EARTHJUSTICE
BECAUSE THE EARTH NEEDS A GOOD LAWYER

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Re: Comments on July 7, 2022 LCFS Workshop

1. Introduction

California sits on the frontlines of the rapidly worsening climate crisis and hosts two of the nation's most polluted air basins. The need to speed the transition from combustion to zero emissions is well-established and over-determined. The LCFS can play a role in advancing California's decarbonization if it is reformed to better align with the State's goal of widespread transportation electrification. This is consistent mandate of CARB's Mobile Source Strategy, the Governor's Executive Order N-79-20, and Legislature's intent in SB 350.

Unfortunately, in its current form, the LCFS counterproductively incentivizes the production of liquid and gaseous fuels for use in combustion vehicles that must be transitioned to zero-emission alternatives to comply with the climate and air quality rules CARB is developing pursuant to Executive Order N-79-20. It is unjustifiable to encourage fleet owners to pursue dead-end decarbonization options when zero-emission alternatives are available for almost all vehicle segments. Choosing to burn liquid fuels for decarbonization – even if they are guaranteed to be low-carbon – when zero-emission alternatives exist perpetuates environmental injustice. Moreover, even from a climate standpoint, the finite limits on genuinely sustainable biofuel supply means that they cannot continue to be squandered in sectors with clear superior decarbonization alternatives. And crucially, the LCFS will need to reform the integrity of its carbon intensity scoring to ensure that the fuels it credits do not perversely incentive social and ecological harm while distorting climate benefits.

Our comments expand on the necessary corrections to the LCFS, and provide requested input on the new provisions in Staff's proposal.

2. Eliminate Book-and-Claim Accounting of Directed Biomethane

We urge CARB to eliminate book-and-claim accounting for directed biofuels. At a minimum, CARB should revise the book & claim accounting requirements for directed biogas and hydrogen so that they align with the requirements for electricity. Most of the biogas credited for fueling compressed natural gas ("CNG") vehicles or hydrogen facilities is never physically delivered to these stations or into California at all. Virtually all biogas comes from out of state sources, with little assurance that it would not be produced absent the LCFS credits.

The LCFS's book-and-claim accounting system allows entities to claim that they are using carbon-negative fuels, but these claims are inconsistent with the reality that much of the out-of-state biomethane is captured by digesters that were installed without consideration of LCFS incentives. Indeed, multiple reports highlight out-of-state projects that had already been capturing their biogas and using it on-site, but

switch to selling into the LCFS to fetch higher revenue.[1] For example, a facility in New York State used incentives to install a digester 20 years ago (i.e., before the LCFS existed), but only last year switched from producing electricity to selling biomethane into California's LCFS program—creating no additional climate benefit.[2] Comments from Maas Energy, one of the primary developers of digesters, underscores this trend: as they explain the LCFS "encouraged developers to abandon the power generation business model and instead switch to pipeline injection of biomethane." Though the LCFS reoriented the biogas industry away from onsite electricity generation toward pipeline injection, this does not imply that the methane from these facilities would have otherwise vented.

In fact, it is possible and even likely that facilities which switch from burning biogas on-site to pipeline injection significantly increase greenhouse gas emissions. This is because pipeline injection requires additional emissions-intensive refining processes and reliance on leaky and emissions-intensive infrastructure to deliver the methane.[3] Elimination of book-and-claim accounting would avoid the faulty carbon accounting that allows regulated entities to take credit for this out-of-state biomethane under the false assumption that it would otherwise vent into the atmosphere.

The lack of a meaningful deliverability requirement for biomethane contrasts with the book-and-claim requirements for low-CI electricity, which requires that the electricity generated must be located within California, or meet the deliverability requirements for Portfolio Content Category 1 Renewable Energy Certificates.[4] In practice, this commonsense requirement ensures that CARB will not consider an electric vehicle charged on the California grid to be powered by a renewable electricity generator unless that generator actually energizes the California grid. Even electrical generators that rely on biogas or hydrogen are not eligible to generate LCFS credits unless the fuels are directly supplied to the generator. There is no reason why biogas and hydrogen projects should be held to a lower standard.

