Mr. John Courtis
Manager, Alternative Fuels Section
California Air Resources Board
P.O. Box 2815
Sacramento, CA 95812

23 February 2011

By email - Open Letter

Dear John,

I am writing to provide comments on the draft document "Detailed California-Modified GREET pathway for Corn Oil Biodiesel (COB)," which was posted on the ARB Low Carbon Fuel Standard (LCFS) website on 14 Dec. 2010.

In the proposed Low Carbon Fuel Standard pathway for COB, ARB treats corn oil separation differently than similar product pathways. The proposed approach does not give adequate consideration to the consequences of using the corn oil for biodiesel instead of another purpose and, despite adding this new co-product, the approach does not consider corresponding adjustments to the ethanol production pathways that generate the corn oil. The pathway for COB should be consistent with the approach used for other fuels under the LCFS. I therefore recommend another conceptual approach, which is consistent with the system expansion methodology. The logic behind this approach is described below.

It is my understanding that the generation of corn oil is driven by corn ethanol production (not by biodiesel demand). Thus, a given amount of corn oil is available. If not used for biodiesel, the corn oil will go into the feed market one way or another (either from separation or via DDGS), i.e. *the consequence of using the corn oil for biodiesel is that less oil will go into the feed market*. Accordingly, the corn oil biodiesel should be assigned a carbon intensity (CI) equal to the feed component it would otherwise displace *plus* the CI related to the processing steps required to turn corn oil into biodiesel (where by-products such as glycerol should also be treated by use of system expansion). This approach would most appropriately illustrate the GHG implications of using corn oil for biodiesel production. For further guidance, please see Ekvall and Weidema (2004): *System Boundaries and Input Data in Consequential Life Cycle Inventory Analysis*, International Journal of Life Cycle Assessment 9 (3) 161-171.

Thank you for your consideration of these comments.

Sincerely,

Jesper H. Kløverpris, MSc, PhD

LCA specialist at Novozymes and
member of CARB's former expert workgroup on ILUC[1]

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[1] Indirect land use change