



May 10, 2024

California Air Resources Board
1001 I Street
Sacramento, CA 95814

RE: April 10, 2024 California Low Carbon Fuel Standard Workshop

Dear California Air Resources Board,

Braya Renewable Fuels (Newfoundland) LP (“Braya”) is the owner of the Come By Chance refinery in Newfoundland, Canada. Braya recently completed the conversion of the idled conventional oil refinery to renewable diesel and sustainable aviation fuel production. The refinery is strategically located to source a variety of low-carbon intensity feedstocks and deliver fuels to various end markets, including California, to help meet LCFS demand and California’s broader greenhouse gas initiatives. Renewable diesel and sustainable aviation fuels help decarbonize sectors—heavy transport and aviation—that are key to economic activity and have few other near-term, executable decarbonization solutions.

CARB’s successful LCFS program has attracted global attention and has inspired other states and nations with its market-based principles, scientific basis, and feedstock- and technology-neutral approach. The LCFS has exceeded expectations, is over-performing, and is becoming increasingly diverse in approaches that serve to reduce and replace fossil fuels as part of its decarbonization efforts. The LCFS has made meaningful investments in low-carbon fuels a reality - Braya’s conversion of a conventional crude oil refinery to biofuels is a perfect example of achieving that goal.

We appreciate the opportunity to provide the feedback you requested during the April 10, 2024, Low Carbon Fuel Standard Workshop. We would also like to congratulate the CARB staff on handling a very long day and a difficult job well done.

Braya Opposes Artificial Cap on Vegetable Oil Feedstocks

We agree with CARB’s position that an artificial cap or immediate phase-out of crop-based biofuels would be detrimental to the goals of the LCFS program. CARB acknowledged that Internal Combustion Engines will be around for decades, that harder-to-electrify engines in heavy-duty trucks, aviation, and marine applications require near-term solutions, and that liquid biofuels play a vital role during the transition to electrification. Further, the infrastructure required for wholesale electrification will be an extremely capital and time-intensive endeavor. As a result, alternative fuels must be used as a bridge to this electrification goal, and the LCFS structure should support this bridge. During this time, lipid feedstocks are required to supply the large volumes of low-carbon intensity fuels needed to displace their petroleum-based counterparts. Without these fuels, demand for fossil fuels will increase significantly with inadequate viable alternatives.

Contrary to the presentation by the Environmental Justice Advisory Committee, the overwhelming evidence shows that CARB’s approach to biofuels does not contribute to deforestation. As presented in



our previous comments in response to the November 2022 and February 2023 workshops, a number of reputable studies have concluded that lipid-based feedstocks for biofuels do not impact food resources or cause deforestation and damaging land conversion. At present, crop-based feedstocks are needed to spur continued growth and investment in renewable diesel and sustainable aviation fuels, which are key solutions for decarbonizing the heavy transport, marine, and aviation sectors for the foreseeable future.

In our response submitted in December 2022, we provided evidence and a study conducted in November 2021 by LMC International (“LMC”) and commissioned by the Advanced Biofuels Association (ABFA), identifying global lipid demand from all sources and all end-users and the fact that the current crop-based feedstock supply exceeds biofuels’ forecast demand through 2030 while still meeting the demand for non-biofuel use. Further, the study assumed a maximum use of lipid-based feedstock for biofuels even though advances are being made regarding the use of wastes, starches, algae, and biomass, which will provide alternative feedstock supplies and naturally lower the demand for crop-based biofuels. The summary slides and 2030 conclusions can be found here: <https://advancedbiofuelsassociation.com/study-shows-available-advanced-biofuels-feedstocks-can-pace-biofuel-demand-through-2030/>.

Following the February 2023 workshop, Braya submitted additional relevant data in our responses in March 2023, utilizing the same scientific approach and presenting a Short-Term Outlook through 2025 developed by LMC in February 2023 (the “LMC Report”) in response to an updated request by the ABFA. The LMC Report identified a number of events that have occurred globally and have positively impacted the amount of available crop-based and lipid feedstocks. The LMC Report presents compelling evidence that the supply of fats, oils, and greases (FOG), as well as soybean and canola, have all increased and will continue to do so at no detriment to increased global demand or at the expense of the environment or society due to land use change. The LMC Report is located in Appendix 1 on Page 11 of the ABFA’s response to the EPA Set Rule on its website at the following location: <https://advancedbiofuelsassociation.com/wp-content/uploads/2023/02/ABFA-2023-Set-Rule-Comments-Final.pdf>.

