NEW FUELS ALLIANCE

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Submitted via email to *jcourtis@arb.ca.gov*

RE: Comments Regarding LCFS Expert Working Group (submitted via email)

The New Fuels Alliance (NFA) appreciates the opportunity to provide written comments to the California Air Resources Board (ARB) relative to the Low Carbon Fuel Standard (LCFS) Expert Working Group established pursuant to Board Resolution 09-31.

The New Fuels Alliance is a national, not-for-profit organization that educates political leaders, regulators, public interest groups, businesses, and the general public about the economic, environmental and other benefits of non-petroleum fuel production and use. Its organizational purpose is to bring together the wide range of groups and sectors that are stakeholders in the development of non-petroleum fuels to build a broad and diverse base of support for a more sustainable fuel-energy future in the United States. Some of our California-affiliated coalition partners include Altra Biofuels, BlueFire Ethanol, Cilion, Mascoma, Pacific Ethanol, and Verenium.

NFA recognizes and appreciates the vast challenges associated with implementing, and ultimately enforcing, the world's first carbon-based fuel policy. We appreciate the Board's decision to create an expert working group to provide further analysis of critical unresolved issues. We hope ARB staff will manage a process that is objective and substantive to ensure that the regulated industry can move forward with innovations and investments under a durable policy framework.

<u>Indirect Effects of Other Fuels</u>

The single most controversial aspect of the CA LCFS Initial Statement of Reasons is the enforcement of indirect land use change (iLUC) penalties against biofuels. The provision is controversial for primarily two reasons: (1) the science is uncertain; and, (2) biofuels are the only fuel penalized for indirect, market-mediated effects under the LCFS.

The Board approved the ISOR conditioned upon the simultaneous adoption of Resolution 09-31. Due in large part to the controversy surrounding the enforcement of indirect effects against biofuels, the Board resolved in Resolution 09-31 to refine and improve the treatment of indirect effects under the LCFS. Notably, the agreement is not limited to the potential indirect effects of biofuels, specifically citing the "indirect effect analysis of *transportation fuels*" [emphasis added]:

> BE IT FURTHER RESOLVED that the Board directs the Executive Officer to convene an expert workgroup to assist the Board in refining and improving the land use and indirect effect analysis of transportation fuels and return to the Board no later than January 1, 2011 with regulatory amendments or recommendations, if appropriate, on approaches to address issues identified. This workgroup should evaluate key factors that might impact the land use values for biofuels including agricultural yield improvements, co-product credits, land emission factors, food price elasticity, and other relevant factors. The Executive Officer shall coordinate this effort with similar efforts by the U.S. EPA, European Union, and other agencies pursuing a low carbon fuel standard.

The preliminary draft of the "Low Carbon Fuel Standard Proposal for an Expert Working Group" prepared by ARB staff for the August 5th Workshop recognizes that the Resolution directs ARB to consider the indirect effects of other fuels by delineating both the potential land use effects of other fuels as well as "secondary effects in the energy market." However, unlike for biofuels, the proposal does not identify specific issues to investigate for other fuels.

We recommend that ARB staff more specifically delineate the potential indirect effects of other fuels. The list should include, but not be limited to, the following: (1) for electricity, the potential impact on the margins of the power sector of increasing demand for electricity, particularly with regard to incenting coal combustion;[1] (2) for natural gas, the potential impact on the margins of the power sector of increasing demand for natural gas, particularly with regard to incenting coal combustion to replace natural gas-to-power in traditional and peak scenarios; (3) for tar sands, the potential impact on the margins of the power sector of significantly increasing demand for regional natural gas to produce the fuel, particularly with regard to incenting coal combustion; (4) for electricity, the indirect effects of mineral mining to secure lithium and nickel; (5) for petroleum, the price relationship between the marginal barrel of oil and the agricultural commodities markets, which in turn drives planting decisions and indirect land use change, as well as other impacts such as the displacement of petroleum coke.

It is critical that ARB make this initial assessment of the potential secondary effects of other fuels in order to facilitate choosing members of the working group that can address these effects. In other words, the preliminary working group document states that ARB staff will select 20 members from a larger group of applicants that provides "[a] balanced representation of technical expertise to tackle major issues of concern." As such, the major issues of concern must be identified prior to the selection process. At minimum, and given that there has been limited analysis of the secondary effects of other fuels conducted at ARB, the staff should solicit information about the potential secondary effects of other fuels from existing national and international experts in this field in advance of the working group process, so that ARB can identify issues to investigate as called for by Resolution 09-31. ARB staff should also release to the public any work it has conducted on the indirect effects of other fuels, including but not limited to any initial estimation or modeling runs conducted on petroleum, natural gas, hydrogen, electricity or other LCFS compliance fuels.[2]

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[1] Some stakeholders have suggested that this is not applicable because AB 32 caps carbon emissions in the electricity sector. However, the effects of increased electricity demand for vehicles in California will change markets outside of California, and the United States, which directly correlates to the theory behind indirect land use change.

