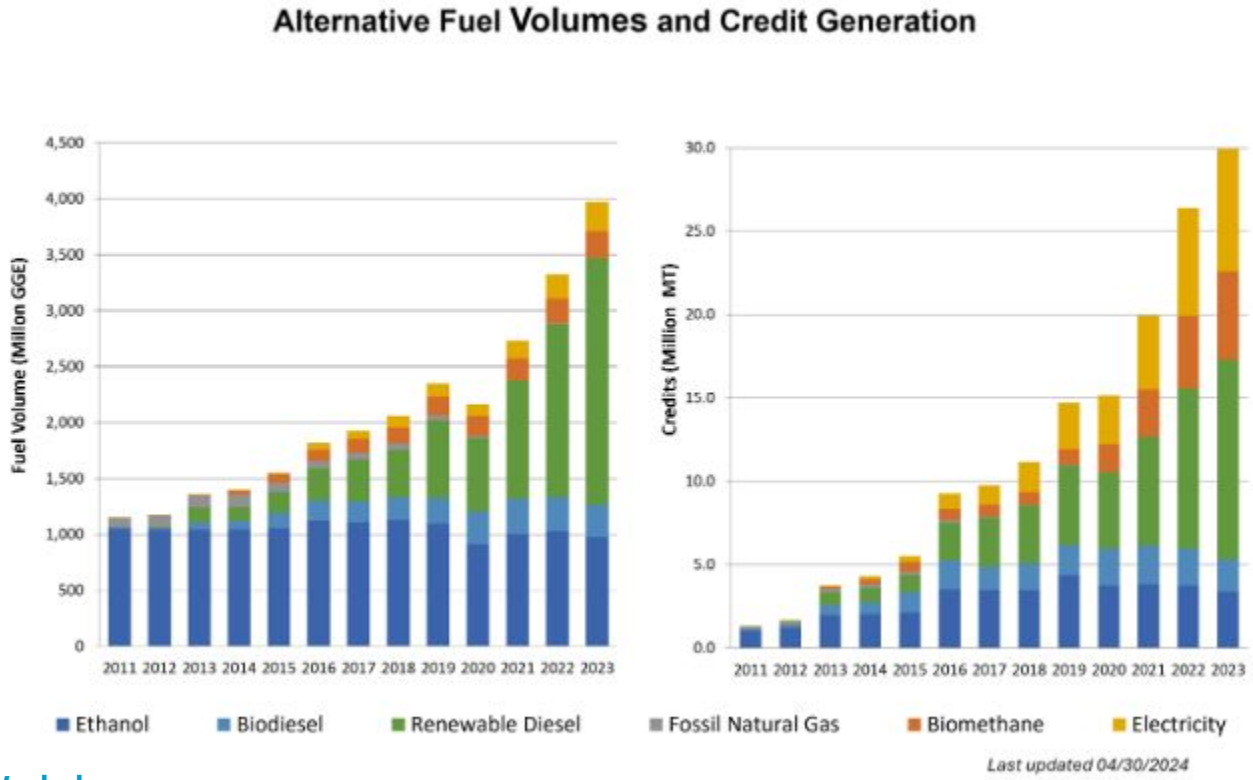
Van Der Kooi (Fresno) ⇧ **1,800** to **5,000** cows
Borba (Merced) ⇧ **1,650** to **6,100** cows animals.

California's renewable diesel boom is not good news for California, global food availability or tropical forests