Braya was pleased to see additional language in CARB’s April 10th presentation linking a number of the global factors referenced in the LMC Report to the increase in oil prices in 2021 and 2022, citing the USDA and the UN Food and Agriculture Organization. We were also pleased to hear concurrence with our own stance that soy oil also has the potential to lower both petroleum prices and meat prices. Also of note were CARB’s own comments and data concerning the fact that over 2.5 million tons of virgin oil can be used over waste oil at the same price, further enabling CARB to meet its goals while advances are being made on the electrification front. It is a simple issue of scarcity. Braya believes the supply of traceable and documented FOG feedstock will continue to be limited, and crop-based feedstocks will be required to fulfill CARB’s goals.

We re-emphasize that time and investment are still needed to continue growing the supply of second-generation biofuels. The efforts are underway, but the continued support of the LCFS will help make this goal a reality. To date, the LCFS has maintained an unbiased, technology-neutral approach, allowing the program to evolve naturally, without picking winners and losers, which has been a key to CARB’s success. CARB already has a stringent and ongoing review process in place to address indirect land use change (“iLUC”) applicable to biofuel incentives. This mechanism significantly penalizes producers that utilize crop-based feedstocks by elevating CI scores well above those of non-crop-based feedstocks. A



prohibition on crop-based feedstocks will increase costs across the board, including to end-use consumers, and stifle investment in the vital expansion of renewable diesel and sustainable aviation fuel supply that would otherwise continue as CARB strives to meet its electrification goals.

As noted by CARB during the April 2024 workshop, biomass-based diesel is a major contributor to the LCFS program, and Braya agrees that, provided appropriate incentives are in place, these volumes will continue to grow as a decarbonization method. Some experts project that North American biomass-based diesel production capacity will exceed 8 billion gallons by 2025. This growth, however, is contingent on adequate access to economic feedstocks. Artificially limiting crop-based feedstocks will likely jeopardize a significant portion of biomass-based diesel volumes that would otherwise be available to decarbonize the diesel pool. Instead, Braya believes that documentation and traceability based on actual feedstock data, including iLUC, is a more appropriate and accurate method of achieving meaningful CI reductions without jeopardizing needed renewable diesel growth.

Braya Supports Appropriate Guardrails and Sustainability Criteria for Crop-Based Biofuels

Given the importance of biofuels to CARB’s mission and the dramatic increase in these biofuel volumes, we support the application of appropriately tailored sustainability criteria for the crop-based feedstocks associated with this production. Notably, crop-based biofuels represent about 60% of liquid biofuels (discounting natural gas, hydrogen, and electricity) in the years 2021 to 2023, according to the most recent [LCFS Quarterly Data Spreadsheet](#) as available through the end of the third quarter of 2023. Indeed, these same crop-based fuels represented roughly 75% of the contribution to the success of the LCFS during the years 2011 to 2021. CARB reiterated this point during the April 10, 2024 Workshop.

Many other sources of feedstock are limited in quantity or can be difficult to trace back to the source of origin and are, therefore, not used at large. Advances in technology and feedstocks are being realized as evidenced by the declining relative share of crop-based fuels, but it will take time to generate significant volumes of these feedstocks as electric initiatives come to fruition. In the meantime, crop-based biofuels are critical to meeting the near-term needs of the market and to continue reducing the carbon intensity of fuels in industries that are notoriously difficult to decarbonize. In light of these realities, ensuring that the feedstocks being sourced for biofuels are truly sustainable is imperative. CARB stressed in the recent April workshop that guardrails are necessary, and Braya agrees. However, the efforts should be practical, and “prioritizing” waste oils over crop-based oils is riddled with its own set of well-publicized challenges concerning traceability and verification.

iLUC values and other upstream emissions should be accurate and updated from time to time to reflect the best available information. Traceability efforts to eliminate bad actors and detrimental situations are part of the solution. Beyond that, sustainability documentation, traceability efforts, and real evidence are practical tools to determine the most accurate iLUC and other upstream emissions values for any given feedstock. Many countries have adopted robust collection procedures and practices and have been doing so for decades to comply with other global initiatives. Jurisdictions that have not yet been developed have a wealth of resources available to assist underdeveloped programs. Countries should be encouraged to adopt these documentation practices by recognizing these efforts in the iLUC calculations.

Notably, the RFS utilizes a voluntary Quality Assurance Plan (QAP) program that would ensure that the bulk of the documentation CARB will require in respect of traceability documentation is already being collected and available. Braya is pleased to hear that new sustainability documentation requirements,



regardless of origin, are proposed to be required by January 1, 2028. In addition, the International Sustainability & Carbon Certification (“ISCC”), the Roundtable on Sustainable Biomaterials (RSB), and other schemes are already collecting documents to ensure that crop-based and forestry feedstocks are not cultivated from land that was put into production after a date that precedes CARB’s requirement of January 1, 2008. For example, Canada’s Clean Fuel Regulation now requires audited Land Use and Biodiversity declarations, and ISCC requires audited Sustainability Declarations.

