



October 14, 2014

Mr. Richard W. Corey, Ph.D.
Executive Officer
California Air Resources Board
1001 I Street
Sacramento, CA 95814

VIA Electronic and Postal Mail

Dear Dr. Corey:

Thank you for the opportunity to participate in the September 29, 2014 workshop on land use change (LUC) emissions. Thank you also for agreeing to provide the updated GTAP model to aid in our evaluation of your latest work in estimating LUC emissions from various feedstocks, and for agreeing to provide the two WRI reports used to evaluate irrigated versus rain-fed cropland.

While some progress in estimating land use emissions has perhaps been made, we have a number of concerns with ARB's presentation and some of the statements made by Staff at the workshop. We summarize each of these concerns below. This letter does not constitute our full comments on the information presented at the workshop, these comments will be submitted by our organizations on or before the due date. However, we thought it was important to highlight these concerns now.

1. AEZ-EF Model

Little has been done to address comments raised on the March 2014 workshop material with respect to the AEZ-EF model. Staff cited contractual reasons for not making progress in this area. However, this now puts ARB in the position of having very little time to address very significant concerns raised by the industry and others. At the same time, while Staff has not made progress in this area, the Staff presentation at page 7 indicates that "minor changes will be made in October 2014", and that the "impacts on ILUC are expected to be negligible." If Staff has not done this work yet, how does Staff know that the impacts on ILUC are expected to be negligible? The comments that were submitted to the Staff following the March workshop, if implemented properly, would not have negligible effects on the emissions. We are therefore disappointed that (1) Staff had not made any progress in this area since March, (2) Staff feel they must now rush to make progress because of deadlines, and (3) Staff are already discounting any impacts these changes may have. This is not a good approach to improving the science of land use change emissions, as it applies to a newly adopted LCFS.

2. Irrigated/Rain-Fed Cropland

Working with Purdue, Staff developed separate rain-fed and irrigated cropland categories in GTAP, so that Staff could evaluate the LUC impact of limiting the growth of irrigated cropland where there appears to be evidence that this growth is limited. Since yields are higher on irrigated farmland, this has the effect of lowering the overall new land converted to crops. Staff indicated that the effect of including these new land categories was “small”, however, it appears that this comment was based on what would happen between a scenario where some land has irrigated cropland with limitations to a scenario where all land has irrigated cropland with limitations. This is not the correct comparison. The comparison should have been between some irrigated cropland with limitations and no irrigated cropland with limitations (i.e., the baseline model without this change). Staff indicated this latter effect could be up to 5 g/MJ. Given that the new LUC for corn ethanol is 21.6 g/MJ from ARB’s most recent modeling, 5 g/MJ, if it applies to corn ethanol, is hardly “small.” We will be evaluating this impact in more detail prior to submitting comments on October 15, including the underlying data and rationale developed by WRI for limiting irrigated land expansion in the various AEZs.

3. Effect of Double-Cropping

Double-cropping is not an uncommon practice in many parts of the world when commodity prices are high. Double-cropping directly reduces the pressure to convert pasture, cropland pasture, and forest to crops. There are numerous examples of this. It has been well known that GTAP does not yet account for double-cropping, and since the LCFS was first adopted, comments have been submitted to ARB that ARB should evaluate the LUC impacts of double-cropping. The Expert Work Group elasticities sub-group suggested that if GTAP cannot be modified to directly address double-cropping, the yield-price elasticity could be used to simulate double-cropping effects. And yet, ARB has done nothing in this area. ARB has not even run “what-if” scenarios to determine what kind of impact double cropping would have on the results in countries like the US and Brazil, especially now ARB has apparently modified the model to allow the use of different yield-price elasticities for different crops in different AEZ regions. ARB’s lack of progress in this area is unacceptable in improving LUC estimates.