The book-and-claim of directed biogas also eliminates any financial incentive the LCFS could create to produce genuinely zero-emission, green hydrogen. The disproportionately weak regulations governing book-and-claim for directed biogas also disincentivize the production of green hydrogen over continued use of fossil-derived hydrogen. Compare two LCFS certification pathways: green hydrogen produced from electrolysis powered by solar photovoltaics in Alameda County receives a carbon-intensity score of 0. Meanwhile, hydrogen produced from steam methane reformation ("SMR") of fossil gas in Wilmington coupled with the purchase of environmental attributes from dairy methane in Indiana receives a carbon intensity score of negative 287 gCO2e/MJ.[5] This incentive structure encourages revenue-maximizing companies to produce hydrogen through SMR of fossil gas—a polluting industrial process that is already

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[1] See, e.g. Tracy Tullis, "Big Oil Wants New York's Cow Manure" (May 25, 2022) https://www.nysfocus.com/2022/05/25/big-oil-wants-new-yorks-cow-manure/.

[2] Marc Heller, "Natural Gas Could Power New Chapter in Manure-to-Energy" (July 13, 2022) https://www.eenews.net/articles/natural-gas-could-power-new-chapter-in-manure-to-energy/.

[3] N.Y. Pub. Service Commission Case 21-G-0576, Petition of Bluebird Renewable Energy, LLC for an Original Certificate of Public Convenience and Necessity and Establishing a Lightened Regulatory Regime; Comments of the Sierra Club, at 3–4 (Feb. 11, 2022), https://documents.dps.ny.gov/public/Common/ViewDoc.aspx?DocRefId={6DFD36C4-3E5D-4F5F-9382-407DD043FF4A}.

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

[5] Sara Gersen, Reclaiming Hydrogen for a Renewable Future: Distinguishing Oil& Gas Industry Spin from Zero Emissions Solutions (at slide 5) (summarizing data from CARB's Current Fuel Pathways spreadsheet), https://efiling.energy.ca.gov/GetDocument.aspx?tn=243619.

the most common and lowest cost means of producing hydrogen in the United States—rather than invest in the nascent market for zero-emission hydrogen production.

Allowing fossil methane or fossil-derived hydrogen fuel to generate LCFS credits is damaging and counterproductive. This practice does not guarantee increased supply of sustainable transportation fuel in or out of state, and perversely subsidizes dependence on existing, polluting practices. CARB should prohibit the use of directed biogas for CNG and hydrogen transportation fuel, just as it does with low-CI electricity.

3. Update the CA-GREET Model with More Accurate Assumptions for Methane Leakage

The CA-GREET model currently underestimates the carbon-intensity of CNG vehicles because it relies on assumptions for methane leakage that drastically understate the climate impacts of CNG fuel. Specifically, the model uses the assumptions that upstream leakage rate for conventional natural gas is 1.14% and the leakage rate for shale gas is 1.21%.[6] These assumptions are inconsistent with the latest data on methane leakage from gas production, handling, and transportation. California relies on shale regions with some of the highest leakage rates in the nation for its methane. Consequently, on average, fossil gas consumed in California has a production-stage methane leakage rate of 2.8%.[7] This figure does not include leakage from gathering, processing, storage, or transmission. Gathering operations that bring unprocessed gas from the production site to a processing plant or transmission pipeline contribute about 20% of the emissions from the methane supply chain. [8] Measurement data on these significant emissions was not available at the time Argonne National Laboratory developed the original GREET model, which may explain why these particular emissions were unaccounted for.[9] In addition, processing, storage and transmission account for about 20% of emissions from the methane supply chain, which mostly come from processing and compression facilities.[10] With the current data that is available, it is unjustifiable for CARB to rely on a model that uses outdated and flawed assumptions for methane leakage.

4. Exclude Light-Duty HRI from Capacity Crediting

Earthjustice requests that CARB eliminate capacity crediting eligibility for light-duty HRI stations, which counterproductively incentivizes further expansion of a refueling system that is vastly underutilized. According to the most recent Integrated Energy Policy Report, there are already 52 retail light duty hydrogen fueling stations in California, with another 31 planned or under contract through the Clean Transportation Program.[11] The California Energy Commission estimates that this is enough to

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[6] CARB, CA-GREET3.0 Lookup Table Pathways Technical Support Documentation, at 20, Table C.2. (Aug. 13, 2018), https://ww2.arb.ca.gov/sites/default/files/classic/fuels/lcfs/ca-greet/lut-doc.pdf?_ga=2.244773765.1612320332.1659372127-1168559359.1580157486.

