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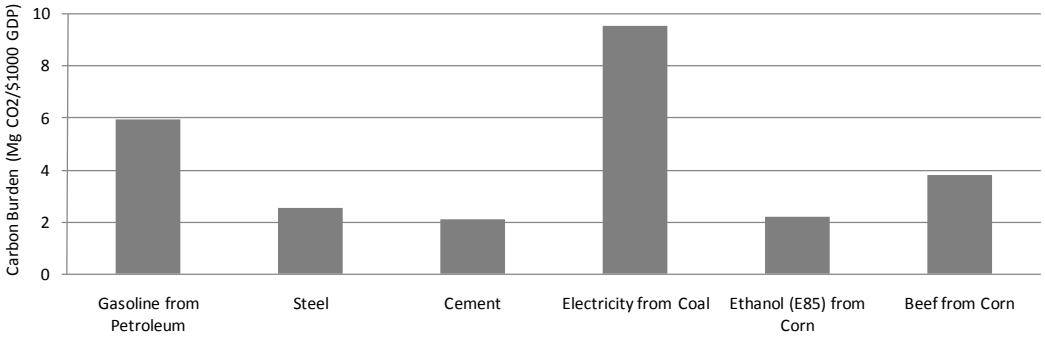
Mary. D. Nichols, Chairwoman
c/o Clerk of the Board
Air Resources Board
1001 I Street
Sacramento, CA 95814

Dear Ms. Nichols:

California's proposed Low-Carbon Fuel Standard (LCFS) is one of the nation's first attempts to implement greenhouse gas (GHG) policy. We hope the policy that emerges is not merely a first attempt at regulation but ultimately proves to be an effective mechanism for GHG reduction because it will set precedent for the nation and possibly the rest of the world. We are concerned that as currently proposed the LCFS will be ineffective in reducing greenhouse gas emissions as well as inadvertently slowing the deployment of technologies that can reduce our reliance on petroleum and other fossil fuels.

Fundamentally, the LCFS fails to address the fact that all economic activity generates GHG emissions. Under the proposed rules, only transportation fuels are held accountable for the burdens of carbon that are discharged into the atmosphere. Although no national inventory has been completed on the carbon burdens of the various goods and services generated by our economy, they are not difficult to estimate on the basis of megagrams (metric tons) of carbon dioxide equivalence per $1000 of gross domestic product (Mg CO_2/$1000 GDP). For example, steel, concrete, and corn ethanol all produce about two tons of carbon dioxide per $1000 GDP. Beef from corn-fed cattle is four tons, gasoline from petroleum is six tons, and electricity from coal is almost ten tons. Clearly, products and services other than transportation fuels place significant carbon burdens on the atmosphere, which the LCFS does not address. Although some would argue that it is a start, we must not let it be a false start, slowing the ultimate goal of actually reducing the amount of greenhouse gases in the atmosphere. Recent proposals to include indirect land use change (ILUC) considerations in the calculation of lifecycle GHG emissions for transportation fuels is an attempt to correct for the shortcomings of LCFS as originally formulated, but it will likely prove a false start in meeting the challenge of global climate change.



All economic activity generates greenhouse gas emissions. The Low-Carbon Fuel Standard does not effectively address the ultimate sources of carbon being discharged into the atmosphere. Source: Brown and Gifford (Iowa State University).

As described last year by Searchinger et al.[1] and Fargione et al.[2], one possible outcome of a LCFS that excludes other kinds of economic activities in the calculation of GHG emissions is a net increase in GHG emissions. They developed scenarios for corn ethanol production that assumed the resulting corn deficit in world markets would be filled by farmers converting rainforests and grasslands to agricultural lands. Depending upon the assumptions employed for this land conversion, the net carbon dioxide emissions potentially could overwhelm the emissions saved by using biofuels in place of gasoline. Both groups of researchers argue that this deficit, although not directly the result of biofuels agriculture, should be made the responsibility of ethanol producers. To many, this so-called indirect land use change argument seems eminently reasonable in the face of environmental policy that only holds certain sectors of the economy responsible for GHG emissions.

On the other hand, one has to question the wisdom of adopting a policy that so grossly distorts responsibility for net GHG emissions that it is unlikely to be effective in reducing them. The problem with using ILUC to assign responsibility for net GHG emissions is of two kinds. First, field research demonstrates that GHG emissions associated with land-use change are driven by many cultural, technological, biophysical, political, economic, and demographic forces rather than by a single crop market.[3] Accordingly, it is virtually impossible for the biofuels industry to affect the course of land use change outside the value-chain of its own feedstock suppliers. This is made abundantly clear in comparing the 20 million acres of cropland that has been devoted to ethanol production in the U.S. over the last decade to the 500 million acres of Brazilian rainforest that disappeared over a similar period of time.[4] The inclusion of ILUC in calculating the LCFS will have virtually no influence on the course of land use change in the developing world or the associated GHG emissions. On the other hand, the nascent biofuels industry, if saddled with the GHG emissions generated by other sectors of the world's economy, will not be able to compete in energy markets.

Second, a GHG policy that makes exceptions for some sectors of the economy and shifts the associated carbon burdens to other sectors is likely to encourage further growth in GHG emissions. As the Searchinger and Fargione studies revealed, burdening biofuels agriculture while exempting food agriculture could have the effect of encouraging unsustainable land stewardship in the developing world with the perverse outcome of increasing net GHG emissions around the world. All economic activity should be directly responsible for the GHG emissions emanating from them if this situation is to be avoided.

We encourage the California Air Resources Board (CARB) to consider more effective mechanisms than ILUC for controlling GHG emissions including application of a low carbon standard to all goods and services in our economy, both domestically produced and imported. In this way we can reduce GHG emissions while encouraging development of biofuels technologies, which have so much potential to reduce dependence on imported petroleum and help mitigate global climate change.

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1 Searchinger, T., Heimlich, R., Houghton, R. A., Dong, F., Elobeid, A., Fabiosa, J., Tokgoz, S., Hayes, D., and Yu, T.-H. (2008) Use of U.S. Croplands for Biofuels Increases Greenhouse Gases Through Emissions from Land-Use Change, Science 319 (5867) pp. 1238 – 1240; originally published in Science Express, 7 February, DOI: 10.1126/science.1151861.

2 Fargione, J., Hill, J., Tilman, D., Polasky, S., Hawthorne, P. (2008) Land Clearing and the Biofuel Carbon Debt, Science 319 (5867) pp. 1235 – 1238; originally published in Science Express, 7 February, DOI: 10.1126/science.1152747.

3 Kline, K. L. and Dale, V. H. (2008) Biofuels: Effects on land and fire; Letter to the editor, Science 321, 199.

4 Glantz, M. H., Brook, A. T., Parisi, P. (1997) Rates and Processes of Amazon Deforestation, National Center for Atmospheric Research, available on the Web: http://www.ccb.ucar.edu/rates/rateschart.html (accessed April 2, 2009).

Sincerely,

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