FS
Fueling Sustainability

ENERGIA QUE ABASTECE O BEM

August 21, 2024
Liane Randolph
Chair

Steve Cliff
Executive Officer

California Air Resources Board
1001 I ST Sacramento, CA 95814
RE: FS Comments Relating to Proposed 15-Day Changes to Low Carbon Fuel Standard

(Comment submitted electronically)

Dear Chair Randolph and Executive Officer Cliff:

FS Indústria de Biocombustíveis Ltda (FS, Fueling Sustainability) appreciates the opportunity to provide comments regarding the recent modifications proposed by the California Air Resources Board (CARB) to the Low Carbon Fuel Standard (LCFS) regulations (the "15-Day Changes"). We appreciate the California Air Resources Board's (CARB) role in developing and implementing the vitally important LCFS program. Aligned with CARB's LCFS and climate policy objectives, FS produces extremely low carbon intensity (Low-CI) ethanol and works to develop and implement technical innovations that can contribute to and be recognized in the LCFS and other carbon reduction programs. We are submitting these comments to share our perspective with CARB regarding proposals of particular importance to FS, and to share our direct experience in participating and complying with certification schemes.

FS would like to emphasize at the outset that while this comment letter does provide strong suggestions and some criticism regarding two areas covered by the 15-day changes, there is a great deal in the LCFS rule package that we heartily support. We commend CARB for the establishment of the LCFS and view it as a model program for the decarbonization of the transportation sector. It is because the LCFS program is so critical to the development of low carbon fuels and technologies that we are heavily invested in providing constructive input such that CARB and the LCFS can continue to be world leaders in transportation decarbonization and climate policy design and execution.

FS, Fueling Sustainability

FS is the first Brazilian company to produce ethanol, animal nutrition products, and corn oil exclusively from second-crop corn. FS uses energy cogeneration from biomass to meet its own energy needs and to generate surplus electricity that is sold to the Brazilian electrical grid. We have developed a new low-carbon value chain that encompasses Low-CI second-crop corn, incentivizes sustainable forest cultivation, enables the production and sale of high-quality animal nutrition and ethanol products, and generates bioenergy and steam. FS has an integrated food and energy production system, a business model that uses second-crop corn as raw material. This strategy results in better use of available agricultural resources, increased yield per acre, reduced need for expansion of cultivated land, better sustainability and greater reduction of greenhouse gas (GHG) emissions.

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CARB Should Implement a Notice and Comment Period Focused on Technical Input Prior to Making Indirect Land Use Change Determinations and Recognize Fuel Combinations that Achieve Lower iLUC Scores

In the 15-Day Change proposed by the establishment of §95488.3(d)(2), CARB has proposed to undertake an unspecified process to potentially assign a more conservative land use change (iLUC) value when CARB determines that "no value in Table 6 is conservatively representative of a particular region/feedstock/fuel combination." The complete proposed subsection contains the following language:

> *(2) The Executive Officer may determine that no value in Table 6 is conservatively representative of a particular region/feedstock/fuel combination and assign a more conservative LUC value. Such determination must be based on the best available empirical data, including but not limited to satellite-based remote sensing data for land cover monitoring, crop yields, and emission factors from the AEZ-EF model or carbon stock datasets. For feedstocks not listed in Table 6, the Executive Officer may determine and assign an appropriate LUC value based on empirical land cover data, crop yields, and emission factors.*

To ensure transparency in determining carbon intensities under the LCFS, the Executive Officer should establish a clear process for determining and adjusting iLUC values. As CARB is well-aware, life cycle analysis (LCA) issues are complex and controversial and iLUC determinations can make or break a particular fuel's opportunity to participate in the California LCFS marketplace. In addition, CARB's initial determination for a particular region/feedstock/fuel combination will likely establish an iLUC value that will be applied to subsequent pathways that utilize this particular region/feedstock/fuel combination. Thus it is important that CARB establish a robust and public process prior to reaching these determinations.

This process should begin with preliminary communication and notification, with CARB committing to inform stakeholders in advance of any proposed iLUC value adjustments. Additionally, CARB should provide transparency in the methodologies and assumptions used. Before finalizing any changes to iLUC values, CARB should engage in a public consultation process, allowing for technical discussions where industry experts, stakeholders, and the public can contribute input on the proposed values and methodologies.