[7] Diana Burns & Emily Grubert, *Attribution of production-stage methane emissions to assess spatial variability in the climate intensity of US natural gas consumption*, at 6, 16 Environmental Research Letters 4 (2021), https://iopscience.iop.org/article/10.1088/1748-9326/abef33.

[8] Alvarez R A et al 2018 Assessment of methane emissions from the U.S. oil and gas supply chain Science (EAAR) 7204 at 3, https://www.science.org/doi/pdf/10.1126/science.aar7204?casa_token=10LKsdJ9bfwAAAAA:95C5u564Zk8QMqUxIMJX7tL4GwXAu1W1w7i1z_KXZfNVr21o6s20yckX0LDLCg6fp-_O-BXLHBlI.

[9] *See id.*

[10] *Id.*

[11] CEC, Final 2021 Integrated Energy Policy Report, Appendix: Assessing the Benefits and Contributions of the Clean Transportation Program, at 13 (Feb. 2022), https://www.energy.ca.gov/datareports/reports/integrated-energy-policy-report/2021-integrated-energy-policy-report.

support 98,000 fuel-cell vehicles.[12] With future funding from the Clean Transportation Program and privately funded stations, the network could support nearly 230,000 fuel cell vehicles.[13] There are only around 10,000 fuel cell vehicles registered in California today.[14] In other words, California will have the infrastructure to support 23 times as many fuel cell vehicles as are on the road today without any continued support from the LCFS.

Market factors and basic physics mean it is unlikely that this system will ever require expansion, given the greater availability, affordability, efficiency, and commercial maturity of battery electric vehicles ("BEVs"). As CEC Chair David Hochschild explained in a presentation to a Joint Legislative Committee in March, hydrogen's low efficiency leads to "significant wasted energy compared to electrification. A FCEV would require 2 times the clean electricity as a BEV."[15] The superior efficiency of BEVs means they are already the cheapest vehicle to own in almost any part of the United States. Most carmakers have completely abandoned any projects they had pursuing passenger FCEVs. For example, Volkswagen's CEO declared that "you won't see any hydrogen usage in cars…not even in 10 years because the physics behind it are so unreasonable."[16] Researchers comparing hydrogen and battery-electric on-road transportation options point out that "in comparison to electric vehicles, hydrogen-based propulsion technologies will reach market readiness too late." While number of BEV models commercially available in the US alone has expanded to over 30, there are now only 2 models of hydrogen fuel cell vehicles (there were 3, but the Honda Clarity was discontinued in 2021 from lack of demand).[17]

HRI stations are also far more expensive to build – a single refueling station costs between $1 and $2.1 million (in contrast to a DC fast charger, which costs $28,000-$140,000).[18] CARB should not waste additional resources on refueling infrastructure that less efficiently, more expensively duplicates the same decarbonization benefit as electric charging infrastructure, which must expand rapidly to keep up with exploding consumer demand.

5. **Include Compliance with Regulations Called For by SB 1505 as an Eligibility Requirement for MHD HRI Capacity Credits.**

To stop misleading Californians and subsidizing fossil fueled-hydrogen, capacity credit generating opportunities for MHD HRI refueling stations should be limited to projects that—at a minimum—comply with regulations that must be adopted under SB 1505. CARB and the hydrogen industry have contributed to a disingenuous narrative that more than 33 percent of the hydrogen dispensed at California fueling stations is renewable. For example, CARB states that "California's [hydrogen fueling] network