Braya Supports Emission Factor Updates

The global agriculture industry has made significant investments in improved farming practices, feedstock processing, and decreased emissions at the biofuels facility level over the past decade or more. Paradoxically, the current CA-GREET3.0 model does not account for or reward these substantial improvements. Additionally, the current CA-GREET3.0 model lacks key customization features, such as not providing for specific vessel sizes (instead using wide ranges) and electricity mixes that are not representative of the various regions feeding into the LCFS. CARB has proposed to use an updated calculator CA-GREET4.0, in conjunction with the release of the new amendments, but much of the data is still woefully out of date. Specifically, the “Land Use Change” values for soy and canola oil remain unchanged at 29.1 and 14.5, respectively, as both calculators are based on a now decade-old GTAP-BIO model.

In June 2023, Floyd Vergara, former Chief and Assistant Chief in the Industrial Strategies Division and Research Division at CARB, overseeing the development of the LCFS, submitted public comments to CARB on behalf of Clean Fuels Alliance America (CFAA) and California Advanced Biofuels Alliance (CABA) in response to the May 31 and June 1, 2023, Low Carbon Fuel Standard Virtual Community Meetings: [Clean Fuels CABA Comments CA LCFS EJ Community Meetings May-June 2023](#). The evidence provided by Mr. Vergara uses the most recent updates to the Argonne National Laboratory calculators and GTAP modeling by Purdue in 2023 and conclusively shows that the iLUC scores being used by CARB in both the CA-GREET3.0 and CA-GREET4.0 models are grossly inaccurate and unfairly punitive to crop-based biofuels. Notable findings include:

- 2023 Purdue estimates for soy iLUC are 9.78 gCO₂e/MJ, compared to CARB’s 29.1 gCO₂e/MJ.
- Purdue used 4x the shock volume of 3.22 billion gallons in 2023 to achieve the 9.78 gCO₂e/MJ.
- Accordingly, CARB’s iLUC score of 29.1 for 800 million gallons is more than three times higher than the score that would result from using newer, more accurate evidence and methodologies.

We recommend updating the model used by CARB to reflect this more current and accurate data by reviewing Argonne and Purdue University’s most recent releases. Using the most recent accurate data will refute the argument that a cap on crop-based biofuels is needed. Regenerative agriculture and superior agronomic practices are being adopted globally, negating many of the arguments for limiting crop-based biofuels. Many countries, including Argentina, have been using these practices for decades on farmland that has been in place since at least the 1980s. This data is clearly shown by a number of studies, including the Organisation for Economic Co-operation and Development’s paper, [Agricultural Policies in Argentina](#). Additionally, CARB benefits from the RFS’ structure which requires evidence that crop-based feedstock must not be grown on land that was placed into production after December 19, 2007, as defined at [40CFR Part 80 §80.2 under “renewable biomass,”](#) exceeding the current requirements under the LCFS.



Finally, we support Mr. Vergara’s assertion that the use of biomass-based diesel is a significant positive factor in the health of citizens located in EJ communities, given that drop-in biofuels reduce diesel particulate matter by up to 80% in older engines, as shown in the CARB Assessment of the Emissions from the Use of Biodiesel as a Motor Vehicle Fuel in California [“Biodiesel Characterization and NOx Mitigation Study.”](#) As additional support, the CFAA engaged Trinity Consultants to prepare [a number of Health Effects Studies for CARB](#) on the positive impacts of using drop-in biomass-based diesel in place of petroleum diesel. Of note are the “immediate community health improvements that can be measured in reduced medical costs and health care burdens” and estimates that switching to biomass-based diesel could result in the prevention of “over 900 premature deaths per year, hundreds of thousands of asthma cases reduced or avoided per year, and reducing over 100,000 work loss days per year, totaling \$7 billion dollars per year in avoided health costs.”

Braya Supports Efforts to Swiftly Address the Impacts of Aircraft and Marine Vessels

Regarding disadvantaged communities and the discussions and heartbreaking testimonials throughout the April 10th workshop concerning airport and harbor employees and nearby residents, CARB should consider including the following recommendations as soon as possible in this and future rulemakings.

Several commenters indicated that the use of Alternative Jet Fuel (AJF) for intrastate flights as currently proposed is insufficient, representing a mere 10% of jet fuel emissions in California. Other commenters insisted that the airlines will not take action unless forced to do so. Eliminating the exemption for intrastate flights only is simply not enough when the bulk of emissions are produced by interstate flights. CARB staff should look to the International Civil Aviation Organization (ICAO) and the U.S. Department of Energy (DOE) as resources to determine how best to deploy and monitor such measures.

