NATIONAL BIODIESEL BOARD

May 12, 2010

Arthur Marin
Executive Director
NESCAUM
89 South Street, Suite 602
Boston, MA 02111

Dear Mr. Marin:

I am writing to share a number of suggestions that members of the National Biodiesel Board (NBB) believe would enhance the Northeast States Center for a Clean Air Future (NESCAF) report, "Economic Analysis of the Northeast/Mid-Atlantic Low Carbon Fuel Standard: Draft Data and Assumptions, Part I."

If you should have any questions about our comments, please feel free to contact me by telephone at 573.635.3893 or by email at sneal@biodiesel.org. Thank you, in advance, for your consideration of our industry's recommendations.

Sincerely,

Shelby Neal
Director of State Governmental Affairs

Background and Industry Overview

Biodiesel is a diesel replacement fuel that is considered an “Advanced Biofuel” under the Renewable Fuels Standard (RFS2) program. The fuel is made from agricultural oils, fats, and waste greases and is refined to meet a specific commercial fuel definition and specification. The fuel is produced by reacting feedstock with an alcohol to remove the glycerin and meet the D6751 fuel specification set forth by the ASTM International (formerly American Society for Testing and Materials). Biodiesel is the only alternative fuel to meet all of the testing requirements of the 1990 amendments to the Clean Air Act. There are currently 173 biodiesel plants operating in the U.S. with a combined production capacity of 2.69 billion gallons.

Biodiesel is primarily marketed as a blending component with conventional diesel fuel in concentrations between two (B2) and twenty percent (B20). It is distributed utilizing the existing fuel distribution infrastructure with blending occurring both at fuel terminals and “below the rack” by fuel marketers. Biodiesel is beginning to be distributed through the petroleum terminal system. To date, biodiesel is available in more than 72 fuel distribution terminals. Last year, two major pipeline companies successfully tested B5 blends in pipelines. In addition, the biodiesel industry has committed funds to continue conducting the testing required to move biodiesel through U.S. pipelines on a large scale. Already, biodiesel is transported through pipelines in Europe. Expanding that capability in the U.S. would significantly increase biodiesel penetration in the U.S. diesel fuel market and reduce prices.

While biodiesel is, according to the U.S. EPA, the first commercial scale “Advanced Biofuel” produced and available in the United States, it is also important to note that the biodiesel industry stimulates development of new low carbon feedstocks. The feedstocks used to produce U.S. biodiesel are extremely diversified, with waste products such as animal fat and used cooking oil (yellow grease) comprising an increasingly significant portion of the feedstock used to produce fuel. Biodiesel production is currently the most efficient way to convert biomass into low-carbon diesel replacement fuel. As a result, industry demand for economical, low carbon, reliable sources of oils is stimulating promising public, private, and non-profit sector research on so-called “second generation” feedstocks such as algae. The NBB is participating in this effort by making substantial investments in algae research in collaboration with the Donald Danforth Plant Science Center. It is estimated that for every 100 million gallons of biodiesel that is produced from algae, 16,455 jobs will be created and $1.461 billion will be added to the national gross domestic product.

Costs of Biodiesel

The NESCAUM report sites economic data generated by the California Air Resources Board (CARB) and the U.S. Environmental Protection Agency (U.S. EPA). Page 36 of the report indicates that the total costs associated with preparing a terminal for storage and dispensing of biodiesel are $460,000. Based on our experience, this figure represents a high cost case but is nevertheless within the range of what one might expect to invest in such infrastructure.

In addition, page 64 projects costs for biodiesel for the years 2010 through 2020. Based on information provided by NBB members, we believe the 2010 estimate for soy-based biodiesel of $3.15 per gallon is reasonable. With respect to biodiesel derived from waste feedstocks, we believe the costs indicated ($1.57 to $1.78 per gallon) are in line with producers employing progressive business plans.

Program Duration

Information presented on page 54 of the report and comments from the April 22 webinar would seem to indicate that NESCAUM staff are considering recommending a timeframe for implementation beyond the original 10-year schedule. As the NBB has noted in previous official comments, the U.S. biodiesel industry could meet a 10 percent greenhouse gas (GHG) reduction requirement in the Northeast as soon as next year. As such, we see no justification for delaying the realization of carbon emission reductions in the Northeast and Mid-Atlantic transportation and space heating sectors. In addition, it should be noted that the longer implementation is delayed, the longer the associated economic benefits will be delayed. New York and Pennsylvania, in particular, have the potential to become major producers of both biodiesel and feedstocks used to make the fuel.

Heating Oil

The NBB is disappointed by NESCAUM staff's interim decision not to include heating oil in the low carbon fuel standard (LCFS). Fuels such as biodiesel exist in today's commercial marketplace that could provide substantial carbon emission reductions in space heating applications. The decision by NESCAUM staff is particularly puzzling when one considers that the national heating oil industry has voluntarily chosen to support government policies requiring biodiesel to be blended with heating oil. In addition to GHG reductions, conventional heating oil mixed with biodiesel ("Bioheat") reduces every category of criteria emissions. These decreased emissions result in significant public health benefits, particularly in cities with high populations that rely extensively on heating oil such as New York.

Proposed Carbon Intensity Values

NESCAUM staff's approach to estimating the carbon intensity of soy-based biodiesel is flawed in so far as the "high-end" carbon intensity value is represented by results presented by the California Air Resources Board (CARB). With all due respect to CARB staff, that agency's analysis was seriously flawed and should not be used for any serious purpose. An executive summary of NBB's comments to CARB on the agency's report are attached to this document.

