RFA Comments at March 27, 2009 ARB LCFS Workshop

AIR, Inc.

Overview

- AIR Land Use Study on corn ethanol
- Baseline AFCI
- Alternative Compliance Scenarios
- ARB’s Cellulose ILUC

AIR Land Use Study on Corn Ethanol

- Released on Feb. 25
- Available at www.ethanolrfa.org
- “Top down” study of land converted to meet 15 bgy of corn ethanol by 2015
- Utilizes detailed projections of demand and supply by Informa Economics, LLC
- Utilizes latest research on DG use by Argonne National Labs (September 2008 report)
- Major grain exports from U.S. are constant or increasing
  - No international land use changes under these conditions

AIR Land Use Study on Corn Ethanol

- Takes into account yield increases for major crops
  - Corn at 183 bu/acre in 2015
  - Also examined USDA proejction of 170 bu/acre
- Conclusion: no land use changes for 15 bgy corn ethanol
- Contains significant discussion on differences with GTAP and Searchginer, et al

Baseline AFCI

- 10 % reduction based on CARBOB + 10% corn ethanol
- No other ethanol feedstock in baseline
- This means corn ethanol must compete with itself
- If there is little or no LUC from corn, the GHG credit for corn ethanol is already in the baseline
- Baseline for gasoline should be CARBOB AFCI, not CARBOB+ 10% corn ethanol
  - Similar to diesel, where baseline is 100% diesel

Effect on Compliance

- Without LUC for corn, 30/35/35/ mix of corn/cellulose/wood residue yields:
  - 10.1% reduction from CARBOB ACFI
  - 8.6% reduction from CARBOB+10% ETOH ACFI
- With LUC for corn, 30/35/35 mix of corn/cellulose/wood residue yields:
  - 9.0% reduction from CARBOB
  - 7.5% reduction from CARBOB+10 % ETOH ACFI
- Proposal is not fuel neutral w/r to corn

ARB Cellulose LUC

- Used land use database not included in GTAP
  - Idle lands
  - Cropland pasture
- Assumed marginal lands converted to switchgrass emits carbon at a rate of only 25% of Woods Hole rate for grass (no forest)
- Not consistent with use of GTAP model for other feedstocks
- If idle land were included in GTAP as it should be, there would be no forest cleared for other feedstocks
- This needs a lot more explanation of how it is consistent or not with the other feedstocks

Other Concerns

- Exogenous yield adjustment still problematic
  - Method makes many untested assumptions
  - Inconsistency between years
- Need fuller range of land use sensitivity cases
  - Yield adjustment and DG land use credit
- GREET estimates for corn
  - Should use energy method for coproducts to be consistent with other feedstocks
  - Should remove sillage from ethanol
  - More appropriate mix of plants using wet DGs

Third-Party Analytical Efforts to Support RFA Comments

Ongoing Analytical Efforts

- ***Review of assumptions on DG displacement***
  - Prof. Gerald Shurson, U of MN, Dept. of Animal Science
  - Review of LCFS ISOR Appendix C11; & ANL DG Report (Arora et al.)
  - **1 lb. of DG replaces 1.244 lb. of base feed**
    - vs. Argonne assumption of 1/1.271
    - vs. ARB assumption of 1/1
  - **27% of displaced feed is soy meal**
    - vs. Argonne assumption of 24%
    - vs. ARB assumption of 0%
  - Beef, dairy, swine, *and* poultry
  - ***Impact = ILUC emissions reduction of ~15 g CO2eq./MJ***
  - Scheduled for release Monday, March 30

Ongoing Analytical Efforts

- ***Evaluation of emissions accounting methods***
  - NERA Economic Consulting
  - Evaluation of methods outlined in ISOR
  - Evaluation of project horizon & impact horizon
  - Proposes “Economic Damages” method
    - Examines social costs of each ton of emissions
  - Report in Mid-April

Ongoing Analytical Efforts

- ***Review of GTAP treatment of yield growth***
  - Prof. Paul Gallagher, Iowa St. U., Dept. of Economics
  - Review of GTAP assumptions on crop yields
  - Evaluation of “external adjustment” to yield
  - Review of yield-related elasticities
  - Results of alternative modeling exercises
  - Report in early April
  - *Informa Economics also evaluating yield treatment*