[12] Id.
[13] Id.
[14] Id.
[15] David Hochschild, California Energy Commission – Hydrogen Presentation (Mar. 14, 2022) at 4 https://atrn.assembly.ca.gov/sites/atrn.assembly.ca.gov/files/CEC%20Hydrogen%20Presentation-%20Chair%20David%20Hochschild.pdf.
[16] Joshua S. Hill, VW joins ranks of car makers rejecting hydrogen fuel cells, The Driven (Mar. 16, 2021), https://thedriven.io/2021/03/16/vw-joins-ranks-of-car-makers-rejectinghydrogen-fuel-cells/.
[17] Joey Capparella, "Honda Clarity Fuel-Cell and PHEV Models to End Production Soon" (Jun 17, 2021) https://www.caranddriver.com/news/a36753781/honda-clarity-fuel-cell-phev-dead/#:~:text=Honda%20will%20end%20production%20of,available%20to%20lease%20through%202022.
[18] Eric Wesoff, "Why is California Wasting Millions on Hydrogen Fuel Pumps" (Mar. 7, 2022) https://www.canarymedia.com/articles/hydrogen/why-is-california-wasting-millions-on-hydrogen-fuel-pumps.

has recently been dispensing up to 90 percent renewable hydrogen."[19] The California Hydrogen Business Council has repeated that claim and also falsely stated that "[i]n 2018, between 37% and 44% of hydrogen used for transportation in California was renewable."[20] In reality, most of the hydrogen that CARB and industry are labeling as "renewable" is produced from fossil fuels through SMR. The industry calls this hydrogen "renewable" when it is matched with credits for the "environmental attributes" of biomethane from out-of-state sources.[21]

Mislabeling hydrogen produced from fossil fuels as "renewable" is not just misleading the public and perpetuating an industrial process that harms public health—it obscures CARB's longstanding failure to require state-funded hydrogen fueling stations to dispense at least 33.3 percent renewable hydrogen, as state law requires. In 2006, California enacted Senate Bill ("SB")1505 (Lowenthal), which ordered CARB to adopt regulations no later than July 1, 2008, that: "Require that, on a statewide basis, no less than 33.3 percent of the hydrogen produced for, or dispensed by, fueling stations that receive state funds be made from eligible renewable energy resources as defined in subdivision (a) of Section 399.12 of the Public Utilities Code."[22] These eligible renewable energy resources are—by definition—electrical generating facilities that meet certain requirements.

As a result of failing to implement SB 1505, CARB is hydrogen made from fossil fuels as "renewable" even though it does not meet the statutory standard for renewable hydrogen. CARB's practice of counting hydrogen made from fossil fuels as "renewable" is inconsistent with the statute for at least two reasons. First, SB 1505 demands that at least a third of hydrogen dispensed at state-funded fueling stations be "made from" renewable energy resources. Under the plain meaning of the statute, hydrogen made from fossil fuels does not qualify. The statute does not authorize CARB to accept credits for "renewable attributes" in lieu of requiring hydrogen to actually be made from renewable energy resources.

Second, SB 1505 specified that state-funded hydrogen fueling stations must dispense hydrogen made from renewable electricity resources. This requirement necessarily excludes hydrogen produced through SMR—regardless of whether the facility uses a fossil fuel feedstock, a biomethane feedstock, or buys "environmental attributes" to supposedly mitigate the impacts of its fossil fuel use—because SMR facilities do not make hydrogen from renewable electricity resources, as SB 1505 demands. That is, SB 1505 requires that hydrogen be made from "eligible renewable resources as defined in subdivision (a) of Section 399.12 of the Public Utilities Code." In turn, Public Utilities Code Section 399.12 defines "[e]ligible renewable energy resource" as "an electrical generating facility that meets the definition of 'renewable electrical generation facility'" in the Public Resources Code, subject to certain provisos.[23]

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[19] CARB, 2020 Annual Evaluation of Fuel Cell Electric Vehicle Deployment& Hydrogen Fuel Station Network Development (Sept. 2020), at xxiv, https://ww2.arb.ca.gov/sites/default/files/2020-09/ab8_report_2020.pdf.

[20] California Hydrogen Business Council, Hydrogen FAQs, https://www.californiahydrogen.org/resources/hydrogen-faq/.

