



BRAZILIAN SUGARCANE INDUSTRY ASSOCIATION

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December 5, 2014

VIA ELECTRONIC MAIL

John Curtis
Manager, Alternative Fuels Section
California Air Resources Board
1001 I Street
Sacramento, CA 95814

RE: UNICA's Comments on the updated Indirect Land Use Change Values

Dear Mr. Curtis:

The Brazilian Sugarcane Industry Association ("UNICA") appreciates the opportunity to provide comments on the California Air Resources Board's (CARB) Low Carbon Fuel Standard's (LCFS) revised indirect land use change (iLUC) values, which were presented at a workshop on November 20, 2014.

UNICA is the largest representative of Brazil's sugar, ethanol, and bioelectricity producers. Its members are responsible for more than 50% of Brazil's ethanol production and 60% of Brazil's sugar production. UNICA's priorities include serving as a source for credible scientific data about the competitiveness and sustainability of sugarcane biofuels. UNICA also works to encourage the continuous advancement of sustainability throughout the sugarcane industry and to promote ethanol as a clean, reliable alternative to fossil fuels. Sugarcane ethanol production uses less than 1.5% of Brazil's arable land and reduces lifecycle greenhouse gas ("GHG") emissions by up to 90% on average, compared to conventional gasoline. Also, thanks to our innovative use of ethanol in transportation and biomass for power cogeneration, sugarcane is now a leading source of renewable energy in Brazil, representing over 15% of the country's total energy needs. The industry is expanding existing production of other renewables products and, with the help of innovative companies here in the United States and elsewhere, is beginning to offer bio-based hydrocarbons that can replace carbon-intensive fossil fuels and chemicals.

We appreciate the effort CARB staff have placed in improving the iLUC modeling under the LCFS, reflecting the scientific progress in understanding iLUC dynamics and expert stakeholder input. We appreciate the opportunity to submit these comments and, as we have done in the past, will continue to engage with CARB staff to provide additional input and feedback on the LCFS.

UNICA applauds CARB for adopting “Approach B” on the land transformation structure, which allows one to identify with more accuracy how pasture and forest respond to cropland expansion. We have addressed this issue in the past on a number of our letters¹ to the agency and we are glad to see CARB incorporating this important improvement from Global Trade Analysis Project (GTAP) in the iLUC analysis.

While the sugarcane ethanol iLUC values were reduced by these improvements, we continue to believe that these values can and should be lower. After participating in the November 20th workshop, it is clear to us that CARB is pressured to finalize these updates on the model in order to present them to the Board in February 2015, but we urge the agency to continue to work on crop and region specific yield price elasticity (YPE) factor and the Agro-Ecological Zone (AEZ-EF) model within GTAP before the iLUC results are finalized.

Since CARB has indicated that crop and region specific YPE is the possible solution for representing double cropping within GTAP, UNICA urges the agency to work on this as soon as possible. As mentioned in previous correspondence, double cropping is a tropical land-saving technology that is growing in Brazil, and CARB needs to access this phenomenon and incorporate it in its iLUC analysis. On our October 15, 2014 letter² to CARB we have presented data that reflects the land saving effect of the soy-corn double cropping in Brazil, and supporting evidence to use a higher YPE value for the country. Additionally, double cropping systems have been growing in regions such as the U.S. and Canada and new evidence also shows that is a common practice in several developing countries, Babcock and Iqbal from Iowa State University presented a report last month addressing this exact issue³. The inclusion of parameters in global models representing double cropping is a top priority for several research groups, a good example is the GLOBIOM-iLUC study.⁴

Also noted in previous letters, is the response to yield-to-price changes for sugarcane. Given that sugarcane is a semi-perennial crop produced in a rotation system, with up to seven harvesting seasons before being replanted, price of sugarcane products influence yields in Brazil. As the figure bellow illustrates, yields increase significantly when producers renew their sugarcane fields, but given that the cost of

