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Sent electronically

August 27, 2010

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

Subject: Northeast/Mid Atlantic Low Carbon Fuel Standard Economic Analysis

Dear Mr. Marin:

NPRA, the National Petrochemical and Refiners Association, is pleased to provide comments on the economic analysis of a Northeast/Mid Atlantic regional Low Carbon Fuel Standard. NPRA's members comprise nearly 500 companies, including virtually all U.S. refiners and petrochemical manufacturers. Our members supply consumers with a wide variety of products and services that are used daily in homes and businesses. These products include gasoline, diesel fuel, home heating oil, jet fuel, asphalt products, and the chemicals that serve as "building blocks" in making plastics, clothing, medicine and computers.

NPRA appreciates the outreach efforts for input from many stakeholders. The webinars conducted this year have been a very useful way to communicate. These discussions and the ensuing open and transparent comment process will inform policymakers and potentially avoid unintended consequences.

NPRA has a few comments on your economic analysis. In addition, this is an opportunity to alert you to potential increases in global greenhouse gas emissions from "crude oil shuffle." And perhaps induced biofuel and vehicle shuffles as well.

A. Economic Analysis of a National and Regional LCFS

An economic analysis of a nationwide LCFS was recently released by the Consumer Energy Alliance that should be shared with all interested stakeholders (attached).¹ Charles River Associates (CRA) analyzed a nation-wide LCFS beginning in 2015 and achieving a 10% reduction in the carbon intensity of transportation fuels relative to the base year by 2025. This CRA study makes many of the same assumptions that are embedded in

¹ <http://consumerenergyalliance.org/wp/wp-content/uploads/2010/06/CRA-LCFS-Final-Report-June-14-2010.pdf>



NESCAUM's economic analysis and should inform policymakers of the potentially severe economic consequences of the adoption of an LCFS program. While the study focuses on a uniform national program, the analysis identified specific regional impacts.

Economic impacts reported by the CRA study include:

- By 2025, a nation-wide LCFS is estimated to cause a net loss of between 2.3 – 4.5 million total jobs from baseline levels; this projection takes into account all “green jobs” predicted to be created from an LCFS and reports that such employment gains are far outpaced by jobs destroyed by an LCFS.
- By 2025, a nationwide LCFS will reduce household annual purchasing power by \$1,400 to \$2,400 relative to 2010 income levels.
- By 2025, a nationwide LCFS will reduce investment by \$200 to \$320 billion relative to the baseline.
- By 2025, GDP, a commonly used measure of total economic activity, is estimated to decline below the baseline by approximately 2% to 3% or \$410 to \$750 billion under a national LCFS.

Energy impacts reported by the CRA study include:

- By 2025, a national LCFS will increase the cost of transportation fuels (gasoline and diesel fuel) to consumers by 90% to 170% relative to the baseline.
- In order to keep the cost of transportation fuel from increasing even further in the year 2025, it will be necessary for low carbon fuel production to increase to more than 2.5 times the production forecasted in the baseline for the year 2015.
- By 2025, the higher cost of transportation fuel will cause drivers to reduce their driving by 9% to 14% relative to the baseline. Trucking ton-miles will be down by 9% to 13%.

The CRA report concludes that “Low carbon fuels are like cream in a cup of coffee. If enough cream is not on the table to achieve the desired mix, then the only alternative is to reduce the amount of coffee in the cup. To reduce transportation fuel consumption sufficiently for the LCFS to be met requires very large increases in fuel prices, so that consumers will limit their driving and demand new vehicles that are much more costly and provide much higher fuel economy. Price increases for fuels used in commercial transportation will also be driven up, in order to reduce fuel use in trucking sufficiently to achieve the required reductions in emissions from fuels used in heavy duty gasoline and diesel engines.”

The CRA report also assesses the regional impacts of a national LCFS for employment, purchasing power, gross regional product, and investment. The 11 Northeast/Mid Atlantic states are part of Petroleum Administration for Defense District



(PADD) 1.² For PADD 1, the CRA report predicts that the projected economic impacts include:

- a net loss of between 750,000 and 1.3 million total jobs (again, taking into account any “green jobs” created);
- a reduction in household annual purchasing power by \$1,200 to \$2,200; and ,
- a loss of gross regional product of \$140-290 billion (or 1.7-3.5 %).