[2] On several occasions, ARB staff has stated that they have looked at the indirect effects of other fuels. However, this information has not been released to the public.

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Other Indirect Effects of Biofuels

One of the controversial components of the iLUC penalty against biofuels is that it is levied in isolation of other indirect effects, many of which may be indirect benefits to producing and using more biofuels. Put another way, both the EPA RFS and ARB LCFS rulemaking processes have resulted in public comments to the effect that the reductive land use impact of biofuels is likely not the only significant secondary or indirect effect of using more biofuels. The most obvious omitted significant indirect benefit of biofuels is the avoidance of marginal petroleum use, which is both more expensive and more carbon intensive. Yet, the draft working group document does not identify other indirect effects of biofuels.

We recommend that ARB amend the working group directive to include an analysis of the other indirect effects of using more biofuels in the marketplace. The analysis should start with the effects that are directly tied to the avoidance of petroleum consumption in the energy marketplace, as this is the most tangible and quantifiable indirect benefit of biofuels. Two examples that should be included in the directive are: (1) the impact of increased biofuel markets on secondary refining markets such as petroleum coke; and, (2) the impact of increased biofuel markets on marginal (including but not limited to tar sands) petroleum-derived fuel production and use.

As documented by the recently released *Energy Outlook 2009* from the Energy Information Administration (EIA), using greater volumes of biofuels will both reduce the quantity of crude oil refined (which reduces the amount of petroleum coke and other secondary crude oil products produced and used) and the quantity of marginal (largely unconventional) petroleum needed to meet U.S. demand for liquid transportation and heating fuels (which results in the avoidance of producing and using extremely carbon intensive next generation petroleum fuels). For example, in its 2009 Annual Energy Outlook reference case, the Energy Information Administration (EIA) projects that world liquid fuels supply will grow by 22% by 2030, and that 42% of liquid fuel growth during this period will be met with unconventional fuels. It assumes that biofuel is an unconventional fuel, and will account for a large fraction of the growth of unconventional fuels. The other unconventional fuels are highly carbon intensive (fraction of growth shown below):

Sources of Growth in Unconventional Liquid Fuels, 2007-2030

Unconventional Source	Share of Unconventional Supply Growth
Bitumen (Tar Sands)	29.9%
Extra Heavy Crude	5.8%
Biofuels	46.1%
Coal-to-Liquids	13.1%
Gas-to-Liquids	3.0%
Oil Shale	1.8%
Other	0.4%

Source: EIA, 2009 AEO

Some have argued that marginal displacement should not be considered because it is the equivalent of changing the petroleum baseline. However, because market-mediated effects have been introduced into the carbon accounting metric via iLUC, other market-mediated effects should be

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considered. Clearly, biofuels displace the need for greater volumes of unconventional fuels in the marketplace, and removing biofuels from the portfolio of unconventional sources of fuel would increase the use of the other fuels shown above, irrespective of the petroleum fuel baseline. Put another way, if market-mediated effects are included in the LCFS, as they are for iLUC for biofuels, these and other significant secondary effects should be considered as part of the working group process.

Transparency & Conflict of Interest Issues

ARB staff has indicated that they intend to implement a two-tiered working group structure, in which a primary 20 person working group would be served by technical subgroups. When questioned, ARB staff did not provide a specific criterion for how inclusion in the primary group would be determined.

The California Low Carbon Fuel Standard, and the conclusions reached by the expert working group, will have a significant impact on the multi-billion dollar transportation fuel marketplace. By definition, the LCFS provides carbon-based market valuations of different fuels relative to each other and a petroleum fuel baseline. The inclusion or exclusion of a single indirect carbon effect could fundamentally change the relative values of electricity, hydrogen, natural gas, biogas, biofuels and petroleum in the marketplace. It is therefore critical that ARB strongly enforce a working group decision-making process that is transparent and addresses any conflict of interest issues that may arise.

