



**Raízen Energia S.A.**

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August 23, 2024

The Honorable Liane Randolph  
Chair, California Air Resources Board

Steven Cliff  
Executive Officer, California Air Resources Board

1001 I Street  
Sacramento, CA 95814  
(Comments submitted electronically)

**RE: Raízen's Comments on Proposed 15-Day Changes**

Dear Chair Randolph and Executive Officer Cliff:

The recent modifications proposed by the California Air Resources Board (CARB) to the Low Carbon Fuel Standard (LCFS) regulations (the "15-Day Changes") present significant implications for biofuel producers globally. As one of the leading ethanol producers in Brazil, Raízen is deeply invested in the LCFS and broadly supports these changes, which will accelerate carbon intensity (CI) and petroleum reduction, phase in sustainability requirements, and promote advanced biofuels. From Raízen's standpoint, these changes resonate with our commitment to sustainability and innovation. These changes also have the potential to expand the global sustainable fuels market but to execute the revised LCFS effectively, it will be critical for CARB to work with stakeholders as CARB interprets and implements the sustainability and certification requirements.

Based upon our review, the proposed LCFS regulations provide an overall framework to advance to a more sustainable and rigorous program but do not explicitly establish precisely how the program will be administered. Raízen appreciates that CARB has deliberately built flexibility into the revised LCFS so that CARB can supplement program details through experience gained via implementation and interaction with stakeholders. Raízen encourages CARB to work closely with stakeholders to align the revised LCFS program with international standards, and to welcome global feedstocks and fuels that meet LCFS sustainability requirements. Already a global policy leader, CARB will need to further expand its international engagement to evolve the LCFS program to align with the dynamic and complex international policy environment.

**Emphasizing Certification and Sustainable Practices**

Raízen's sourcing of feedstocks and energy is already aligned with CARB's increasing emphasis on sustainability certification. Raízen's sugarcane production is certified by several internationally recognized sustainability schemes (e.g., ISCC, Bonsucro, Renovabio) ensuring compliance with global standards for

environmental and social responsibility.

Notably, Raízen's sugarcane plantations are located in regions where there has been a documented increase in native forests, contrary to the common narrative that biofuel production necessarily leads to deforestation. Raízen's experience and practices demonstrate that it is possible to expand biofuel production while contributing positively to the environment. This proactive approach positions Raízen favorably under CARB's proposed regulations, which will require full third-party certification by 2031. We would encourage CARB to scrutinize existing certifications schemes for full alignment with existing programs and thereby avoid doubling of efforts and conflicting standards. This will allow Raízen and other international market participants to seamlessly comply with these requirements and send a global market signal that will support sustainable biofuel production and not incentivize negative activities or outcomes.

### **E2G Technology**

One of the most significant aspects of CARB's proposed changes is the tightening of CI benchmarks for fuels. Raízen is particularly well-prepared to meet these challenges, thanks to our proprietary technology known as E2G, which converts sugarcane waste bagasse into ethanol. This second-generation ethanol technology utilizes agricultural waste as a feedstock and significantly lowers the carbon intensity of the resulting biofuel. The use of bagasse for biofuel production is not only scalable but the feedstock is also recognized as a residue according to the European Renewable Energy Directive (EU RED). This recognition means that bagasse is considered to have zero life-cycle GHG emissions up to the point of collection, giving it a significant advantage over feedstocks like soy, canola, and palm oil. Raízen is confident these advantages can drive further decarbonization under these regulatory changes. Furthermore, E2G (just like normal sugar cane ethanol) can be utilized in hard to abate sectors such as aviation, maritime shipping, and other sectors where electrification has significant limitations.

We anticipate that once Raízen's E2G technology is certified by CARB, it will achieve a CI score that is significantly lower than most other fuels currently in the market. The reduction in carbon intensity aligns with CARB's goals and provides California with the opportunity to achieve greater overall greenhouse gas emissions (GHG) reductions with the same volume of ethanol fuel which is critical given the regulatory blend level of E10 that currently exists. Brazil has deep and positive experience with higher ethanol blends. To facilitate more rapid achievement of California's petroleum and GHG reduction goals, Raízen encourages CARB to complete its review of E15 as quickly as possible and to continue its work to maximize E85 use in flex fuel vehicles (FFVs) and expand its fleet of FFVs via the Advanced Clean Cars rule.

### **Support for Sustainable Aviation Fuels**

Raízen also appreciates CARB's specific recognition of sustainable aviation fuel



(SAF) within the LCFS framework. As one of the few companies currently furnishing feedstock to the US SAF supply chain, we see this as a critical area of growth. CARB's support of bio-based SAF not only provides a clear market signal but also encourages continued investment and innovation in this sector.

The aviation industry is one of the most challenging sectors to decarbonize, and bio-based SAF represents a viable pathway to achieving significant carbon reductions. Raízen's involvement in this market demonstrates our long-term commitment to providing sustainable solutions across the full range of transportation fuels. The proposed LCFS changes by CARB will likely accelerate the adoption of SAF, accelerating GHG and petroleum reduction in this critical area.

### **Indirect Land Use Change Calculations**

We think it important to consider that via Section 95488.3(d) and associated Table 6, CARB has given itself the authority to assign a "more conservative" indirect land use change (iLUC) value when CARB determines that Table 6 "does not accurately reflect" the iLUC of a region/feedstock/fuel. CARB may also add new feedstocks/fuels to Table 6. Consistent with other LCFS provisions, we would recommend that CARB's process for changing iLUC values provides notice to stakeholders and the opportunity for public comment and particularly technical input. 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 to establishing a notice and comment 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 non-US sources of feedstock and fuels. 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 for non-US fuels 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 US fuels, the resulting fuels should receive CI scores that reflect that performance.

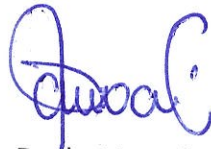
### **Conclusion**

The proposed modifications to the LCFS regulations by CARB reflect a forward-thinking approach to reducing GHG emissions and promoting sustainable biofuels. From Raízen's perspective, these changes align with our long-standing commitment to sustainability and innovation. Our certified supply chain, development of low-CI fuels through E2G technology, and leadership in the SAF market position us to meet new standards set by CARB.

Raízen supports CARB's proactive efforts to drive the adoption of low-carbon fuels. We are eager to collaborate with CARB both now and in the future, leveraging our expertise, certified supply chain, and innovative technologies to

meet and exceed the new standards. Raízen is committed to working closely with CARB to ensure that the transition to a low-carbon economy is both efficient and sustainable.

Sincerely,



Paulo Macedo

International Relations Director

Raízen