Some of the methodology adopted by NESCAUM is similar to CRA’s. Both NESCAUM and CRA use EIA’s 2010 Annual Energy Outlook Reference Case and optimistic/pessimistic assumptions to reflect uncertainties on key assumptions such as emissions factors and costs.

As you are aware, EIA projects that the full federal Renewable Fuel Standard (RFS2) volumes will not be realized in 2022 because cellulosic ethanol and liquids from biomass volumes will be small (see slide 6).³ This is relevant because the timeframe for the economic analysis of the NE/MA regional LCFS is 2013-2022 (through 2027 in a sensitivity case). Given that the transportation fuels sector is already facing the technology forcing mandates of RFS2 that are deemed not be achievable by EIA, a regional LCFS on top of the federal program will not accelerate technology development and is ill-advised.

B. Administrative and Enforcement Cost Estimates Are Understated.

NESCAUM’s slide 70 presents assumptions on administrative and enforcement costs borne by participating states to implement LCFS: \$100,000 – 300,000 per year per state. These estimates are low; California for example required several full time staff and contractor resources to develop the rule during the past three years. There will be many questions and the need for workshops to explain this program to businesses; California held over 100 workshops, task forces, etc. Public hearings will be required before each state can adopt regulations to implement LCFS. The design, creation, and maintenance of electronic systems at the state and regional levels will be needed for monitoring, compliance, and enforcement, adding further to the complexity and cost.

² The East Coast, from Maine to Florida.

³ EIA’s Peter Gross, “EIA’s Long-term Biofuels Outlook: Continuing Shifts in the Industry and the Long-term Outlook,” 2010 Energy Conference, Washington, DC, April 6, 2010.
<http://www.eia.doe.gov/conference/2010/?featureclicked=1&>
<http://www.eia.doe.gov/conference/2010/session2/gross.pdf>



C. LCFS Compliance Uncertainties

There are many unanswered questions that make an economic analysis premature.

1. Will the LCFS promote the replacement of Midwest corn ethanol in gasoline with other types of ethanol that are assumed to have lower carbon intensity estimates? Or will the LCFS allow the continuation of Midwestern corn ethanol and promote other types of ethanol to supplement Midwestern corn ethanol?
2. NESCAUM's slide 32, second bullet, says that "LCFS will not influence the types of biofuels produced for RFS compliance, or the timing of their availability." Does this mean that the Northeast/Mid-Atlantic LCFS will promote the growth of Midwestern corn ethanol as does RFS?
3. NESCAUM's slide 31 acknowledges the current 10% limit for blending ethanol with gasoline and adopts EPA projections for flex-fuel vehicle penetration and E85 infrastructure. What does this mean? EPA acknowledges that the RFS could require "very dramatic changes and a mandate" (75 FR 14759; 3/26/10). This includes "increases in the number of FFVs on the road, the number of E85 retailers, and the FFV E85 refueling frequency" (75 FR 14760; 3/26/10). EPA estimated that the E85 refueling rate is only 4% for those FFVs with reasonable access to E85 (75 FR 14762; 3/26/10). EPA did not include regulations in the RFS program to promote these changes. Will each state provide adequate incentives to voluntarily promote an increase in the number of FFVs on the road, the number of E85 retailers, and the FFV refueling frequency? What scenario(s) are being considered by NESCAUM to evaluate impacts should assumed FFV penetration and use rates be less than expected?
4. The "Biofuels Future" assumes that the prices of low-carbon biofuels are low and the supply of local biomass feedstocks is high (see NESCAUM's slides 63-66). But how will these biofuels be used given the 10% cap on ethanol use in gasoline and the problems with E85?
5. How will electric and CNG vehicles be used for LCFS compliance? How will the infrastructure necessary to service such vehicles be financed and built? Assuming that CNG and electric vehicles generate a credit for LCFS compliance, who owns this credit initially? The vehicle manufacturer? The vehicle owner? A local utility? The owner of the refueling equipment?
6. Cost assumptions in each scenario outlined in the 8/12/10 PowerPoint presentation are very optimistic: for example incremental costs of EVs of 0 to 5 k\$ (slides. 57, 64 and 69) and incremental cost of CNG vehicles of 0 k\$ (slide 69). Similarly, costs of acquiring biomass and producing biofuels are unclear.