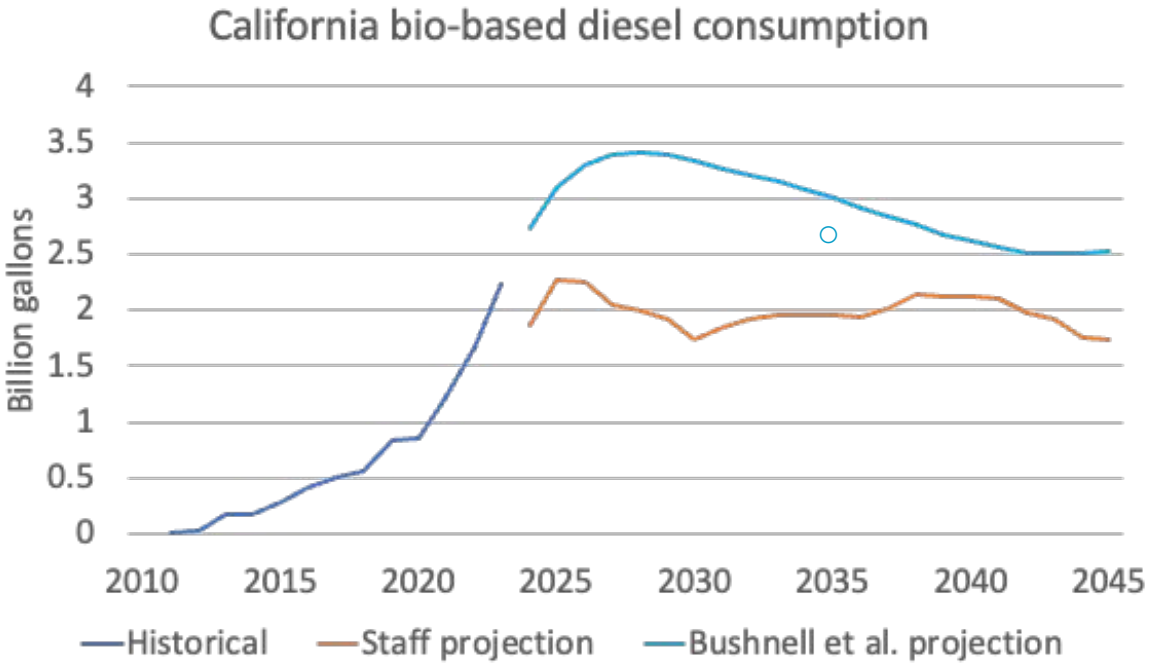
Jeremy Martin - Director of Fuels Policy, Sr. Scientist
Union of Concerned Scientists

May 30, 2024: People's LCFS Workshop

The renewable diesel boom was the primary driver of the LCFS credit market crash



Staff analysis assumes the renewable diesel boom will resolve itself. Experts from UC Davis and Berkeley disagree



Vegetable oil consumed for California fuel

2011-2020 < 0.1 MMT

2021 – 0.6 MMT

2022 – 1.0 MMT

2023 – 1.6 MMT

Global trade in soybean oil is ~12 MMT

Existing safeguards have broken down

- Prior to 2020, **disincentives** for crop-based fuels effectively **limited vegetable oil-based fuel** consumed in California
- In 2022, in the middle of a **global food crisis**, California consumed **a million metric tons of vegetable oil** for diesel fuel
- **Soybean oil** diverted from food to fuel gets **replaced in food markets by palm oil**
- Soybean and palm oil are **major drivers of tropical deforestation**

Vegetable oil consumed for California fuel

2011-2020 < 0.1 MMT

2021 – 0.6 MMT

2022 – 1.0 MMT

2023 – 1.6 MMT

Global trade in soybean oil is ~12 MMT

Stronger safeguards are needed

- **Existing safeguards are broken**
  - Expansion of vegetable oil-based fuels by major oil companies is not sustainable or scalable.
- **Sustainability certification won't work**
  - Using certified soybean oil in fuel markets won't address harm from uncertified soybean and palm oil that backfill food markets
- **Sensible safeguards are needed right now to limit unsustainable fuels**
  - Limiting bio-based diesel at the level CARB currently projects is likely will stabilize the LCFS, reduce the risk of food versus fuel conflict and deforestation
  - Limiting pathways is consistent with precedent and should be implemented now