In short, problems with CARB's analysis include:

- Failing to consider the impact of projected agricultural yield increases and overestimating the need for additional agricultural lands;
- Not including idle lands in the modeling, which account for 30 percent of the world's agricultural acres;
- The Global Trade Analysis Project (GTAP) model is incapable of predicting the type of land (e.g. forest, crop, or pasture) that may be converted for crop expansion and it overestimates carbon emissions by incorrectly assuming forests will be converted instead of available crop, pasture, and idle lands;
- Replacing official government data with questionable data that, in each case, increased the carbon intensity of the replaced data by at least 100 percent; and
- Producing results that directly contradict the indirect land use change theory (ILUC). For example, when CARB staff modeled an increase in soy biodiesel demand from 1 billion gallon to 1.5 billion gallons, this 50 percent *increase* showed a *decrease* in emissions from indirect land use change. This means: a) the model is not working properly; or b) the ILUC theory is invalid.

For these reasons, as well as the fact that the U.S. EPA's analysis was substantially more thorough, that agency's results should be relied upon exclusively for regulatory purposes. As you may know, the U.S. EPA indicated that soy-based biodiesel reduces GHG emissions by 57 percent relevant to petroleum-based diesel fuel, making biodiesel the nation's first and only commercial-scale "Advanced Biofuel."

If NESCAUM desires to use a range of figures in its analysis, we recommend staff use that which was published by U.S. EPA. In terms of GHG emissions, the U.S. EPA analysis indicates that soy biodiesel could be as much as 85 percent better than petroleum and is at least 24 percent better than petroleum. However, if this approached is used we recommend noting that: 1) U.S. EPA is utilizing the 57 percent figure for regulatory purposes, thus viewing it as the most valid and accurate estimate; 2) all uncertainly in the analysis derives from the inclusion of indirect emissions from speculative international land use changes; and 3) soy biodiesel's direct emissions are 85 percent better than petroleum with zero uncertainty, according to U.S. EPA.

Finally, the most recent and accurate soy lifecycle inventory available was published in February of this year by the United Soybean Board (USB). It includes updated data that was not included in the GREET, CARB, or U.S. EPA lifecycle analyses. A copy of this report is attached for your review. The study was conducted in accordance with the International Standards Organization (ISO) standards on lifecycle assessments including ISO 14040:2006 and 14044:2006. While the USB report is the latest assimilated work, it relies on 2007 statistics from USDA. Using 2009 USDA statistics would show a further increase with respect to the benefits of biodiesel relative to petroleum-based diesel. Since advances in production and processing efficiency are occurring at a rapid pace, utilizing the most recent data is of paramount importance if accurate results are to be calculated, which is why we recommend incorporating the 2009 USDA data.

Economic Benefits

NESCAUM staff should be careful not to underestimate the economic benefits of the policy, including local jobs that would be created within the region as a result of additional demand for biodiesel. This is particularly true in states such as New York which has as much as two million acres of fallow agricultural land that could be used for production of a high yielding energy crop like canola once a local market for the product has been established. Importantly, biodiesel creates direct employment opportunities in both the feedstock and fuel production sectors. In addition, the mere existence of the industry encourages research, investment, and development of new feedstocks such as algae. As a point in fact the U.S. Department of Energy reignited its algae research program only after the biodiesel industry had been established as a significant potential use for the feedstock. Ultimately, due to biodiesel's positive effects on numerous sectors, the industry supports approximately 23,000 jobs nationwide.

Biodiesel Available to Meet Northeast/Mid-Atlantic LCFS

We fail to understand NESCAUM staff's assumption that only a small percentage of the volumes required to meet the federal RFS2 policy would be available to meet a LCFS policy in the Northeast/Mid-Atlantic region of the country. Due to the fact that considerably more production exists in the Northeast/Mid-Atlantic than in California and that this region is substantially closer in proximity to high volume producers in states such as Pennsylvania and Ohio, we believe the opposite would actually be true. In other words, domestically produced biodiesel would be shipped to the Northeast to meet the requirements of that LCFS before it would be sent to California to meet the requirements of that state's low carbon policy. Nevertheless, the domestic biodiesel industry has more than 2.6 billion gallons of existing capacity and can, therefore, meet the requirements of both policies simultaneously.

Fisher-Tropsch

Fisher-Tropsch is a form of renewable diesel. A notation on page 64 incorrectly indicates that it is a form of biodiesel.

LCFS Policy Scenarios

The three policy scenarios presented by NESCAUM staff do not include all the likely mixes of fuel options that could be used to reduce the region's carbon emissions. For example, including both biodiesel and ethanol in a "Biofuels Future" suggests a linkage between the fuels that does not exist. Biodiesel and ethanol have distinctly different processes, feedstocks, greenhouse gas emission profiles, and uses. While biodiesel can have beneficial uses in passenger cars (see Europe where diesel vehicles command more than 50 percent of the market), it is primarily used in the U.S. as a replacement fuel in heavy duty applications and space heating. Therefore, we recommend adding a policy scenario whereby electric vehicles realize increased penetration in light duty applications and biodiesel is relied upon to reduce carbon emissions in heavy duty applications and home heating oil.

Air Quality Impacts

NESCAUM staff note in the report that they are accessing upstream emission data from the GREET model, the National Renewable Energy Laboratory (NREL), and CARB. The previously referenced (and attached) lifecycle inventory published by the United Soybean Board is more current and accurate. As such, we recommend using this data.