[21] John Eichman & Francisco-Flores Espino, California Power-to-Gas and Power-to-Hydrogen Near-Term Business Case Evaluation, NREL (Dec. 2016) ("NREL 2016, Business Case Evaluation"), at 59 ("Senate Bill 1505 in California requires that 33.3% of hydrogen produced for or dispensed by state-funded fueling stations must be made from eligible renewable resources. At present, the majority of the required renewable hydrogen is produced from SMR and coupled with the purchase of biogas credits."), https://www.nrel.gov/docs/fy17osti/67384.pdf.

[22] Senate Bill No. 1505, https://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill_id=200520060SB1505.

[23] Today, the Public Utilities Code definition of eligible renewable energy resource is codified at Section 399.12(e). However, subsequent amendments to Public Utilities Code Section 399.12 do not change the analysis because the statute has always defined "Eligible renewable energy resource" to mean "an electric generating facility" that meets certain criteria.

Thus, SB 1505 orders CARB to require state-funded fueling stations to dispense hydrogen made from renewable electrical generating facilities. The statute's legislative history puts this requirement succinctly: "At least 33 percent of the hydrogen produced or dispensed must be made from renewable sources of electricity."[24] Thus, under SB 1505, the only permissible way to use biomethane to produce renewable hydrogen pursuant is to use Renewable Portfolio Standard-eligible biomethane to power an electric generating unit and use the resulting electricity to produce hydrogen.

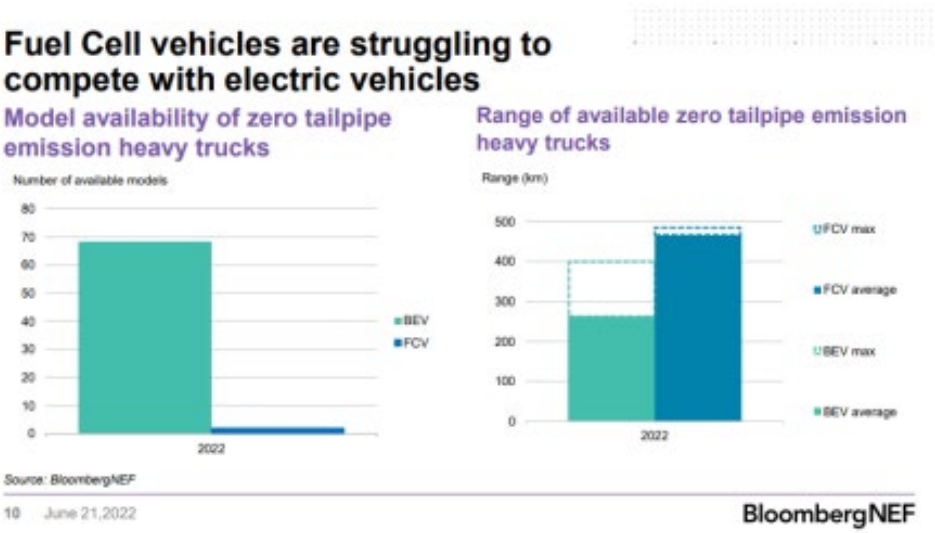
Consistent with SB 1505, the CEC should limit funding to fueling stations that dispense at least 33.3 percent green hydrogen and not allow hydrogen produced through SMR coupled with credits for "environmental attributes." Compliance with SB 1505 will ensure that the state's hydrogen industry is investing in green hydrogen and will deliver health benefits to California communities because green hydrogen production that relies on wind and solar resources does not emit health-harming air pollution—unlike SMR.

5. **Revise Capacity Maximums and Crediting Horizons to Reflect the Smaller Role of MHD HRI in Decarbonizing Road Transport**

While Earthjustice does not oppose capacity crediting for MHD HRI, we caution against over-subsidizing the refueling network at a time when the role of hydrogen in the road-transportation sector is highly uncertain. While independent experts rank passenger vehicles the worst application for hydrogen ("uncompetitive"), trucks and buses are ranked second-worst, or "low potential." Earthjustice is concerned that investments in MHD HRI could replicate the problems of wasted public funds that overbuild unnecessary infrastructure while siphoning resources away from MHD charging infrastructure, for which the need is far more certain. Academics, truck manufacturers and multiple independent analysts have concluded that battery electric technology is best positioned to decarbonize most of road-transport (even long-haul trucking).[25] Today, the only commercially available HCFV medium- and heavy-duty vehicles are transit buses. A study of diesel, hybrid, battery, and fuel-cell buses in AC Transit's fleet (which has pioneered fuel-cell buses) found that HFCVs were the least reliable and had the highest cost-per-mile of any vehicle in operation. The advantage of HFCVs would be in niche applications, where both long-haul routes and rapid refueling requirements outweigh their higher maintenance and refueling costs relative to battery-electric trucks. Such vehicles are not yet commercially available, nor are they expected any sooner than battery-electric tractors with up to 500 miles of range.