Resources

- Everything You Wanted to Know About Biodiesel and Renewable Diesel. Charts and Graphs Included, January 10, 2024
- A Cap on Vegetable Oil-Based Fuels Will Stabilize and Strengthen California's Low Carbon Fuel Standard, January 30, 2024
- Something Stinks: California Must End Manure Biomethane Accounting Gimmicks in its Low Carbon Fuel Standard, February 15, 2024
- UCS Comments on LCFS Amendments, February 20, 2024
- Scientists and economists' letter on biofuels, February 20, 2024
- UCS Comments on April 2024 LCFS Workshop.pdf, May 10, 2024

Panel #2: “Importance of Funding Electrification”

- **Angie Balderas,** Digital Strategist and Communications coordinator with the People’s Collective for Environmental Justice
- **Román Partida-López,** Senior Legal Counsel for Transportation Equity at the Greenlining Institute
- **Sasan Saadat,** Senior Research and Policy Analyst at Earthjustice
- **Dr. Colin Murphy,** Deputy Director of the UC Davis Policy Institute for Energy
- **Dr. Michael Wara,** Senior Research Scholar with the Stanford Woods Institute for the Environment at Stanford University

2009: The Start of Low Carbon Fuel Standard

California adopted its LCFS in 2009, under then-Governor Schwarzenegger, with the goal of reducing transportation emissions.

In 2009, we believed:

- Biofuels and biogas viewed as main way to lower transportation emissions.
- Cellulosic biofuels “right around the corner.”
- Electric vehicles might play a niche role, only in the far distant future.
- Self-regulated markets responding to a price signal is the most efficient climate policy.

(Also in 2009…SONY sold 12 million floppy disks. TV Show Jersey Shore premiers. Blackberry becomes largest selling phone in U.S.)

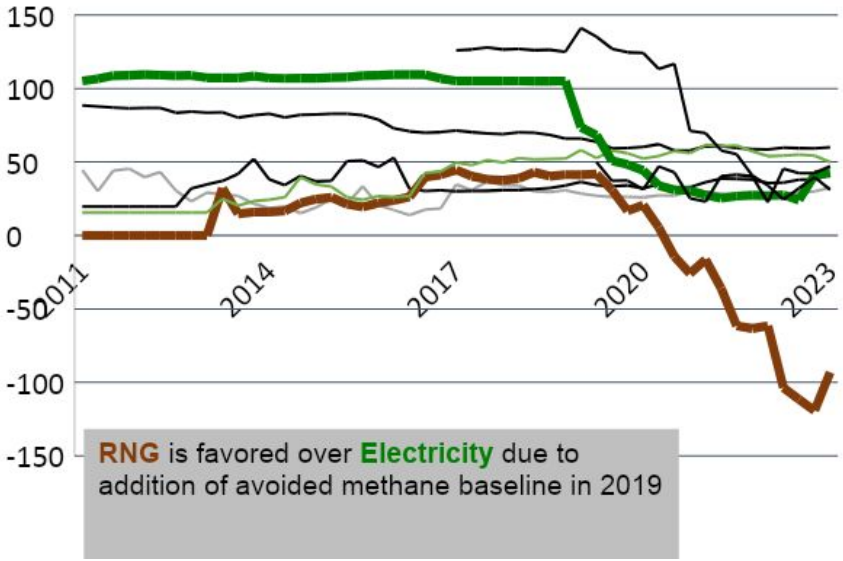
2024: A New Consensus – The Future is Electric!