Understanding that there is not enough time to deploy immediately, reducing marine fuel emissions also needs to be a high priority. The U.S. and Canada have already started taking steps toward decarbonizing this sector. We look forward to the opportunity to work together with CARB staff to help make this a reality.

Braya Supports Credit True-Ups for Temporary Pathways

Braya applauds CARB for moving forward with the credit true-up for Tier 1 and Tier 2 pathways and is supportive of implementing a credit true-up for temporary pathways. Temporary pathways are inherently conservative CI scores; the longer a producer’s facility-specific CIs are under review, the greater the expected loss of revenue that can be so vital at the start of operations. A true-up based on facility-specific production data will not only support new biofuel producers but will also provide more accurate data for CARB to measure the program’s success in decreasing GHG emissions.

Similar to many other producers, Braya is constantly evaluating further capital projects to increase efficiencies and lower emissions. A true-up that would allow credit generators to be rewarded for reducing their CI scores over time would encourage these proactive and environmentally friendly projects.

Finally, we believe that CARB should synchronize efforts with other agencies to utilize data and precedents to streamline processes. Doing so would be of significant value, both to increase access to new pathways/new producers and reduce burdens on CARB’s resources and staff. For example, the EPA has a number of approved pathways based on GREET modeling for national and global feedstocks. CARB should



explore whether these pathways could be leveraged to establish a wider range of temporary pathways that could be used until facility-specific pathways (based on operational data) are fully available.

Braya Supports CARB’s Continued Advancement of the Standards

Using the 30% CI reduction scenario as a baseline, Braya believes the optimal approach is to implement a 9% step-down in target CIs in 2025. We believe that front-loading new CI targets will align with CARB goals and help repair credit prices that are currently significantly depressed due to a projected 27 million credit bank drawdown. Significant action is needed to support LCFS credit prices if the LCFS program is to achieve its stated goals.

As shown by CARB’s modeling, the proposed Auto-Adjustment Mechanism (“AAM”) has the potential to result in draconian credit drawdown scenarios. Braya believes the AAM is an important tool, but cautions that the scenarios modeled, such as the 5% CI step-down along with a double trigger of the AAM, may result in significant renewable diesel volumes being diverted away from California to other markets or even discouraging further investment in this space depending on AAM forecasted implications. While Braya supports the development of tools to advance the LCFS program, we believe that a transparent step-down of CI targets, along with more updated and accurate iLUC data, is a critical path to achieving meaningful carbon intensity reductions on a timeline compatible with electrification goals and realities.

Braya Supports Streamlining and Updating the Application and Review Process for Pathway Approval

By updating and improving the existing Lookup Table and Tier 1 calculators, in addition to adding new and/or separate Tier 1 calculators, CARB will be able to focus attention on critical new feedstock sources, availability, and supply, as well as new technologies, thereby expediting approvals for new Tier 2 pathways. Braya truly appreciates all the effort the CARB staff have put into this daunting endeavor.

Braya Supports Less Intensive LCFS Verifications

CARB staff’s current proposal includes a provision allowing less intensive verifications solely for electricity used as a transportation fuel by permitting verification bodies to skip site visits so long as they have visited the site within the last two (2) years and have issued a positive verification statement. CARB’s rationale included:

- “[T]here is little change of operation from reporting period to reporting period thus reducing the benefit of annual site visits.”
- “There is no or little risk to the integrity of the LCFS program to allow for less intensive verification services without a site visit in the annual verifications for the following two years.”
- “This should reduce the cost of verification services which is often passed on to program participants.”

We wholly agree with CARB’s statements above and believe they should apply to all validations and annual verifications for any reporting entities. In CARB’s MRR program (section 95130), less intensive verification is applied without prejudice to verification services by accredited verification bodies. We agree with staff that less intensive verification leads to little to no risk to the integrity of the LCFS program and that there is little change in operation from reporting period to reporting period, while also providing cost savings to verification providers that are then passed on to program participants.



Indeed, the U.S. RFS sets a precedent whereby engineering reviews are only required every three years unless there is a material change in the facility and/or its processes. Finally, we acknowledge the importance of adhering to CARB's specified conditions that necessitate comprehensive verification services. These conditions already include the issuance of an adverse verification statement or a qualified positive verification statement in the preceding year and the occurrence of a change in operational control of the reporting entity in the previous year.

Thank you in advance for taking the time to review our comments and solutions concerning these very important issues. We look forward to working with CARB and welcome any opportunities to discuss further and provide any additional assistance and insight.

Respectfully,

A handwritten signature in blue ink, appearing to read 'Jennifer M. LeRow', with a long, sweeping flourish extending to the right.

Jennifer M. LeRow
Director of Regulatory Compliance
Braya Renewable Fuels (Newfoundland) LP