[24] See, e.g., Assembly Committee on Transportation Bill Analysis, SB 1505 (Lowenthal) – as Amended August 7, 2006, at 7 (Aug. 8, 2006).

[25] See, e.g., Patrick Plotz, Hydrogen Technology is Unlikely to Play a Major Role in Sustainable Road Transport Nature Electronics (Jan 31, 2022) https://www.nature.com/articles/s41928-021-00706-6; TRATON, "Why the future of trucks is electric," (Apr. 13, 2021) https://traton.com/en/newsroom/currenttopics/furture-transport-electric-truck.html; Amol Phadke et al., Why Regional and Long-Haul Trucks are Primed for Electrification Now (Mar. 2021) https://eta-publications.lbl.gov/sites/default/files/updated_5_final_ehdv_report_033121.pdf; Transport & Environment, Why the Future of Long-Haul Trucking is Battery Electric (Feb. 2022).



Given the substantial degree of uncertainty about what, if any role, hydrogen will have for road transport, we urge Staff to exercise caution. Specifically, we recommend that Staff limit the crediting period for MHD HRI to match that of the MHD FC program (5 instead of 15 years) and lower the maximum station capacity to 2,000 kg/day. Comments from the California Hydrogen Coalition at the July 7th workshop indicate that 4,000 kg/day would be needed to fuel 100 or more MHD vehicles per day. For context, only 6 fuel-cell buses (out of more than 11,300 zero-emission trucks and buses) have ever been purchased through California's HVIP program. We therefore do not see a realistic trajectory for any MHD HRI station to host more than 50 vehicles in a single day. To avoid over-crediting unnecessarily-high capacity stations, we suggest an optimistic 2,000 kg/day maximum capacity.

Finally, we urge CARB to develop location eligibilities that will ensure MHD HRI stations are placed along nodes of long-haul trucking corridors that will increase their decarbonization value. While we agree with Staff that HRI funding should not be limited to dedicated fleets, we believe that it should be limited as best as possible to dedicated use cases that are most promising for hydrogen. For example, capacity crediting could initially be limited to interstate truck stops.

6. Support for MHD FCI Capacity Crediting With Additional Incentives for DAC Placement and DERs.

Earthjustice strongly supports the inclusion of capacity credits for medium- and heavy-duty fast charging infrastructure (MHD FCI). These stations are critical to the stable launch of multiple regulations and measures aimed at cleaning up freight pollution in communities most overdue for relief. Hastening the transition to zero-emission freight with commercially available, energy efficient battery-electric freight trucks is among the highest-impact tasks that CARB can take to have any hope of meeting the 2031 ozone standards and our 2030 greenhouse gas targets. MHD FCI will slash range requirements for batteries, allowing today's commercially available technology to displace a larger swath of the existing fleet even while battery range and technology continually improve.

This charging network is especially critical for smaller fleets and independent drivers that lack access to the private dedicated charging yards of larger fleets. While we do not see the need for location restrictions to eligibility at this nascent stage, we support the proposal from comments by GreenPower Motor to target existing truck and bus dealerships, garage services, and warranty support centers. As

GreenPower Motor points out, these locations tend to already service medium- and heavy-duty vehicles, have the appropriate space to accommodate infrastructure and parking, and provide new revenue streams to businesses that have historically relied on costly maintenance of conventional commercial vehicles.