In addition to establishing a public process, CARB should also be open to the possibility of lowering an iLUC value rather than only adjusting iLUC values in a manner that is unfavorable to feedstock and fuels that are reviewed. We recognize that CARB will be consistently taking a conservative approach to iLUC values but cannot discern a sufficient rationale for CARB to only move iLUC values in one direction. To the extent that other regions of the world can provide feedstocks and fuels that are found to cause less land use change than regions already represented in Table 6, the resulting fuels should receive CI scores that reflect that better performance.

Brazilian second-crop corn provides an excellent example of why sufficient process and technical input is essential to LCFS policy design. This particular region/feedstock/fuel combination faces a significant challenge under the LCFS program due to the absence of a Table 6 value grounded on regional performance. The available global default value for corn

does not reflect the specific low-risk and Low-CI characteristics of Brazil's second-crop corn. We take this opportunity to request CARB's attention to the study and recognition of Brazilian farming practices, yields of double-cropped soy and corn per acre, the role of renewable biomass, the nature of second-crop corn and other factors that establish second crop Brazilian corn as a low-CI and low-ILUC feedstock and support Low-CI values for Brazilian Second Crop Ethanol**.** The main factors are highlighted below and warrant a robust review.

1) Improved agricultural practices and soybean-corn multi-cropping systems reduce the risk of iLUC.
2) Brazil has soybean land available that can be used to expand the production of second-crop corn, without requiring additional land.
3) A negative ILUC for Brazilian corn ethanol is documented in scientific literature.

Due to these factors, other jurisdictions with rigorous oversight programs have determined zero ILUC value for other multi-crops under specific conditions including the following.

1) The Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA) has determined zero or negative ILUC values for secondary (oilseed) crops.
2) CORSIA has determined a zero ILUC value for sequential cropping in general which includes 2nd crop corn.
3) Brazilian corn ethanol is classified as a Low LUC risk by the ISCC/CORSIA.

CARB Should Bifurcate Issues Pertaining to Forest Biomass from this LCFS Rulemaking to Receive Stakeholder Input Prior to Establishing a New and Highly Complex Woody Biomass Scheme

Regrettably, during the course of this rulemaking, CARB did not hold a workshop to discuss and examine the many complexities presented by forest biomass. CARB also did not share with stakeholders the extensive new language pertaining to forest biomass contained in the 15-Day Changes in §95488.8(g)(1)(A)(3) and the approximately six pages of new language proposed to be added to §95488.9(g).

FS respectfully submits that this LCFS proposal would have benefitted from a stricter reading of the California Administrative Procedure Act particularly given the tremendous wildfire risk in California that is fueled by such massive and dangerous quantities of forest biomass that the State has established a million-acre fire treatment strategy as further discussed by the comment letter of the California Forestry Association.

From the perspective of FS, the forest biomass scheme proposed in the 15-Day Changes is as completely unworkable in Brazil as it is in California. We do not think it feasible to propose simple fixes to make the scheme workable and would recommend that it be completely redesigned. However, we think this redesign is a process that will require many months if not a year. We also think it imperative that the many positive changes that CARB has made to the LCFS program should not be further delayed in terms of implementation. Therefore, we would recommend that CARB delete all of the new language pertaining to woody biomass from the LCFS rulemaking package and initiate a separate focused rulemaking that involves stakeholders and California agencies with forestry expertise in the process.

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In terms of preliminary comments from FS to inform this forest biomass process, we would submit the following. To ensure a comprehensive and accurate assessment of the life cycle analysis (LCA) for renewable biomass used in combustion — whether it is a forest/agricultural/industrial residue or a purpose-grown forest biomass — CARB should establish the following clear and detailed minimum requirements:

a. **Inclusion of Clear Definitions for Each Supply Chain Element:** This includes defining the Point of Origin, First Gathering Point, Processing Unit, and other critical links in the biomass supply chain. Clear definitions will ensure consistency and transparency in the assessment process.

b. **Specify Emission Factors for Biomass Combustion:** We request specific definitions regarding where the LCA for biomass combustion begins and ends. This clarity is essential for accurately calculating the carbon footprint and understanding the environmental impact of biomass used for energy generation.

c. **Definition of Waste/Residue:** To avoid ambiguity, it is essential for CARB to provide a precise definition of what qualifies as waste or residue, particularly in the context of energy generation. This clarity will be key in determining whether or not to account for upstream emissions of biomass in Tier 2 submissions.

Conclusion

We appreciate the opportunity to participate in this proceeding. Please count on FS for providing data and evidence, or any other support that CARB may need to pursue the listed topics.

Respectfully,

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Executive VP Sustainability & Businesses Development