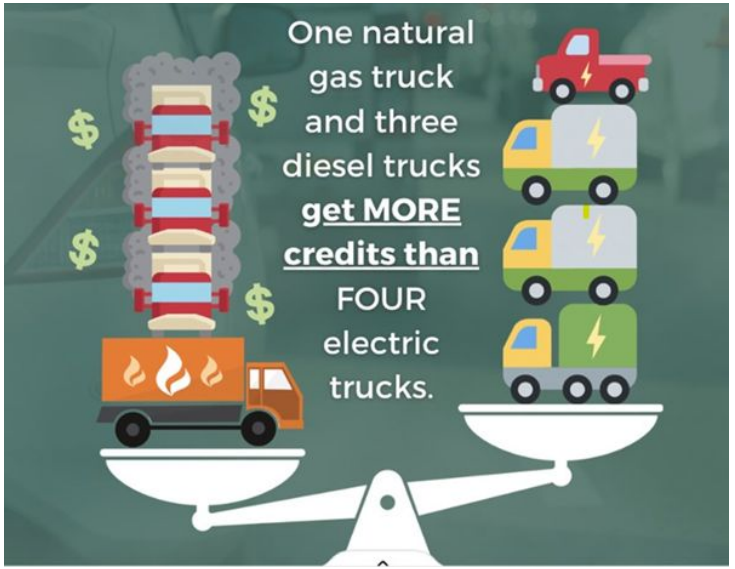
And California is a leader! Thanks in large part to our leadership, in 2024, the world agrees:

- All major decarbonization scenarios concur on need for rapid, widespread transportation electrification.
- 15 years of experience with biofuels make clear – diverting land to grow crops for fuel is a disaster.
- The best way to meet climate goals is by meeting our public health goals, and vice versa.
- Climate policy requires strong state capacity to guide investments toward the specific industries needed for a full energy transition. Desired outcomes for equity and health must be explicitly encoded into policy design.

The LCFS Favors Polluting CNG Trucks Over ZEV Trucks

CNG generate **more credits** while displacing less **fossil fuel.**





EARTHJUSTICE

The LCFS Favors Dirty Hydrogen over Green Hydrogen

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

Carbon Intensity = **0**
LCFS Credit Calculator: **$1.40/kg of H2**

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

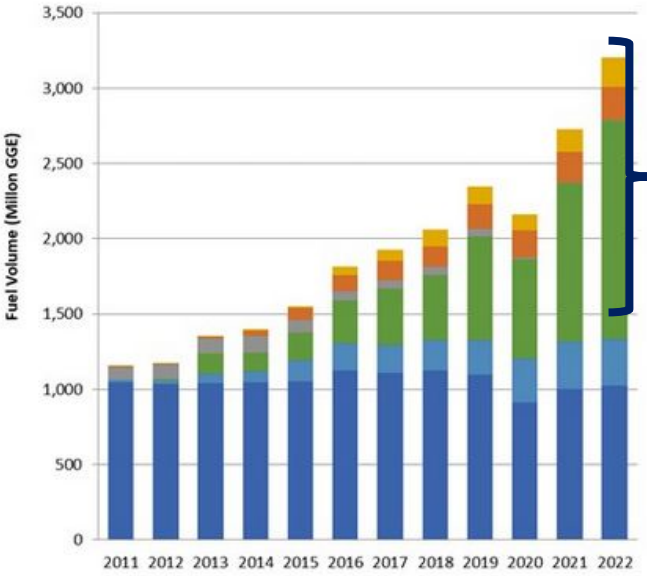
Carbon Intensity = **-287**

LCFS Credit Calculator: **$3.81/kg of H2**

EARTHJUSTICE

Significant Growth in Biofuels Undermines ZEV Goals

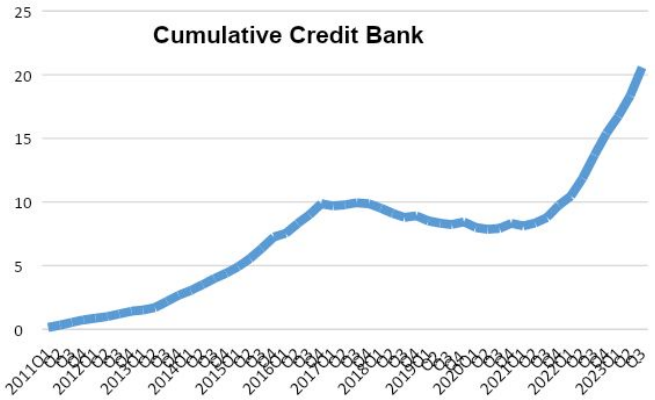
Alternative Fuel Volumes



RD and BD dominate the LCFS

Current policy distorts the market signal for ZEVs.