Finally, we recommend CARB explore options for using capacity credits to incentivize the inclusion of on-site distributed energy resources ("DERs") at MHD FCI stations. Outfitting sites with battery storage and renewable generation can help reduce grid impacts and avoid the need for utility upgrades to substations. Experts have pointed out that DERs are effective at lowering overall charging costs and peak load.[26]

7. Categorically Exclude Crop-Based Biofuels

Earthjustice strongly urges CARB to finally end the LCFS's harmful support for crop-based feedstocks. As an initial matter, the support for liquid biofuels, even if the integrity of their sustainability could be assured, does not align with California's goals to accelerate the transition to zero-emissions. These fuels currently are blended into gasoline and diesel for road transportation end-uses that the state has committed to transition to zero emission in order to tackle not only climate change, but the worst air pollution in the country. Burning biofuels of any kind does not align with this goal.

Now, soybean oil has become one of the largest credited sources of fuel in the LCFS. At the same time, cooking oil prices have nearly tripled since 2020.[27] Soybean crops have now become a significant driver of deforestation in the Amazon and other crucial forests in South America over the past two decades. Researchers have shown significant emissions result from the indirect land-use change effects of soybean-based biofuels, the second highest after palm oil.[28] As a result, many European Union nations are now turning away from biofuels made from both palm and soybean oil altogether. Belgium recently joined Denmark, France, and the Netherlands in banning palm oil biodiesel, and by 2023, soy-based biodiesel will also be banned from Belgian transport markets.[29] The European Union as a whole is expected to vote to phase out both palm and soy-based oils entirely from its Renewable Energy Directive.[30] We urge CARB to go beyond the incremental steps of setting caps or criteria for these fuels to be eligible and join other climate leaders in categorically excluding them from programs intended to clean up our transportation sector.

While palm and soy oils are being phased out from Europe's transportation sector, experts and advocates there correctly point out that these are not the only feedstocks that drive food prices and deforestation for illusory climate benefit. Other food-based commodities such as rapeseed oil, sunflower oil, wheat, and corn, can drive land-use change and increase emissions while also worsening global food

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[26] EDF, California Heavy-Duty Fleet Electrification (Mar. 2021) at 56 https://blogs.edf.org/energyexchange/files/2021/03/EDF-GNA-Final-March-2021.pdf.

[27] https://thecounter.org/ukraine-biden-oil-us-reserves-biofuel-rfs-ethanol-soybean/

[28] See, e.g Alexandrea Strapasson et al., Land Use Change and the European Biofuels Policy: The expansion of oilseed feedstocks on lands with high carbon stocks (Oct. 2019) https://doi.org/10.1051/ocl/2019034; Chris Malins, Biofuel to the Fire – The Impact of Continued Expansion of Palm and Soy Oil Demand through Biofuel Policy (Apr. 2020) https://d5i6is0eze552.cloudfront.net/documents/RF_report_biofuel_0320_eng_SP_update.pdf.

[29] Mongabay, "Belgium bans biofuels made from palm oil, soy" (Apr. 13, 2021) https://news.mongabay.com/2021/04/belgium-bans-biofuels-made-from-palm-oil-soy/.

[30] https://www.transportenvironment.org/wp-content/uploads/2022/07/TE-fit-for-55-ITRECommittee-Votes-RED.pdf

insecurity.[31] Data in the United States bears this out: the U.S. EPA's review of their Renewable Fuel Standard shows that the program has led to the conversion of up to 8 million acres of land – nullifying and overwhelming any climate benefit the program might have had.[32] The LCFS creates a market for these fuels which have demonstrated risks to deforestation and rising food prices. Even in the best case, crop-based biofuels only contribute to incremental reductions in carbon intensity of combustion fuels that have zero-emission alternatives. Providing policy support for this dead-end strategy has the unintended consequence of delaying the transition to zero-emission vehicles. We therefore urge CARB to exclude them from the program.

Conclusion

Thank you for the opportunity to provide comments. We look forward to working with CARB to reform the LCFS to deliver more equitable, durable, and transformative benefits to our transportation system.

Sincerely,

Sasan Saadat
Sara Gersen

[31] See, e.g. William Todts, "Time to Fix Europe's Dumbest Climate Policy" (July 26, 2022)
[32] U.S. EPA, Biofuels and the Environment: The Second Triennial Report to Congress, at 37 (June 29, 2018), https://cfpub.epa. gov/si/si_public_record_report.cfm? Lab=IO&dirEntryId=341491.