

March 15, 2023

Hon. Liane M. Randolph, Chair
California Air Resource Board
1001 I Street
Sacramento, CA 95814

Re: February 22, 2023, Public Workshop Regarding Potential Changes to the Low
Carbon Fuel Standard

Dear Chair Randolph:

Bunge is the world's largest oilseed processor by crush volume capacity. As a leading producer and supplier of feed and specialty plant-based oils and fats, we buy and process agricultural commodities, turning them into a number of products that we transport around the world to be used in the food industry, animal feed, and — increasingly — the renewable diesel industry. We are committed to meeting these needs sustainably.

Our commitment to sustainability is core to what we do as a business. The very nature of the work we do — connecting farmers to consumers to deliver essential food, feed, and fuel to the world — requires a deep understanding of the environment and market demands around us. It means we must face head-on the realities of a changing climate and the role we play in minimizing our impact on the planet while meeting the needs of consumers and communities.

We recognize that climate change presents significant challenges not only to our business, but to the wider food and agriculture industry. We believe that ambitious steps must be taken by businesses individually and collectively to address the climate crisis. And so, at Bunge, we are taking a leading role in shaping more sustainable food systems. This starts with changing the way we think as a business: Driven by a variety of teams and levels of leadership, we have embraced climate-focused decision-making with strong business benefits throughout our organization and across our operating model. These climate-focused decisions include ambitious goals.

Bunge is well on its way to meeting our commitment to eliminate all deforestation and native vegetation conversion in our supply chains in 2025. Over 95% of our crop volumes in South America are already deforestation-free. Reaching this milestone is the product of our efforts across multiple fronts to build relationships with farmers, develop powerful tools to incentivize sustainable agriculture, and support sector-wide partnerships to achieve impact at scale.

We have built the sector's most comprehensive and robust traceability and monitoring system which gives us unprecedented insight into our supply chain in areas subject to deforestation. It is a foundational component of our non-deforestation commitment and helps us to mitigate

against land-use change. Bunge is also focused on reducing greenhouse gas (“GHG”) emissions within its operations and supply chain. We are improving the efficiency and sustainability of our own operations by investing significant capital expenditure into projects that will reduce GHG emissions. Bunge has also been procuring zero- or low-carbon sources of energy. Today, three of our facilities in North America run on 100% wind power, adding to a growing list around the world. Bunge’s goal is to reduce its own emissions by 25% and the emissions throughout our supply chain by over 12% by 2030. These targets are validated by the Science Based Targets Initiative and are aligned with Paris Climate Agreement expectations.

Bunge’s commitment to stopping deforestation in agricultural commodity supply chains does not end with our own efforts. We are also engaged in multiple forums that bring the agricultural commodity sector together to address ending deforestation in the supply chain. The Soft Commodities Forum (through the World Business Council for Sustainable Development) has provided a common platform for the soy sector to gather and elevate the importance of ending deforestation through analysis, guidelines, programs, metrics, commitments and engagement with stakeholders. Furthermore, through the collaboration of the U.S. and British governments, thirteen of the world’s largest agricultural trading and processing companies — including Bunge — worked together to craft a shared statement of commitment to end deforestation in agricultural commodity supply chains. We believe many in our sector understand the importance of addressing deforestation and these activities show the agricultural commodity sector is taking strides to halt this issue expeditiously.

In addition to improving existing supply chains, the urgency of climate action also provides opportunities for new sustainable markets and products. For example, as consumers and governments seek lower carbon-intensity fuels, we are expanding our partnerships to increase our ability to meet growing demand for the next generation of renewable fuels and the development of lower carbon-intensity feedstocks. This allows us to leverage our experience to help shape the sustainability of the growing renewable energy industry. Bunge is investing and exploring opportunities to not only reduce the carbon intensity (CI) in the soy and canola supply chains, we are investing in projects focused on new and innovative low CI vegetable oil-producing seeds. These new low CI vegetable oilseed projects will result in farmers having more tools available to them for implementing regenerative agriculture practices on their farms. For instance, Bunge is investing in oilseed producing cover crops that help build soil health, prevent erosion, and provide another oilseed feedstock for the biofuels sector. These innovations are a response to the market-based approach of the California LCFS program; the program is a key driver in incentivizing investments in regenerative agriculture as fuel producers look for lower CI oilseed feedstocks. New developments are underway from the seeds farmers use to the types of facilities being built to process new oilseeds.

