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February 20, 2024

Liane Randolph, Chair  
California Air Resources Board

**Re: Proposed Low Carbon Fuel Standard Amendments**

Dear Chair Randolph,

As key stakeholders who support the goals of the Low Carbon Fuel Standard (LCFS) we are writing to urge CARB to add a critical safeguard to the proposed LCFS amendments before the Board considers them for adoption. Specifically, to ensure that the LCFS advances California's climate protection and zero emissions transportation goals, we urge CARB to include a cap on the use of crop-based biofuels or lipids for LCFS compliance.

The LCFS has the potential to substantially help California meet its climate goals by accelerating transportation electrification and promoting innovation in the use of waste-based biofuels (such as woody materials removed from California forests to reduce wildfire risks). In the absence of effective safeguards, however, the LCFS could drive a massive increase in biomass-based diesel (BBD) made from soybean oil and other crops, which would undermine the goals of the program.

Until recently most BBD used for LCFS compliance has come from waste fats, oils, and greases, but the supply of these feedstocks is limited. As a result, recent increases in BBD supply to California and expected future increases would mostly be produced from virgin vegetable oils.<sup>1</sup> According to a recent study by University of California researchers, if the LCFS Carbon Intensity (CI) reduction target is increased to 30% in 2030, in the absence of a limit on crop-based biofuels or lipids it is likely that BBD consumption in California will increase to over 4 billion gallons by 2030,<sup>2</sup> more than three-quarters of which would likely be supplied by virgin vegetable oils.

The Initial Statement of Reasons (ISOR) for the proposed amendments to the LCFS acknowledge that reliance on crop-based biofuels could add pressure to convert forests and other land for biofuel crop production.<sup>3</sup> For this reason, the proposed amendments include a ban on the use of palm-derived fuel for LCFS credit generation. The proposed amendments also include a requirement to track crop-based and forestry-based feedstocks to their point of origin. While well-intentioned, these guardrails are completely insufficient to prevent the risk of deforestation that CARB acknowledges because vegetable oils are largely interchangeable

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<sup>1</sup> <https://theicct.org/publication/lipids-cap-ca-lcfs-aug22/>

<sup>2</sup> <https://energyathaas.wordpress.com/2023/10/02/petroleum-diesel-is-disappearing-from-california/>

<sup>3</sup> <https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2024/lcfs2024/isor.pdf>, at page 32.

global commodities as demonstrated by the strong correlation between the price of palm oil and soybean oil. This means that the very large increase in demand for vegetable oil that the proposed amendments would cause is likely to drive deforestation and related carbon emissions regardless of whether the specific feedstocks used to generate LCFS credits can be traced to existing agricultural land. In short, there is no reasonable policy rationale for excluding the use of palm oil but placing no limits on the use of other virgin vegetable oils.

The U.S. EPA examined this issue in a recent technical study<sup>4</sup> and found that a 1 billion gallon increase in soybean biodiesel demand (far less than the increase the LCFS amendments would cause according to the University of California study) would result in net increases in GHG emissions according to two of the three energy and land-use models they used.<sup>5</sup> The net increase in GHG emissions caused by increased demand for virgin vegetable oil could more than offset the total benefits of the LCFS program according to an estimate by the World Resources Institute.<sup>6</sup>

The ISOR rejects alternatives that include a cap on lipid biofuels based, in part, on model results that suggest that NOx and PM emissions would not decline as much as under the proposed amendments because there would be more reliance on petroleum diesel rather than renewable diesel. However, more recent research by CARB itself shows that there is no statistically significant difference in PM or NOx emissions between petroleum diesel and renewable diesel when used in New Technology Diesel Engines<sup>7</sup>

Electrification of ground vehicles is the most effective pathway to decarbonization in the transportation system. CARB can accelerate the transition by better harnessing the LCFS towards this end, amongst other reforms. There is too much uncertainty surrounding the net GHG benefits of crop-based biofuels at this time to double down on them,<sup>8</sup> especially when other jurisdictions are looking to adopt LCFS programs of their own and will inevitably look to CARB for design and implementation guidance. Limiting the volume of crop-based biofuels that can be used for LCFS compliance is essential to prevent lock-in of counter-productive compliance strategies, preserve incentives to improve the environmental performance of biofuels that are used for compliance, and focus investment on electrification, hydrogen, and carbon removal strategies that are central to California's pathway to net zero emissions.

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<sup>4</sup> <https://nepis.epa.gov/Exe/ZyPDF.cgi?Dockey=P1017P9B.pdf>

<sup>5</sup> Also available at <https://www.wri.org/insights/us-renewable-fuel-standards-emissions-impact>

<sup>6</sup> WRI letter to Chair Randolph, September 26, 2023.

<sup>7</sup> [https://ww2.arb.ca.gov/sites/default/files/2021-11/Low\\_Emission\\_Diesel\\_Study\\_Final\\_Report.pdf](https://ww2.arb.ca.gov/sites/default/files/2021-11/Low_Emission_Diesel_Study_Final_Report.pdf)

<sup>8</sup> <https://escholarship.org/uc/item/5wf035p8>