



April 20, 2009

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California Air Resources Board  
Clerk of the Board  
1001 I Street  
Sacramento, CA 95814

Subject: Proposed Regulation to Implement the Low Carbon Fuel Standard (LCFS)

Dear Clerk of the Board:

Tesoro Corporation is an independent refiner and marketer of petroleum products. Tesoro operates seven refineries in the western United States with a combined capacity of approximately 660,000 barrels per day. We operate the Golden Eagle refinery in Martinez, CA and the Los Angeles refinery located in Wilmington, CA, and we are the second largest refiner of clean fuels for the state of California.

Tesoro has participated in the LCFS process directly and through the Western States Petroleum Association (WSPA). The LCFS is an unprecedented effort to reformulate California's gasoline and diesel supplies and relies on technology forcing regulations to eventually reduce fuel carbon content. The clear problem and most significant issue facing CARB and the state is that there are not adequate amounts of commercially available "low carbon" alternatives to meet the goals of the LCFS in the short term. There is also no certainty of their availability in the longer term. The result is the very real possibility that the LCFS will disrupt California's transportation fuel supply system. The LCFS economic review completed by CARB leaves many unanswered questions. For example, the absence of a rigorous "supply demand" analysis inhibits CARB from considering the programs impact on reliable and affordable fuel supplies in California's future.

There are portions of the regulation that are not yet complete that we believe must be addressed before the LCFS can be adopted. We urge you to direct CARB to complete the entire regulation before moving to adopt.

Tesoro is a member of the WSPA and we have participated in the development of previous comments submitted to CARB regarding LCFS. Tesoro concurs with and hereby incorporates by reference comments submitted by WSPA.

Tesoro's specific comments follow:

### Determination of Carbon Intensity Values

We applaud CARB's commitment to determine "the total direct and indirect emissions associated with production, distribution, and use of all fuels through conducting complete lifecycle analyses based on the best available science"<sup>1</sup>. We agree that increasing the use of crop-based biofuels would directionally cause land to be moved from other uses to grow those fuels. The GHG emission effects of pulling any acreage out of grasslands or forest lands into cultivation is clearly one factor that should be included and staff has properly included this as the indirect land use change (iLUC) factor.

Staff did not however, include another indirect effect that could be just as significant -- "intensification" of crop production in response to the increased crop demand and resulting price signal. Staff states that farmers would among other things, "take steps to increase yields beyond that which would otherwise occur"<sup>2</sup>. For some reason, this issue is not discussed further in the ISOR and ignoring this may be a significant oversight in the analysis methodology. Even a fraction of a percent increase in world-wide farming GHG intensity that results from increased crop-based biofuels demand could have an even greater effect than iLUC.

Even to someone who is not trained in agricultural science, it seems obvious that a farmer today can grow more crops either by using more land or more fertilizer and/or water. To an economist, it is obvious that the incremental crop yield using the same land and more fertilizer and/or water would come at a higher direct GHG impact than would the base crop.

***Increased world-wide farming intensity that would result from more crop-based biofuels use should be evaluated and included as an indirect effect for those fuels.***

### Land Use Conversion Factor

Staff is proposing an arbitrary divisor to distribute the initial iLUC emissions to subsequent years. While this method is simple, it does not utilize the best available tools to assign an average GHG emission factor to iLUC effects. Since the basis for the LCFS regulation is climate modeling, we believe the more accurate and more science-based approach would be to use those models to compare the effect of a pound of CO<sub>2</sub> emitted today to a pound of CO<sub>2</sub> in the future. This would be a better basis to factor each according to its effect.

***We support a more science-based climate modeling approach such as FWP for factoring in the effects of iLUC.***

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<sup>1</sup> CARB's Proposed Regulation to Implement the Low Carbon Fuel Standard ISOR 3/5/09, Volume 1, pp IV 48

<sup>2</sup> CARB's Proposed Regulation to Implement the Low Carbon Fuel Standard ISOR 3/5/09, Volume 1, pp IV 17

## Cost Effectiveness of Crop-Based Biofuels

In determining the cost effectiveness of crop-based biofuels, CARB has ignored the effects that their use have on food prices. As detailed by the CBO<sup>3</sup>, increased demand for ethanol that was produced from corn increased the price of corn by over 50 cents/bushel. Since CARB is attempting to claim world wide benefits for the LCFS by assuming its universal adoption, ***it seems appropriate to consider the world wide costs resulting from higher food prices and the disproportionate cost to poorer countries.*** While the long-term low carbon fuel might be cellulosic ethanol, the LCFS is promoting early use of corn-based and cane-based ethanol which clearly take resources that could be devoted to food production and uses them to make fuel.

## Cost of Cellulosic Ethanol

The technology for producing ethanol from cellulosic feedstocks has not been proven on a commercial scale and no commercial plants have been built. There is no sound basis for the eventual cost for such a facility nor its yield. There are estimates for these costs and yields but until a plant is built and operating, these numbers are speculative.

## Cane-Based Ethanol GHG Intensity

CARB has acknowledged the poor combustion of straw in the fields used in cane production by including some of the non-CO2 gaseous emissions such as CH4 and N2O. But the ash and soot that is emitted into the air via this uncontrolled combustion should also be considered. We would expect these relatively dark particles to absorb more energy either in the atmosphere or on the ground once it lands. This albedo effect may be significant and should be considered.

Tesoro appreciates the opportunity to submit comments on the proposed low carbon fuel regulations. If you have any questions concerning these comments please call me or Dan Riley at 210-626-4860.

Sincerely yours,



Lynn D. Westfall

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<sup>3</sup> CBO Paper, The Impact of Ethanol Use on Food Prices and Greenhouse-Gas Emissions, April 2009, pp 7