1. The LCFS is a Critical and Effective Tool for Mitigating Transportation Emissions

The next several years will be critical to making progress towards the California Climate Crisis Act’s (Assembly Bill (AB) 1279, Cal. Leg. 2022, Chap. 337) goals of achieving carbon neutrality no later than 2045 and an 85 percent reduction in anthropogenic GHG emissions below 1990 levels by 2045. The California Air Resources Board’s (“CARB”) adoption of the 2022 Final Scoping Plan on

Achieving Carbon Neutrality is an important step and consideration of potential changes to the Low Carbon Fuel Standard ("LCFS") should be a priority in CARB's implementation of the adopted plan.

Bunge applauds the design of the LCFS, which has long been a centerpiece of California's efforts to combat climate change. CARB's foresight to design a market-based system that uses science to identify the carbon intensity ("CI") of various fuels, and then incentivize investment in relatively low CI fuels, has proven to be both smart and effective. Bunge encourages CARB to continue its efforts to refine the CI scores for all fuel types, including crop-based fuels, based on the best available science. Ensuring the accuracy of these scores will allow the LCFS to function as intended. A cap on crop-based fuels — or on any type of renewable sources — on the other hand, would be antithetical to the design of the LCFS program, particularly where such an arbitrary departure from the LCFS's market-based design is neither motivated nor supported by scientific evidence.

During the February 22, 2023, public workshop, CARB indicated that it received comments supporting and opposing limits on crop-based fuels in response to the November 9, 2022 workshop. CARB noted that, in accordance with the 2022 Scoping Plan, biofuel production must not come at the expense of deforestation or food production. See Public Workshop Presentation at 41; 2022 Final Scoping Plan Update at 191. CARB staff recognized the anticipated increase in crop-based feedstocks for biofuels production and sought feedback on the possibility of imposing a cap on crop-based biofuels. CARB presented a number of questions, including "[w]hat indicators or resources should CARB monitor to understand if our programs are or are not having adverse impacts on land use or food availability?" See Public Workshop Presentation at 41.

2. CARB Should Not Propose an Arbitrary Cap on Crop-Based Fuels Before Completing a Rigorous Reassessment of the Relationship Between the Production of Such Fuels and Impacts on Land Use and Food Supply

The LCFS was designed to reduce the state's reliance on petroleum-based fuels and encourage the use of less carbon intense fuels in the transportation sector. Investment in crop-based biofuels has contributed to the market over-performing relative to the required CI reduction in recent years. Far from representing a failure to advance the LCFS's objectives, banked credits demonstrate its success in incentivizing investment in alternative fuels and driving down costs to achieve the LCFS targets.

Bunge supports CARB's efforts to prevent deforestation and impacts on food availability. In our own journey to achieving a deforestation-free supply chain, we have learned the importance of working closely with farmers to protect native vegetation, developing robust supplier non-compliance and grievance processes, and actively collaborating across companies in our sector to increase industry-wide transparency and support fair compensation for farmers who commit to sustainable agricultural practices and avoid native vegetation conversion. Monitoring for impacts and ensuring traceability cannot be accomplished through a one-time survey of potential impacts, but demands continued engagement with stakeholders throughout the supply chain.

Based on our experience, Bunge stands ready to offer its views to CARB on whether appropriate indicators are available that could be used to monitor for impacts on land use and food production. Given the short length of the comment period and the complexity of identifying and evaluating reliable indicators and monitoring resources, however, we urge CARB to seek additional public input on how to best evaluate the impacts of crop-based biofuels, including through additional workshops and opportunities for public comment and possibly convening a panel of experts to assess the state of science on evaluation of land use change and available monitoring tools. CARB should not make a decision to impose a cap on crop-based biofuels unless and until it has identified reliable indicators of such impacts and concluded that material adverse impacts are likely to occur as a result of use of crop-based feedstocks for the production of fuels delivered to California under the LCFS.

A. Existing Scientific Evidence Makes It Difficult to Determine Whether and How Much Crop-Based Fuels Are Impacting Land Use Change

The lawfulness and integrity of the LCFS is rooted in its adherence to science.¹ It is therefore particularly critical for CARB to conduct an updated assessment of the science on indirect land use change (“ILUC”), before considering potential regulatory mechanisms that would significantly depart from the market-based approach currently employed by the LCFS to mitigate ILUC. Academics studying the links between biofuels and deforestation have repeatedly noted the complications in drawing direct links between the two, much less quantifying them.² This is because “the high variability in pathways, uncertainties in technological development and ambiguity in political decision-making” make modeling feedstock-driven ILUC incredibly difficult.³ One study concludes that it is “currently almost impossible to quantify the relationship between biofuel production and deforestation and to map it at the global level.”⁴ Another notes that upstream land-use modeling “persistently suffer[s] from multiple forms of uncertainty[.]”⁵ Yet another recognizes that indirect environmental impacts, including “[e]missions from [land use changes] . . . are notoriously difficult to estimate and represent one of the most uncertain

¹ See *Rocky Mountain Farmers Union v. Corey*, 730 F.3d 1070 (9th Cir. 2013); cf. *Nat’l Pork Producers Council v. Ross*, 6 F.4th 1021, 1028 (9th Cir. 2021), cert. granted, *Nat’l Pork Producers Council v. Ross*, 21-468 (S. Ct. 2022).