¹ UNICA’s letters to CARB are available at: sugarcane.org

² Letter found at http://www.arb.ca.gov/fuels/lcfs/regamend14/unica_10152014.pdf

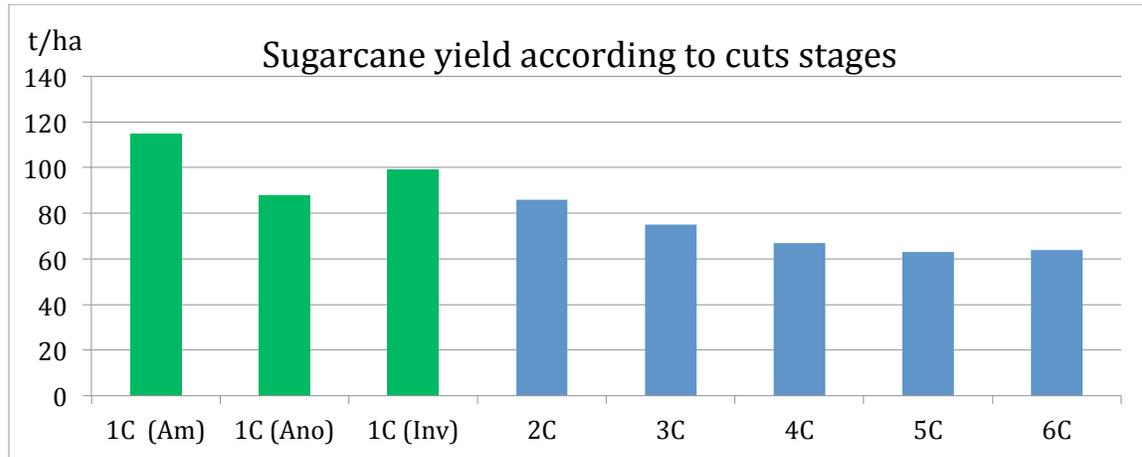
³ Babcock, B., Iqbal, Z., (14-SR 109). Using Recent Land Use Changes to Validate Land Use Change Models.

² Letter found at http://www.arb.ca.gov/fuels/lcfs/regamend14/unica_10152014.pdf

³ Babcock, B., Iqbal, Z., (14-SR 109). Using Recent Land Use Changes to Validate Land Use Change Models. Retrieved from <http://www.card.iastate.edu/publications/dbs/pdffiles/14sr109.pdf>

⁴ Valin, H., Frank, S., Pirker, J., Mosnier, A., Balkovic, J., Forsell, N., Havlik, P. (IIASA), (2014, October 30). Improvements to Globiom for Modelling of Biofuels Indirect Land Use Change. Retrieved from <http://www.globiom-iluc.eu/>

renewal is high, producers tend to renew only the necessary amount to optimize their yields. When price of sugarcane products is low, producers renew below ideal levels.



Source: CTC/UNICA.

The tree green bars represent the yield on the first harvest (according to different types of sugarcane planting seasons). The blue bars represent the yield from the second to the sixth cut. It is evident that yield reduces according to the cut stage. When the sugarcane producer decides to make a new rotation on his sugarcane field, the yield jumps from an average of 65 t/ha to more than 100 t/ha on the same land. When the price of sugarcane products are high, sugarcane producers have more incentives to have a higher yield through investments in new ratoons. CARB has quoted that several studies have indicated no yield price trends. Those studies, however, have developed empirical analysis based on annual crops, which do not represent a semi-perennial crop such as sugarcane. We believe the way to capture the double cropping effect in Brazil is to run GTAP with higher values for YPE, like we did back in October 2014 when we send you comments on this issue. We would like to, once again, suggest that CARB sets YPE for soy and corn in Brazil in the upper value (0.35) as an attempt to capture the double-crop effect.

In regards to AEZ-EF model, UNICA is not clear on the specifics improvements that were done in regards to stock of carbon and emission factors and would like to request that CARB makes the AEZ-EF spreadsheet available so we can better identify these parameters and check consistency for the Brazilian case. Once the spreadsheet is made available UNICA will be in a better position to offer specific comments and input to CARB.

UNICA recognizes the amount of work that CARB staff and its collaborators put in these analysis and the fact that such detailed and complex work takes time to be completed. We also understand that staff is working under a very tight deadline given the February 2015 Board meeting date. However, we believe that CARB needs to take into considerations these important points we raised here before you finalize your iLUC

numbers this year. We remain at CARB's disposal to address in detail any item raised by us and help clarify any doubt you may have.

We believe that CARB's work and improvements on iLUC calculation puts California a step closer to fully achieving the economically and environmentally beneficial goals of the LCFS, and we remain committed to help CARB in its work.

Respectfully Submitted,

A handwritten signature in blue ink, appearing to read "E. Farina", is written over a faint, light-colored map of the state of California. The signature is fluid and cursive.

Elizabeth Farina
President & CEO

A handwritten signature in grey ink, appearing to read "Leticia Phillips", is written in a cursive style.

Leticia Phillips
Representative – North America