- 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.



EARTHJUSTICE

CARB Must Re-Focus this $4 Billion Program on ZEVs

- Grim budget make this an urgent time to prudently allocate LCFS credits.
- Restricting bogus credits can lift credit prices without needing to increase stringency (makes the program more effective and less expensive).
- Transit deserves additional crediting opportunity.
- 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

EARTHJUSTICE

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 credit multiplier.
- Unlock billions for transportation electrification without adding costs to consumers.

Our Clean Air Vision

Community Comments

Questions & Answers

Phase out funding combustion fuels. Invest more in zero-emission electric technologies.

LIMIT POLLUTING BIOFUELS: Putting a limit on renewable diesel derived from vegetable oil and animal waste will get the credit price under control and shift investments toward pollution-free, electric infrastructure.

REGULATE AVIATION FUELS: Including jet fuel will drive down pollution from one of the state's dirtiest sectors while supporting the program's overall goal of cleaning up all fuels.

ELIMINATE AVOIDED METHANE CREDITS: Eliminating avoided methane credits will stem the perverse incentives that entrench and even increase pollution in communities living near factory farms and shift investment toward pollution-free fuels.

PRIORITIZE INVESTING IN ELECTRIFICATION: Currently, only a fraction of the incentives are going toward zero-emissions fuels. At a time when the state is cutting critical public EV incentives and infrastructure funding (now and projected for years to come), the LCFS could be a lifeline for ZEV investments.

Thank you!

#FixLCFS

Visit www.FixLCFS.com to learn more.

Summary of the People's Low Carbon Fuel Standard Workshop

May 30, 2024

BACKGROUND

For years, environmental justice, labor union, and environmental advocates have warned of the Low Carbon Fuel Standard's (LCFS) negative impacts on communities across California and the country. Advocates and community members have rung the alarm bells in California Air Resources Board (CARB) workshops, hearings, and written public comments, only to be ignored, drowned out, or dismissed. As Leadership Counsel for Justice and Accountability's (Leadership Counsel) Leslie Martinez shared, ***"workshop after workshop, hearing after hearing, and meeting after meeting, going as far back as the Scoping Plan process, communities raised their experiences that the LCFS program was making conditions worse, not better."*** Researchers from UC Davis, Stanford University, and the Union of Concerned Scientists also raised fundamental concerns about the program's impacts and provided constructive recommendations for shoring up the credit price while also boosting zero-emissions transportation and creating better health outcomes in frontline communities.

CARB staff's proposed amendments risk worsening these impacts until 2045, prioritizing support for combustion fuels and undermining zero-emissions solutions that are critical to achieving the state's carbon neutrality mandate. According to Leslie, despite community advocates' engagement, the proposal indicated that "CARB did not care to respond to the voices of those who have subsidized the LCFS with their health and their children's future."

CARB's support for combustion industries over communities is apparent in the process as well as the substance of this rulemaking. At the most recent April 10, 2024 workshop, dozens of environmental justice (EJ) community members and leaders as well as scientists and researchers from across the state who had patiently waited for several hours to speak virtually were summarily told by CARB staff that there wasn't enough time to hear from them. Meanwhile, the workshop provided ample time for biofuel industry lobbyists – who could afford to attend in-person in Sacramento – to have a nearly uninterrupted opportunity to provide comments and hold exchanges with CARB staff. In response, the coalition of advocates submitted a letter to Chair Randolph in April 2024 detailing how the consistent process failures by staff left advocates with no choice but to host our own People's LCFS Workshop on May 30, 2024.

SUMMARY OF KEY POINTS DELIVERED AT THE PEOPLE'S LCFS WORKSHOP

The virtual People's LCFS Workshop brought together diverse stakeholders from the refinery communities of Northern and Southern California, to the communities impacted by factory farms in the Central Valley, to the airport workers and residents around Los Angeles International Airport (LAX), San Francisco International Airport (SFO), and San Diego International Airport (SAN), to the Inland Empire communities suffering in dirty diesel death zones from freight transportation, to the farming communities of Missouri, as well as scientific researchers across California to voice their concerns and recommendations. CARB Board members and other policymakers were invited to hear directly from community leaders, researchers, and advocates about how the broken LCFS program exacerbates harm in their communities and to learn about advocates' recommendations for a clean air and clean transportation future.