² Yan Gao *et al.*, A GLOBAL ANALYSIS OF DEFORESTATION DUE TO BIOFUEL DEVELOPMENT, CENTER FOR INTERNATIONAL FORESTRY RESEARCH (CIFOR) (2011), https://www.cifor.org/publications/pdf_files/WPapers/WP68Pacheco.pdf; see also Felix Creutzig *et al.*, *Bioenergy and climate change mitigation: an assessment*, 7 GLOBAL CHANGE BIOLOGY: BIOENERGY 916–944 (2015) (“The climate change mitigation value of bioenergy systems depends on several factors, some of which are challenging to quantify.”), <https://onlinelibrary.wiley.com/doi/epdf/10.1111/gcbb.12205>.

³ See Felix Creutzig *et al.*, *supra* note 1.

⁴ See Yan Gao *et al.*, *supra* note 2.

⁵ Vassilis Daioglou *et al.*, *Progress and barriers in understanding and preventing indirect land-use change*, 14 BIOFUELS, BIOPRODUCTS, AND BIOREFINING 924–934 (2020), <https://onlinelibrary.wiley.com/doi/epdf/10.1002/bbb.2124>.

components of the global [carbon] budget.”⁶ Consistent with this, the U.S. Environmental Protection Agency (“EPA”) summarized five leading studies on land use changes and biofuels and concluded: “Biofuel feedstock production is responsible for some of the observed changes in land used for agriculture, but we cannot quantify with precision the amount of land with increased intensity of cultivation nor confidently estimate the portion of crop land expansion that is due to the market for biofuels.”⁷

Other studies that have endeavored to quantify links between domestic crop demand and international deforestation have observed limited impacts. For example, one study evaluating the links between American biofuel production and deforestation in Malaysia and Indonesia determined that less than 1% of Malaysian and Indonesian cropland expansion between 2000 and 2016 could be attributed to increased American biofuel production.⁸ Another study of soy production in the Brazilian Amazon notes that “often grazing land (and not forests) are converted for soy production as biofuel feedstock.”⁹ The World Bank previously found that using pasture land for biofuel production has a relative GHG benefit.¹⁰ Furthermore, an industry-leading initiative has imposed a successful moratorium in the Amazon biome on purchase of soy grown on land cleared after 2008, which further reduces the risks of ILUC due to cultivation of soybeans in that biome. Accordingly, the links between biofuels production and land use change, while admittedly complex, are far from clear and the industry is implementing significant commitments to avoid ILUC in critical biomes.

B. A Rigorous Reassessment of the Effectiveness of the LCFS’s Existing Tools to Mitigate Land Use Impacts and Available Systems to Identify Such Impacts Should Precede Proposal of Appropriate Regulatory Mechanisms

⁶ Seth A. Spawn *et al.*, *Carbon emissions from cropland expansion in the United States*, ENVIRON. RES. LETTERS 14 (2019), <https://iopscience.iop.org/article/10.1088/1748-9326/ab0399/pdf>.

⁷ UNITED STATES ENVIRONMENTAL PROTECTION AGENCY (EPA), BIOFUELS AND THE ENVIRONMENT: SECOND TRIENNIAL REPORT TO CONGRESS at 43 (June 2018), https://cfpub.epa.gov/si/si_public_record_report.cfm?Lab=IO&dirEntryId=341491.

⁸ Farzad Taheripour & Wallace E. Tyner, *US biofuel production and policy: Implications for land use changes in Malaysia and Indonesia*, 13 BIOTECHNOLOGY FOR BIOFUELS 11 (2020), https://biotechnologyforbiofuels.biomedcentral.com/articles/10.1186/s13068-020-1650-1?_ga=2.257034639.564950388.1642089054-2106591765.1642089053. This is consistent with a 2011 study. See Seungdo Kim & Bruce E. Dale, *Indirect Land Use Change for Biofuels: Testing predictions and improving analytical methodologies*, 35:7 Biomass and Bioenergy 3235–3240 (July 2011), <https://www.sciencedirect.com/science/article/abs/pii/S0961953411002418>.

