April 22, 2009

California Air Resources Board

Headquarters Building

Sacramento, CA 95812

REF: Significant uncertainty surrounds Indirect Land-Use Change (ILUC) estimates; therefore ILUC factors should be excluded until better data and documentation are available and scientifically peer-reviewed

Dear Board Members:

We applaud your pioneering efforts to establish a LCFS and support your initiatives to reduce emissions and improve welfare for present and future citizens.

We are writing to recommend that CARB reconsider the proposal to include indirect carbon emissions from land-use change (or Indirect Land-Use Change – ILUC – factors) in the Low Carbon Fuel Standard (LCFS) rule. A delay in adopting the ILUC component of the proposal for GHG emission calculation is warranted because current ILUC emission factors are theoretical estimates rather than science-based calculations and inclusion runs the risk of undermining a very important initiative.

The ILUC estimates carry significant uncertainty because they are based on: (a) a model that was never validated or calibrated for the purpose of estimating land-use change; (b) input data for land use with degrees of uncertainty much larger in magnitude than the changes modeled, casting considerable doubt on the validity of results; (c) one set of modeling results when the same model produced wide-ranging results for indirect land-use change in response to minor adjustments in assumptions and inputs (and there is ongoing debate surrounding the accuracy and validity of many of those assumptions, factors and inputs) as documented in the papers published on the GTAP website and for CARB in the past 24 months; and (d) a hypothesis for indirect land-use change that does not meet the “rules of reason” tests established in US courts for indirect environmental impacts, exposing the LCFS rule to potentially serious implementation obstacles that could be avoided if the ILUC component were postponed until better data and analytical tools are developed.

Our examination of the land use and economic models show that there is not currently any accepted approach for calculating indirect land-use change impacts from U.S. biofuel production and policy. Mr. Oladosu (co-author of this comment letter) is an economist who has worked with the GTAP and other global equilibrium models. GTAP has not been calibrated or validated for making land-use change estimates. The GTAP modeling assumptions used to estimate ILUC do not come close to reflecting the conditions and forces that prevail in the areas where impacts are estimated to occur. Baseline land-cover and land-use data and other underlying assumptions for the modeling carry huge uncertainties, yet these uncertain inputs determine the results. The sensitivity of results is illustrated in part by the wide range of ILUC results reported among the GTAP reports issued on this topic in 2008 and 2009.

Several US Court decisions have considered if and when indirect environmental impacts need to be incorporated under proposed government projects. The decisions can be assembled under “rules of reason” that help determine when indirect impacts should be incorporated. The basic question is, “Are the impacts (indirect land use change effects, in this case) reasonably certain to occur *as a result of proposed action*, or is the estimate (of ILUC) based on speculation?” There is a lack of consensus on this issue in the scientific community. But, several considerations from past court cases may help answer the “rule of reason” question:

1. Are estimated ILUC impacts speculative within the context of all the other events, circumstances and contingencies that exist to enable the effect (e.g. deforestation)?
2. Is the impact (loss of natural habitat/deforestation) inevitable, independent of the proposed action and the theorized indirect impacts?
3. Does the “precautionary principle” clearly favor one proposed action over another? (e.g. What are the impacts on land use change and deforestation if less biofuels are accepted under LCFS due to the assumed ILUC factors?)
4. Is the estimated impact increasingly tenuous as inquiry extends outward from the core project area?
5. If there is a “reasonably foreseeable” indirect impact, does it occur in a remote locale that is not under direct U.S. control?
6. What is the “legally relevant cause” of the impact? (Is the ILUC impact isolated from the proposed action?)

When a reasonable person asks these questions, can it be concluded that the estimated indirect impacts are caused by the proposed action? In the case of the California LCFS, rather than include ILUC factors at this time as proposed, we recommend that a more prudent approach would be to identify these as possible indirect impacts and recommend mitigations to limit the likelihood of negative effects. Such mitigations could include adherence to sustainable production standards that are developed and monitored by third parties.

Keith Kline (co-author of this comment letter) has spent over twenty years, the majority of his professional career, working on international programs to protect biodiversity, promote sustainable development and reduce deforestation. In that capacity, Mr. Kline witnessed tremendous land conversion impacts, direct and indirect, of oil and gas exploration activities in developing nations. These are driven by world demand for petroleum products but are overlooked in the proposed CARB rule. Such resource extraction activities may very well be among the most significant factors contributing to the accelerated loss of natural habitat in the remaining forest zones of our planet.

We have also witnessed “market-mediated” impacts in forest frontier zones of developing nations and found that improved prices and expanded market options for products, as expected under biofuel policies, reduce pressures for deforestation and provide tools and incentives to promote more sustainable land use.

In sum, the market-mediated land-use change impacts hypothesized by GTAP and similar economic models are not merely inaccurate estimates; they may indeed be the opposite to what could be expected in the real world, particularly when one looks at first time forest conversion and biofuel production backed by incentives for sustainable production, environmental legislation and enforcement. More research is needed to better understand the interactions among these factors, going beyond theories, to calibrate and validate models that reflect how behavior is impacted, and to better quantify the degree and direction of impacts from biofuels.

Sincerely,

Keith Kline and

Gbadebo Oladosu