4. Yield-Price Elasticity

ARB attempted to show 2 charts (pages 27 and 28 of the presentation) to support its claim that the price-yield elasticity could be zero or very close to zero. The first chart plotted yield vs price for US corn from FAO data from 1990-2013. The chart appeared to show no relationship. However, one would never really use this kind of approach to develop a relationship between yield and price; there are simply too many factors changing from year-to-year to develop such a relationship. The second chart was a trend plot of corn yield and price from 1990-2013 (using the same data as the first chart). Since the second chart was a different way of presenting the same data as in the first chart, the same comment applies: there are too many things changing to develop any relationship of yield versus price in these data. ARB made no attempt to isolate just the impact of price changes on yields. Therefore, these two charts prove nothing. Purdue’s estimated price yield value is 0.25. ARB evaluated a range from 0.05 to 0.35 (minus 0.2 from Purdue’s estimate, and plus 0.1 from the Purdue default). The average from ARB’s range is 0.19, 24 percent lower than the value recommended by Purdue. We support analyzing a range of price-yield elasticities, but this range should be from

0.15 to 0.50 with an average somewhat above 0.25 to simulate some double cropping (as recommended in the RFA comments on the March 11 workshop), not 0.15 to 0.35 (which has an average below the value recommended by Purdue without any double cropping).

5. Cropland Pasture Elasticity

Staff estimated two cropland/pasture elasticity scenarios – 0.4/0.2 for US/Brazil, and 0.2/0.1 for US/Brazil. The 0.4/0.2 is the Purdue-estimated set of inputs. Staff has presented no support for its 0.2/0.1 set of inputs, it is simply less than the Purdue-estimated values. Again, if a range is to be used, unless there is specific evidence otherwise to show that the Purdue-estimated values are too high, then the range should be on either side of the Purdue-estimated inputs.

6. Comparison of GTAP Outputs With World Data

ARB has received comments from stakeholders that it should compare GTAP's land use changes to real data. ARB rejects this type of comparison as "not productive", because GTAP is evaluating a single factor (increase in biofuel demand) while factors affecting land use changes in the real world are multiple. ARB then showed charts that compared world forest changes from 2000-2012 with GTAP-estimated changes for several feedstocks. The forest changes for the biofuels were very small in comparison with total forest changes from 2000-2012.

We find ARB's excuses on making no attempt to calibrate land use changes to real world data troubling. The expansion of corn ethanol in the US is predicted by GTAP to have converted 75,000 ha of forest in the US. GTAP also knows where in the US that forest is getting converted. If 75,000 ha of managed forestland have been converted to crops in the last 10 years due to biofuel expansion, then it should be apparent from satellite or other data. ARB should have attempted to validate forest conversions, at least in the US, if not in other major countries with predicted forest conversion.

We find it troubling that ARB apparently does not believe it is productive to validate model predictions by examining real-world empirical data and trends. The principles of sound, science-based policymaking and regulation dictate that model predictions should be validated when possible. Given that ARB's GTAP shock is meant to simulate impacts from 2001-2015, we now have real-world data for the majority of that period.

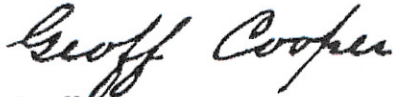
7. Effect of Fertilizer, Livestock, and Paddy Rice Emissions

The industry first made comments that ARB should evaluate these 3 effects several years ago. ARB has failed to do anything about these issues. EPA evaluated these in 2010 as a part of the RFS. They had a significant impact on EPA's LUC estimates. ARB cites a concern with double counting emissions between GTAP and GREET. EPA, however, also used GREET for direct emissions, and did not have a concern with double counting. ARB has completely failed to explain why it cannot include factors at this time in this update to LUC emissions that EPA successfully included in its analysis 4 years ago as a part of the RFS.

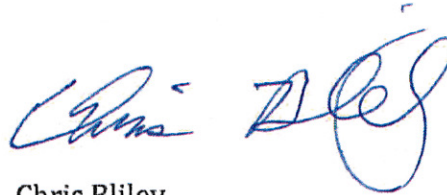
Summary

ARB has perhaps made some progress in updating LUC emissions as part of the LCFS. However, we have serious concerns with the lack of progress in these other areas. There are far too many items that Staff is pushing off to some future update of LUC emissions.

Respectfully,



Geoff Cooper
Renewable Fuels Association



Chris Bliley
Growth Energy

cc:

Mary D. Nichols, Esquire, Chair, California Air Resources Board
Mr. Michael Waugh, Chief, Transportation Fuels Section
Mr. John Courtis, manager, Alternative Fuels Section
Mr. Anil Prabhu, Ph.D. Alternative Fuels Section