⁹ Mendelson Lima *et al.*, *Deforestation and the Social Impacts of Soy for Biodiesel: Perspectives of Farmers in the south*, ECOLOGY AND SOCIETY 16:4 (Dec. 2011), <https://www.jstor.org/stable/pdf/26268958.pdf>.

¹⁰ Govinda R. Timilsina, *et al.*, *The impacts of biofuels targets on land-use change and food supply: A global CGE assessment*, 43:3 AGRICULTURAL ECONOMICS 315–332 (2012), <https://elibrary.worldbank.org/doi/abs/10.1596/1813-9450-5513>.

In suggesting the need for a reassessment of the state of the science on ILUC, Bunge does not mean to suggest that CARB must wait until significant impacts manifest before taking action to guard against them. Rather, CARB should commence a public process to reassess the state of the science and the effectiveness of the LCFS's existing ILUC factors, before undertaking any regulatory amendments. One relatively recent study, for example, modeled that inclusion of an ILUC factor in a national LCFS would provide significant additional abatement of cumulative emissions from 2007-2027 of 1.3 to 2.6 percent at a price in line with current Biden Administration assessments of the social cost of carbon.¹¹ Before departing from the market-based approach to mitigation of land use impacts reflected by the LCFS's existing ILUC scores, CARB should rigorously assess the connections between crop-based feedstocks and land use change, available tools that could be used to mitigate any such impacts, including potential amendments to the ILUC scores, and the negative consequences that an arbitrary limitation based on historic feedstock volumes would have on investment in advanced biofuels production.

As for available monitoring tools, Bunge would recommend that CARB review certification standards for deforestation-free biofuel feedstock.¹² These standards, along with rapidly advancing technology for monitoring deforestation and land use change, such as remote monitoring, could be employed to guard against impacts on land use and food supply. In the absence of a rigorous technological assessment that might identify alternative means for guarding against such impacts, however, CARB should not be proposing an instrument as blunt and potentially damaging to the biofuels market as an arbitrary cap on the volume of crop-based feedstocks.

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Bunge applauds CARB's continued efforts to set and meet ambitious decarbonization goals. We share CARB's optimism that the LCFS has served and will continue to serve as a powerful and exportable tool that can incentivize sustainable practices and products for the benefit of Californians and the environment. We look forward to working with CARB to explore how the renewable fuels industry's commitments to sustainability, deforestation-free crops, and

¹¹ See Khanna, M., Wang, W., Hudiburg, T. et al., *The social inefficiency of regulating indirect land use change due to biofuels*, NAT. COMMUN. 8, 15513 (2017). <https://doi.org/10.1038/ncomms15513> (projecting abatement achieved through inclusion of ILUC factors at a cost of \$61 to \$187 Mg CO₂e); EPA EXTERNAL REVIEW DRAFT OF REPORT ON THE SOCIAL COST OF GREENHOUSE GASES: ESTIMATES INCORPORATING RECENT SCIENTIFIC ADVANCES, Docket ID No. EPA-HQ-OAR-2021-0317 (Sep. 2022), https://www.epa.gov/system/files/documents/2022-11/epa_scghg_report_draft_0.pdf (proposing social cost of carbon of \$190 MTCO₂ at 2% discount rate).

¹² See, e.g., ROUNDTABLE FOR SUSTAINABLE BIOMATERIALS (RSB), RSB GLOBAL FUEL CERTIFICATION (noting that "In order to ensure that fuel production can demonstrate real greenhouse gas emission reductions while not contributing to issues like deforestation . . . the RSB has developed the most robust and credible standard for the production of fuels anywhere in the world."), <https://rsb.org/rsb-global-fuel-certification>; FEEDSTOCK SPECIFIC CERTIFICATIONS, ROUNDTABLE ON SUSTAINABLE PALM OIL (RSPO) (noting that certification "has strict deforestation cutoff requirements . . ."), https://cdn.scsglobalservices.com/files/program_documents/Feedstock_Specific_Certifications_onesheet_V1.3.pdf.

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traceability can be harnessed to send the most appropriate market signals and guard against unintended consequences.

Sincerely,

A handwritten signature in black ink, appearing to read "Robert Coviello". The signature is fluid and cursive, with the first name "Robert" and last name "Coviello" clearly distinguishable.

Robert Coviello

Chief Sustainability Officer and Government Affairs