The results of an economic analysis will be more useful if more detailed and structured elements are identified regarding the basis for assumptions put forth for modeling.

D. An LCFS Will Increase Global Greenhouse Gas Emissions

The implementation of a nationwide LCFS in the United States would *increase* global greenhouse gas emissions associated with changes in crude oil transport by up to 19 million metric tons each year – contradicting the claim of LCFS advocates that the standard would reduce such emissions – according to a study issued this summer.⁴ The study concludes that because an LCFS would prevent American refineries from importing petroleum obtained from oil sands in neighboring Western Canada, the United States would instead have to import more oil in tankers from the Middle East and elsewhere. At the same time, the Canadian oil would be shipped in tankers across the Pacific to China and other Asian locations. The study calls this long-distance movement of oil thousands of miles around the world in tankers a “shuffle” that would result in higher carbon dioxide emissions than simply extracting the Canadian petroleum from the oil sands for U.S. consumption, due to emissions created by shipping the oil such great distances.

The study found that:

- “A LCFS implemented in the U.S. results in a notable increase in greenhouse gas emissions due to the displacement of Canadian crude imports to the U.S. and re-routing of crude imports and exports to accommodate this displacement. ... Nearby Canadian crude sources would be diverted to regions not affected by LCFS and replaced with supplies from distant parts of the world.” (Page 2)
- “While it is likely that LCFS would change the mix of crude imports to the United States, LCFS implemented in the United States is not expected to change overall trends in energy use and demand for crude resources throughout the rest of the world. A shift in U.S. crude-supply preferences will simply cause redirection of crude supplies elsewhere.” (Pages 4-5)
- “This analysis of the change in crude-transport-related emissions accompanying implementation of a LCFS indicates that the net effect will be a doubling of GHG emissions associated with changes in crude-transport patterns. It indicates an increase in global GHG emissions by 7.1 to 19.0 million metric tons per year, depending on the extent of resulting Canadian crude displacement.” (Page 3)

⁴ http://www.npra.org/files/Crude_Shuffle_Report_0616101.pdf



Canada is currently the largest supplier of petroleum imported into the United States, but other nations are looking to the Canadian oil sands as a potential energy source. China alone has already invested more than \$6 billion in Canadian oil sands projects as it continues to rapidly increase its presence in overseas energy production.

We are concerned that a state or regional LCFS in the northeast may create a similar type of shuffle concerning biofuels and perhaps even vehicles. A localized LCFS may drive selective use of perhaps isolated low-CI biofuel and/or electric vehicles, forcing the displacement of other biofuel and conventional vehicles to other markets. These types of displacements cause greater movement of products and are not cost efficient except for the constraints of an imposed LCFS. We see no evaluation of these additional “shuffles” in NESCAUM’s assessment plans.

* * *

NPRA strongly urges NESCAUM and the signatory states to the MOU to undertake a comprehensive incremental economic and benefit analysis of a regional LCFS, using a specific set of realistic low carbon fuel development and implementation assumptions, before moving forward with its current work. At a time when the national and Northeastern states’ economies are trying to recover from a deep and persistent recession, states must treat carefully in promoting policies that seem promising but will in fact destroy millions of jobs, increase costs to consumers and businesses, and harm both the national and the states’ economies. When one couples these cautions with the fact that an LCFS may actually increase GHG emissions, rather than reduce them, policymakers must tread carefully.

NPRA appreciates this opportunity to provide input and perspective.

Sincerely,

A handwritten signature in black ink, appearing to read "Gregory M. Scott", is written over a white background.

Gregory M. Scott
Executive Vice President and General Counsel

Attachment