The LCFS program exacerbates harm in communities surrounding factory farms, refineries, and trucking corridors. CARB staff's current proposal is poised to worsen these disproportionate impacts.

- ***Biofuels subsidized by the LCFS are incentivizing renewed and expanded polluting infrastructure in communities of color.*** Amelia Keyes with Communities for a Better Environment explained that refinery communities have shouldered the pollution burden of the state's addiction to oil and gas for many decades. Now with the pivot to biofuels, these same communities are being forced to live with decades more of pollution from biofuel refining, which "generates similar levels of harmful air pollution and [has] already been proven to be just as dangerous as oil." In the Bay Area, the Martinez Biofuel Refinery has already experienced major accidents that have harmed and endangered both workers and nearby residents. According to Greg Karras, "the Chevron refinery expansion in Richmond, California is another example of how polluters hijack the [LCFS] to greenwash their pollution."
- ***Biofuels pollute EJ communities up and down their supply chains.*** The impact of biofuel refineries does not just stop in Northern California. Nicholas Paúl informed workshop attendees that a new biofuels transfer facility in National City, San Diego, is set to transport millions of gallons of renewable biodiesel by rail into the heart of portside EJ communities, where the fuel will then be transported by heavy-duty trucks to distribute throughout San Diego County. According to Nicholas, such projects will perpetuate PM and ozone pollution "at a time when we should be doubling down on electrification."

- ***Data confirms livestock methane offsets are distorting both the transportation and the livestock industry.*** Phoebe Seaton, co-Executive Director of the Leadership Counsel, explained that the avoided methane crediting has led to excessive carbon negativity and the utilization of livestock gas as a credit generating mechanism rather than as a transportation fuel alternative. Livestock gas makes up about 1% of fuel, but between 15% and 20% of credits in the program.
- ***This has encouraged livestock operators to generate more manure and concentrate more cows in the San Joaquin Valley***. As David Rodriguez, a founding member of Defensores del Valle Central para el Aire y Agua Limpio (Defensores), shared, the resulting groundwater pollution, air pollution, odor and flies from industrial dairies have plagued the frontline residents near growing factory farms in the Central Valley. Recent USDA Census data confirms that large farms in the Central Valley are growing - and small farms in CA are disappearing - more rapidly than the nation on average.
- ***CARB's all-carrots, no-sticks approach hurts small, family farmers.*** These impacts don't just harm Californians. Darvin Bentlage, fourth-generation family farmer and member of the Missouri Rural Crisis Center, shared that "family farmers and rural communities have been displaced, hollowed out, and depopulated as a result of corporate consolidation and corporate control of our food systems and the US livestock market, specifically by way of corporate industrial livestock operations." The solution to this climate pollution is not supporting methane gas operations and factory farm expansion.
- ***Airlines must pay for their pollution just like every other transportation fuel.*** Airport workers like Jovan Houston, an employee at LAX, are constantly exposed to unhealthy jet fuel exhaust, leading to chronic respiratory illnesses such as COPD and asthma. Jovan was joined by colleague Avril Hirachbein from SFO International Airport, who shared that their coworkers oftentimes "miss work because they can't breathe at work" and experience respiratory issues and chronic illnesses. Airport workers, like Claudia Fuentes at San Diego International Airport, and communities along flight paths are counting on CARB to include all jet fuel that is combusted in California as a deficit generator so that more zero-emission solutions can be invested in today and to encourage airlines to develop less polluting planes.
- ***Frontline freight communities reject subsidies for "bridge fuels."*** In the Inland Empire, residents are exposed to high rates of heavy-duty diesel truck pollution due to the expanding goods movement system. In the summer, hospitals are overcrowded as residents seek medical assistance for respiratory complications that spike during these months. Angie Balderas with the Peoples Collective for Environmental Justice stated, "Our people have been guinea pigs for far too long and we've had to deal with these bridge fuel companies just trying to make money off our lives." A reformed LCFS that

addresses both air pollution and climate pollution more efficiently would help accelerate the shift to zero-emissions vehicles.