The preliminary draft working group document recognizes the need to maintain objectivity: "[t]he expert workgroup will be comprised of individuals who have the skills and experience necessary to conduct **objective**, technical-level analyses that can help policy development [emphasis added]." However, the draft document does not discuss its conflict of interest policy with regard to choosing the working group or maintaining objectivity in the assessment process. We strongly recommend that ARB staff immediately adopt a conflict of interest/transparency provision for working group member selection and activities. This is important for several reasons:

(1) The working group will compel or prevent the making of a governmental decision by its action or inaction; and,

(2) The inclusion or exclusion of categories of indirect effects, which is the subject of the working group deliberation, will fundamentally change the relative values of different fuels under the LCFS and shift multi-billion dollar industries; and,

(3) Many of the academic and/or published experts in the field of secondary carbon effects and indirect land use change science have direct contractual ties to the industries with a major stake in the outcome of the working group process. This includes several individuals with direct ties to the petroleum industry, either directly (via contractual work, as is the case with many UC-Davis researchers) or indirectly (via contractual work through BP's Energy Biosciences Institute or the Institute for Transportation Studies at UC-Davis).

It is unclear at this time which experts are encumbered by potential conflicts of interest. It is also unclear how ARB intends to define a conflict of interest, and whether or not it intends to disqualify certain experts based on existing or recent economic interest in affected parties, or merely require

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these individuals to disclose their economic interest. While a comprehensive conflict of interest standard should be established by ARB for the working group proceedings, a reasonable first step toward protecting the objectivity of the working group in the immediate term is to implement a transparency standard for experts submitting their name for and ultimately serving on the expert working group. All experts seeking a seat in the working group should be required to disclose all direct or indirect economic ties (including contract work, gifts and travel) to any of the industries regulated under the LCFS during the last 3 years, including existing submitted proposals for prospective work or expected contracts in the next 12 months. At this time, we are not asking for experts with financial ties to the regulated industries to be excluded from the primary working group. But any financial ties should be disclosed and posted on the ARB website for public view.

Comparative Modeling Approaches

One of the underlying but primary objectives of the expert working group is to facilitate further analysis of a controversial and unfinished body of work related to the indirect carbon effects of various fuels. As such, we strongly support the identification of "comparative modeling approaches" as a primary consideration for the group. This is important because a central point of concern among stakeholders is ARB's reliance on one model (GTAP) and one primary set of assumptions (with limited sensitivity runs) to determine a major and highly uncertain component of a fuel regulation. The EPA peer review process confirmed that there are many problems with relying solely on the GTAP model (or any one model) as a basis for direct regulation.[3] While the document specifically mentions an "opportunity cost" approach, there are several other approaches that should be formally considered by the group to better "triangulate" the ultimate outcome:

1) The expert working group should assess comparative modeling *assumptions* within the current models. As discussed, the GTAP/iLUC results are based on a primary set of initial assumptions, with some sensitivity runs within this set. It would be instructive to consider different sets of assumptions, as determined by the working group, and conduct GTAP modeling runs based on these assumptions to assess both the model's sensitivity to different primary assumptions and the iLUC results from these assumptions. Many of the flaws in GTAP – such as its apparent inability to take into account the availability of marginal and idle land – should be born out by these new model runs. Such a process would better triangulate a final outcome.

2) The expert working group should assess the "bottom up" analysis provided by Tom Darlington of Air Improvement Resource (AIR, Inc.). The study, submitted to ARB staff in February 2009, concludes that producing and using 15 bgy of corn ethanol will not result in significant international indirect land use change. The basis of the study is a projection of global land use made by Informa Economics. Informa does not rely on partial or general equilibrium agricultural economic model to make its forecasts. Instead, it utilizes quantitative analysis and a variety of data resources that are updated on a regular basis. No substantive analysis of this report has been provided by ARB staff, and it remains unclear how it compares to the GTAP work with

[3] See http://www.epa.gov/otaq/renewablefuels/rfs2-peer-review-model.pdf, p. I-6.

regard to accuracy and uncertainty. At a minimum, this study is far more accessible and transparent than the GTAP analysis provided to date, and is worthy of formal consideration.

3) The expert working group should look at ways to correct the problem of comparing marginal biofuel (or other alternative fuel) gallons to average petroleum gallons. Creating relative CI values based on a comparison between average and marginal gallons is widely recognized as a flawed approach. One way to address this issue, at least partially, is to integrate a marginal displacement approach into the current methodology, as discussed above. The expert working group should look at ways to do this within the current framework to create a more accurate comparison between alternative and petroleum-derived fuels.

We appreciate the opportunity to provide comments on the expert working group process, and would be happy to discuss any further questions or comments your staff may have.

Sincerely,

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