CARB needs to phase out funding for combustion fuels and invest instead in zero-emission electric technologies.

- ***LCFS reform can free up billions of dollars for electrification, alleviating demand on the State Budget and electricity rates.*** According to Román Partida-López at The Greenlining Institute, "the bottom line here is that LCFS is a missed opportunity for providing a lifeline for our public electrification investments." Over the next decade, the LCFS is set to waste over $27B on polluting fuels instead of investing it into lifesaving electrification solutions.
- ***The renewable diesel boom is not done.*** Dr. Jeremy Martin from the Union of Concerned Scientists showed how the renewable diesel boom is unlikely to abate anytime soon. He explained that using soybean oil for fuel means it gets replaced in food markets by palm oil, and both palm and soybean oil are significant contributors to deforestation. "California climate policy has become a motor of destruction of forests," said Gary Hughes with Biofuelwatch. This is an unsustainable, irresponsible way for California to produce transportation fuel. It's crucial that the state sets a sensible limit on the amount of vegetable oil used for fuel. Treating CARB's projection as a safeguard—ensuring biomass diesel doesn't exceed projections by 50%—can achieve this without dramatically altering the existing market or increasing fossil diesel usage.
- ***Restricting credits from unaligned pathways creates new opportunities to fund zero-emission transit and medium- and heavy-duty infrastructure.*** Sasan Sadaat with Earthjustice explained that CARB must restrict bogus credit generation, which fails to provide clean air benefits and doesn't help the climate. Lifting the credit price by restricting bogus credits would make the LCFS program both more effective and less expensive. Furthermore, CARB should enhance credit opportunities for solutions that align with the state's climate goals such as electric transit and school buses, which will benefit low-income communities and communities of color.
- ***Unconstrained renewable diesel will keep LCFS prices low.*** Dr. Colin Murphy from UC Davis explained that under CARB's proposal, obligated parties will continue to seek the cheapest compliance option available, which will be renewable diesel until the California market is fully saturated. If there were limits on these fuels entering the market, obligated parties would have to look to other technologies and other options for finding credit. One of those would be electric vehicle charging, which gives better long-term air quality benefits and helps California move itself towards carbon neutrality in the long term.

- ***CARB Staff modeling mischaracterizes EJ asks and draws inaccurate conclusions***. Dr. Michael Wara at Stanford University emphasized that "the facts do not match the assumptions in [CARB's] modeling with respect to the lipid biofuels that are currently...60% of the diesel supply in CA and moving upward." Furthermore, the rollout of EVs into medium- and heavy-duty fleets is growing much faster than reflected in CARB's modeling assumptions. In their own modeling with updated assumptions, Wara and his team determined that the EJ scenario, including the proposed methane crediting adjustment and crop-based biofuel limits, is not only achievable at reasonable credit prices, but it could also help the state achieve its climate goals while lessening harms in EJ communities. CARB Staff's run of the EJ Scenario inaccurately represents the coalition's demands, making them appear more extreme. Wara stated, "We need to create a program that is based on facts rather than outdated assumptions."

As Andrea Vidaurre, Co-Founder of the People's Collective for Environmental Justice and 2024 recipient of the Goldman Environmental Prize, summarized, ***"CARB's job is not to help build up these bridge fuel industries. It's to clean up the air and protect our public health."***

This coalition demands that CARB respond to the concerns of scientific researchers and community advocates across California and around the country who know that the LCFS is severely flawed. In this LCFS rulemaking, CARB must limit subsidies for polluting biofuels, regulate aviation fuels, eliminate avoided methane credits for livestock gas, and prioritize investing in electrification.